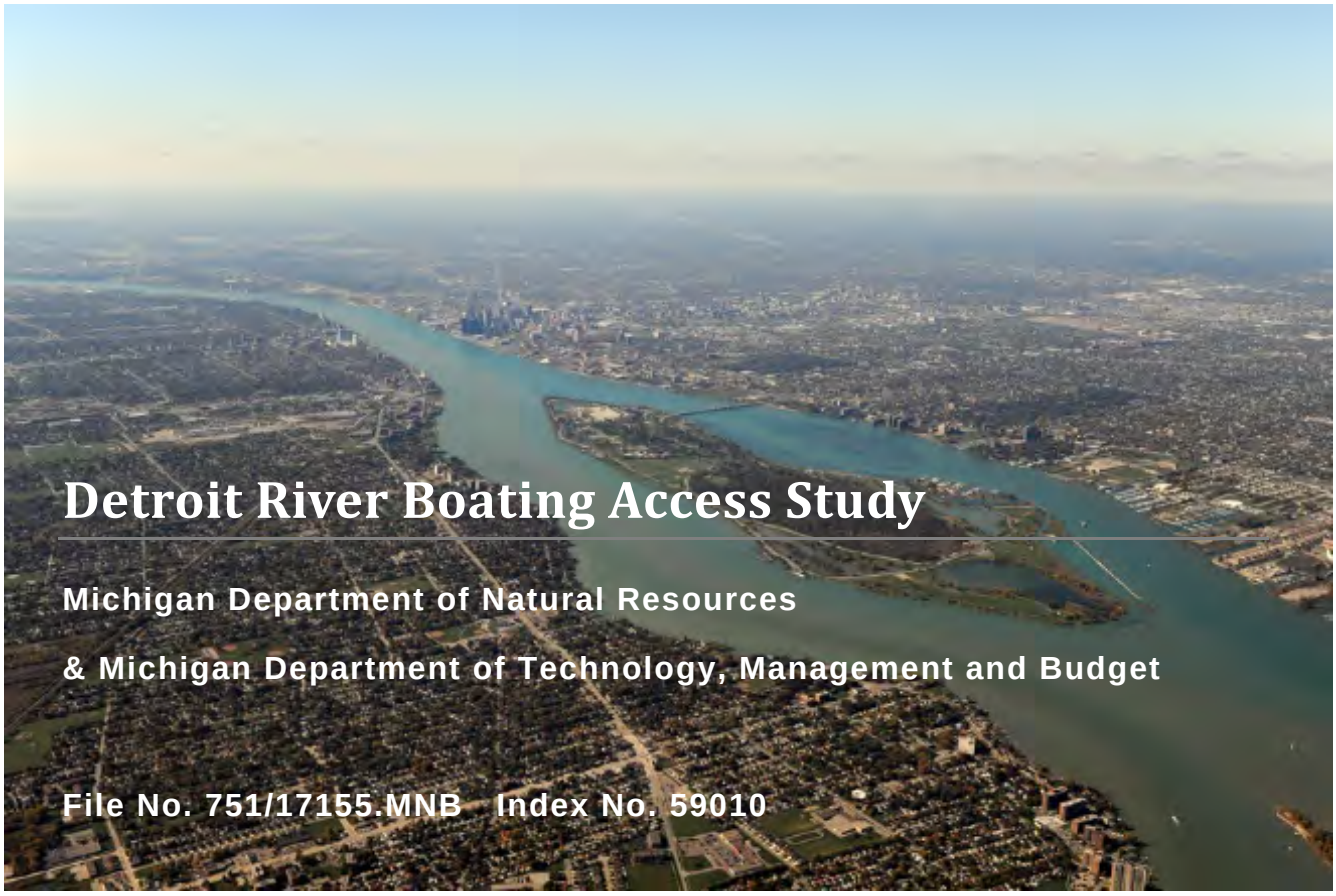

Detroit River Boating Access Study

Michigan Department of Natural Resources

& Michigan Department of Technology, Management and Budget

File No. 751/17155.MNB Index No. 59010

September 2019

OHM Advancing Communities®

Detroit River Boating Access Site Assessment

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Detroit River Boating Access Site Assessment

1. **OVERVIEW**

a. PROJECT GOALS

The Michigan Department of Natural Resources (MDNR) initiated a feasibility study to assess the need for additional public boating access sites (BAS) within a 5-mile radius of the downtown Detroit area. The goal of this study was to determine if the existing public BAS to the Detroit River near downtown are sufficient. If a need for an additional launching facility exists, the MDNR asked for a review of potential MDNR managed sites for additional launching facilities. A comprehensive assessment of the MDNR managed sites was prepared based on location, cost to construct, and suitability of the site for boating activities.

b. SCOPE OF THE REPORT

The locations and distribution of the existing boating access sites along and approximate to the Detroit River were mapped to better understand the gaps in existing infrastructure. From this data, it was apparent that significant gaps existed for public access to the Detroit River and that there are no MDNR managed BAS within the study area.

This report also includes the analysis of a public survey of the park users and boaters that access the Detroit River within the study area. Survey respondents provided feedback on the need for BAS in the north Detroit River as well as feedback regarding the suitability of the BAS within the study area.

The report provides a comprehensive assessment of the information obtained including; site analysis, description of the process of collecting data in the field and online and summarizes results that lead to review and a functional use diagram for two MDNR sites. The conclusion and recommendation for the feasibility of a BAS site was generated from a comparison of BAS criteria and site characteristics.

2. ASSESSING THE NEED

a. INVENTORY OF EXISTING BOATING ACCESS SITES

The Detroit River provides some excellent year-round fishing and recreational boating opportunities in Michigan and the Great Lakes region. The limited number of conveniently located, well-maintained and secure boat launching ramps with associated parking areas do not meet the public's needs. The intention of this study was to focus primarily on MDNR managed facilities on the northern section of the Detroit River. The project scope was determined from the understanding that more boating access opportunities currently exist along the length of shoreline from the Ambassador Bridge south to the entrance into Lake Erie than to the north and Lake St. Clair.

To properly address the question of needing to add a MDNR boating access site on the Detroit River, an inventory and analysis of all existing access locations currently located on the Michigan side of the river was conducted. The study area extended roughly is a 5-mile radius around downtown Detroit.

The access locations found consist of a mix of size and number of available launch ramps, associated amenities, secure parking areas, and ownership (state, municipal, municipal with leased operators, and private enterprise). Of the 19 access locations identified, 10 are boating access sites, 2 are private BAS, 3 are a public access point and 4 are private access points. (See Appendix A) The MDNR Waterways Program defines a boating access site (BAS) as a facility with a launch, maneuver area, and parking. These can either be public (open to the public and publicly managed or owned) or private (may or may not be open to the public, possible restrictions, and privately managed or owned). Other forms of access are general private or public access where they do not have all the elements a BAS would provide. For example, a municipal beach could be considered a public access, but not a BAS.

Private facilities were located to understand all available access to the river. The study did not focus on the development of private facilities due the very nature of a private facility typically not open to the public and restrictive in nature.

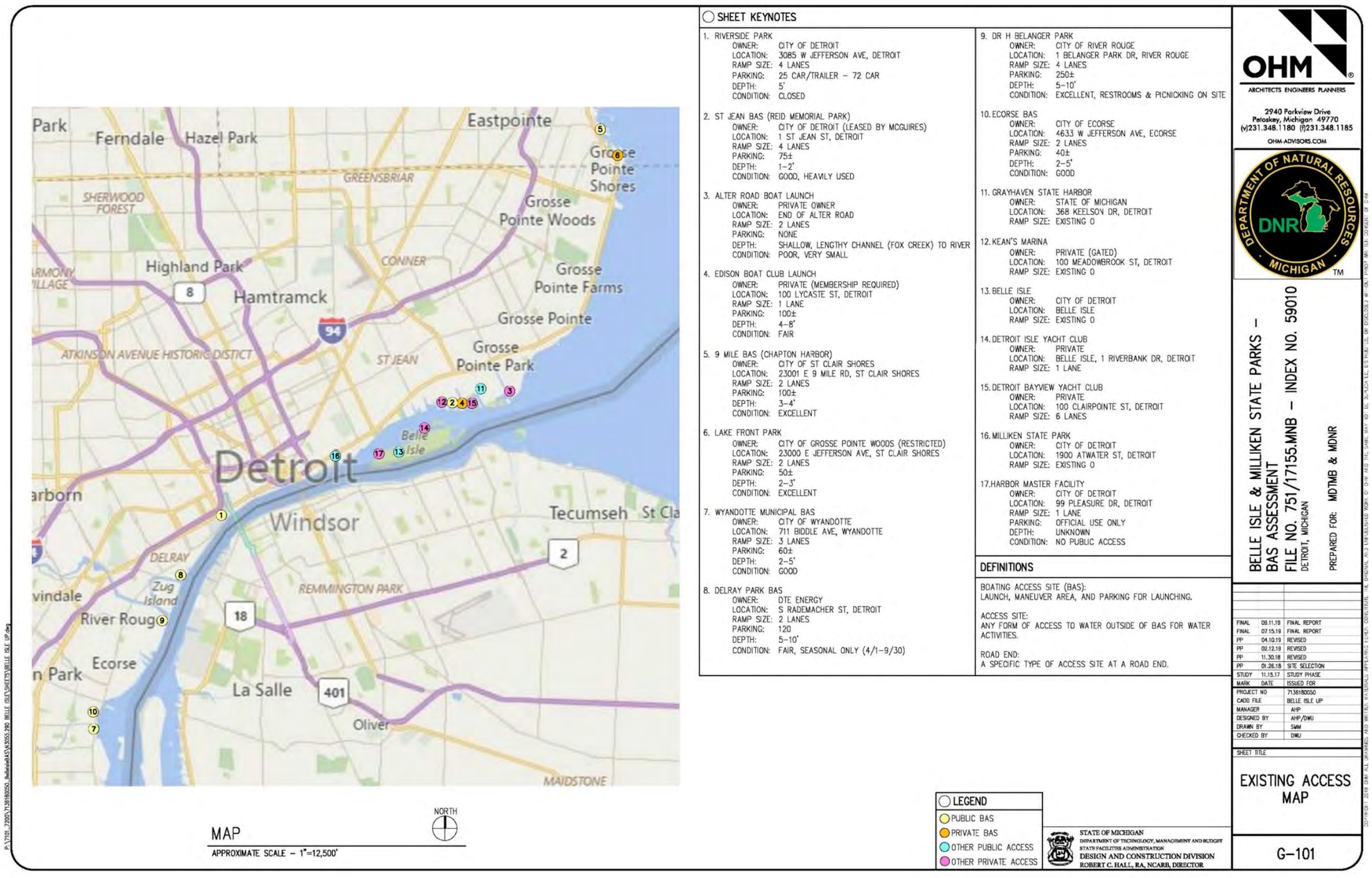
Of the 19 sites identified, only three fell within a five-mile radius of downtown Detroit at the northern end of the river. Further research into these three locations found St. Jean Boating Access Site at Reid Memorial Park to be the only publicly held facility. The remaining two sites, Edison Boat Club and Alter Road Ramp are privately owned, with restricted availability to the general public. A total of 75 vehicle/trailer parking sites are available to general public users at St. Jean.

Additional investigation into these three existing sites discovered that St. Jean Boating Access Site is in decent condition with recent site and security improvements. This site is somewhat difficult to find and is very heavily used, particularly during the early spring fishing season and during a number of early season fishing tournaments conducted on the river and Lake St. Clair. The capacity of this site is not adequate for the current use as demonstrated by traffic backups and long wait times to enter the site.

The Edison Boat Club, located just east of St. Jean Boating Access Site on the north shore of the river, has a single ramp with minimal parking and is available only to registered members of the association.

Lastly, the private road end access Alter Road Ramp, located at the mouth of the river at Lake St. Clair, is limited to two small launch lanes, no on-site parking, poor to non-existent security, and connects to the Detroit River by way of a shallow, lengthy channel (Fox Creek) that boaters find challenging to navigate.

The closest public boating access site to St. Jean (the only public BAS within the 5 miles radius) is Riverside Park, which is owned by the City of Detroit, and is approximately 6.5 miles from St. Jean. The City of Detroit is currently managing environmental remediation of the site to prepare for future construction of a BAS at the park. The City plans to complete improvements to the launch ramp and parking for 25 boat trailers and reopen the BAS in 2020. The next closest public BAS is Delray Park Boating Access Site, which is owned and operated by DTE, and it's approximately 8.5' miles from St. Jean. The nearest public BAS to the north is in the City of St. Clair Shores at 9 Mile Point Boating Access Site, which is approximately 9.5 miles from St. Jean. In summary, a total of 320 public and 100 private vehicle/trailer parking sites are available at the BAS locations listed in this review.



SHEET KEYNOTES

1. RIVERSIDE PARK
   - OWNER: CITY OF DETROIT
   - LOCATION: 3085 W JEFFERSON AVE, DETROIT
   - RAMP SIZE: 4 LANES
   - PARKING: 25 CAR/TRAILER – 72 CAR
   - DEPTH: 5'
   - CONDITION: CLOSED

2. ST JEAN BAS (REID MEMORIAL PARK)
   - OWNER: CITY OF DETROIT (LEASED BY MCGUIRES)
   - LOCATION: 1 ST JEAN ST, DETROIT
   - RAMP SIZE: 4 LANES
   - PARKING: 75±
   - DEPTH: 1–2'
   - CONDITION: GOOD, HEAVILY USED

3. ALTER ROAD BOAT LAUNCH
   - OWNER: PRIVATE OWNER
   - LOCATION: END OF ALTER ROAD
   - RAMP SIZE: 2 LANES
   - PARKING: NONE
   - DEPTH: SHALLOW, LENGTHY CHANNEL (FOX CREEK) TO RIVER
   - CONDITION: POOR, VERY SMALL

4. EDISON BOAT CLUB LAUNCH
   - OWNER: PRIVATE (MEMBERSHIP REQUIRED)
   - LOCATION: 100 LYCASTE ST, DETROIT
   - RAMP SIZE: 1 LANE
   - PARKING: 100±
   - DEPTH: 4–8'
   - CONDITION: FAIR

5. 9 MILE BAS (CHAPTON HARBOR)
   - OWNER: CITY OF ST CLAIR SHORES
   - LOCATION: 23001 E 9 MILE RD, ST CLAIR SHORES
   - RAMP SIZE: 2 LANES
   - PARKING: 100±
   - DEPTH: 3–4'
   - CONDITION: EXCELLENT

6. LAKE FRONT PARK
   - OWNER: CITY OF GROSSE POINTE WOODS (RESTRICTED)
   - LOCATION: 23000 E JEFFERSON AVE, ST CLAIR SHORES
   - RAMP SIZE: 2 LANES
   - PARKING: 50±
   - DEPTH: 2–3'
   - CONDITION: EXCELLENT

7. WYANDOTTE MUNICIPAL BAS
   - OWNER: CITY OF WYANDOTTE
   - LOCATION: 711 BIDDLE AVE, WYANDOTTE
   - RAMP SIZE: 3 LANES
   - PARKING: 60±
   - DEPTH: 2–5'
   - CONDITION: GOOD

8. DELRAY PARK BAS
   - OWNER: DTE ENERGY
   - LOCATION: S RADEMACHER ST, DETROIT
   - RAMP SIZE: 2 LANES
   - PARKING: 120
   - DEPTH: 5–10'
   - CONDITION: FAIR, SEASONAL ONLY (4/1–9/30)

9. DR H BELANGER PARK
   - OWNER: CITY OF RIVER ROUGE
   - LOCATION: 1 BELANGER PARK DR, RIVER ROUGE
   - RAMP SIZE: 4 LANES
   - PARKING: 250±
   - DEPTH: 5–10'
   - CONDITION: EXCELLENT, RESTROOMS & PICNICKING ON SITE

10. ECORSE BAS
    - OWNER: CITY OF ECORSE
    - LOCATION: 4633 W JEFFERSON AVE, ECORSE
    - RAMP SIZE: 2 LANES
    - PARKING: 40±
    - DEPTH: 2–5'
    - CONDITION: GOOD

11. GRAYHAVEN STATE HARBOR
    - OWNER: STATE OF MICHIGAN
    - LOCATION: 368 KEELSON DR, DETROIT
    - RAMP SIZE: EXISTING 0

12. KEAN'S MARINA
    - OWNER: PRIVATE (GATED)
    - LOCATION: 100 MEADOWBROOK ST, DETROIT
    - RAMP SIZE: EXISTING 0

13. BELLE ISLE
    - OWNER: CITY OF DETROIT
    - LOCATION: BELLE ISLE
    - RAMP SIZE: EXISTING 0

14. DETROIT ISLE YACHT CLUB
    - OWNER: PRIVATE
    - LOCATION: BELLE ISLE, 1 RIVERBANK DR, DETROIT
    - RAMP SIZE: 1 LANE

15. DETROIT BAYVIEW YACHT CLUB
    - OWNER: PRIVATE
    - LOCATION: 100 CLAIRPOINTE ST, DETROIT
    - RAMP SIZE: 6 LANES

16. MILLIKEN STATE PARK
    - OWNER: CITY OF DETROIT
    - LOCATION: 1900 ATWATER ST, DETROIT
    - RAMP SIZE: EXISTING 0

17. HARBOR MASTER FACILITY
    - OWNER: CITY OF DETROIT
    - LOCATION: 99 PLEASURE DR, DETROIT
    - RAMP SIZE: 1 LANE
    - PARKING: OFFICIAL USE ONLY
    - DEPTH: UNKNOWN
    - CONDITION: NO PUBLIC ACCESS

DEFINITIONS

BOATING ACCESS SITE (BAS):
LAUNCH, MANEUVER AREA, AND PARKING FOR LAUNCHING.

ACCESS SITE:
ANY FORM OF ACCESS TO WATER OUTSIDE OF BAS FOR WATER ACTIVITIES.

ROAD END:
A SPECIFIC TYPE OF ACCESS SITE AT A ROAD END.

LEGEND
- PUBLIC BAS
- PRIVATE BAS
- OTHER PUBLIC ACCESS
- OTHER PRIVATE ACCESS

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STATE FACILITIES ADMINISTRATION
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BELLE ISLE & MILLIKEN STATE PARKS –
BAS ASSESSMENT
FILE NO. 751/17155.MNB – INDEX NO. 59010
DETROIT, MICHIGAN
PREPARED FOR: MDTMB & MDNR

MARK	DATE	ISSUED FOR
FINAL	09.11.18	FINAL REPORT
FINAL	07.15.19	FINAL REPORT
PP	04.10.19	REVISED
PP	02.12.19	REVISED
PP	11.30.18	REVISED
PP	01.26.18	SITE SELECTION
STUDY	11.15.17	STUDY PHASE

PROJECT NO	7136180050
CADD FILE	BELLE ISLE UP
MANAGER	AHP
DESIGNED BY	AHP/DWU
DRAWN BY	SWM
CHECKED BY	DWU

SHEET TITLE
EXISTING ACCESS MAP

G–101

Figure 1 – Existing Detroit River Access Map

b. MARKET DEMAND ANALYSIS

Of the 83 Michigan Counties, the three counties closest to the study are Wayne, Macomb, and Oakland. These counties alone account for over 20% of all boats registered in the State. Over the last five years, the number of powered vessels under 26' and paddle craft has grown as reported in the Michigan Department of State Watercraft Registration Statistics. In the next three year, it is estimated that the amount of paddle crafts in Michigan water will exceed the number of powered vessels, creating more need for access to the river. The area specific to this study has increased its number of tournaments for common fish species including bass and walleye. Many of these tournaments have over 100 contestants, all needing access to the river at relatively the same time. This increase in recreational fishing and boating activity combined with public surveys, site inventory and analysis concludes there is a need for an additional boating access site on the north side of the Detroit River.

Appendix F provides two reports conducted by the MDNR Fisheries. These reports include information regarding current fishing trends on in the Detroit River. The reports note that walleye fishery only lasts a couple of months, but it is very intense fishery and can overwhelm the current boating access sites.

From the survey that focused on boat fishing during the walleye run in the Spring of 2000, the MDNR documented just under 68,000 angler trips, representing 344,741 angler hours. About 75% of the fishing effort was generated by the three most downstream access sites. The other sites upriver do not have nearly the effort due to a combination of smaller sized access sites and/or safety concerns. The MDNR found that just as much fishing effort takes place from the outlet of Lake St Clair down to the Ren Cen as there is in the lower river, but anglers must launch at other locations to be able to access the fishery upriver.

The MDNR noted a strong walleye year class in 2015 which contributed significantly to the 2018 season's fishery. The 2018 walleye year class is the best year class on record. This one-year class will contribute well over 100 million walleye to the population - and it could go as high as 150 million. Walleye fishing has been excellent the past few years, but as the word gets out about this record setting year class – it is going to increase interest in this fishery. These fish should start showing up in catches in 2020 and will be legal to harvest in 2021. This increase in fish populate will increase the need for access in the upper Detroit river, thus increasing the need for boating access.

Following submittal and presentation by OHM Advisors of the locations and inventories of the 16 existing access sites and review and discussion among the major stakeholders of the study's team, including the Michigan Department of Technology, Management and Budget's (MDTMB) Project Director, MDNR Field and Regional Planners, and MDNR Regional and Local Park and Recreation Managers agreed that the need for an additional boating access site in the upper Detroit River exists. None of the 19 existing ramps within the study area are owned and operated by the MDNR, or accessible with a recreation passport.

3. PUBLIC INPUT SURVEY

a. RESULTS & ANALYSIS

To better understand the demand for a new facility, the MDNR needed to learn more about the user groups accessing the Detroit River. A ten question survey was distributed to park users and boaters in two different ways. The first was conducted with face to face conversations out in the field by staff from OHM Advisors on the weekend of July 13-14 at Belle Isle Park, Delray Park Ramp BAS, St. Jean Boating Access Site, and Dr. H Belanger Park.

The second means of dissemination was online. The link to the survey was placed on the Milliken State Park and the Belle Isle Park webpages, and identified boating users pages linked through the MDNR's webpage. Emails advertising the survey went out to Belle Isle Park subscribers, boating subscribers in Wayne County, and those who made a harbor reservation within the last five years at Milliken State Park Harbor. A copy of these responses is in Appendix D. The online survey featured the ability to skip to other questions based on how a question was answered similarly to how communication took placed in the field. The survey questions were the same.

Fifty-two (52) users were interviewed personally at the sites mentioned above, and 1,356 users responded to the online survey. A majority of the respondents were both fishing and recreational boaters. A synopsis of the top and bottom responses for each question are below:

Q1 – Do you or someone in your household own a watercraft? If yes, what type(s)

Top 3:

- Fishing boat: 42.40% 575 people
- Kayak: 22.05% 299 people
- Speedboat: 17.18% 224 people

Bottom 2:

- Inflatable Boat: 6.98% 91 people
- Rowing Boat: 4.49% 61 people
- Sailboard or kiteboard: 1.32% 18 people

See Appendix D for the entire list of boat type choices for respondents to select from. These boat types were selected based on site observations and the knowledge of water events in the area. Based on personal interviews on-site, there has been an increase in fishing tournaments on the river over the years contributing to the rise of fishing boat vessels using existing BAS.

Q2 – On what waterway in southeast Michigan do you boat most often?

Top 2:

- Detroit River: 41.11% 494 people
- Lake St. Clair: 38.55% 463 people

Bottom 2:

- Huron River: 1.33% 16 people
- Belleville Lake: .41% 5 people

This question was asked to understand how often the Detroit River is accessed vs other waterways and how far the boaters travel to access the Detroit River. Most of the respondents are local and staying within the Detroit River and adjacent Lake St. Claire.

Q3 – Which launch site do you most often use to access the Detroit River?

Top 2:

- St. Jean Launch: 33.91% 117 people
- Elizabeth Park Marina: 16.23% 56 people

Bottom 4:

- Ecorse Boat Ramp: 1.86% 6 people
- Lake Front Park: .81% 4 people
- Blossom Heath Park: .80% 3 people
- Lake Front Park .80% 3 people

This question was skipped by 989 survey respondents who took the survey online, which could conclude that many of the respondents to the online survey do not use BAS on the Detroit River.

Q4 – Do you participate in organized Fishing/Boating events?

Yes: 41.70% 488 people No: 57.94% 675 people

With the personal interviews revealing an increase in fishing/boating tournaments along the Detroit River, the survey participants expressed a real need for a new or redesigned BAS that should take the growing number of these users into account.

Q5 – What size of event? (# Of participants)

Top 2:

- Less than 50: 53.26% 277 people
- 50-100: 25.96% 135 people

Bottom 2:

- 101-200: 9.61% 50 people
- 201 +: 3.84% 20 people

Q6 – What season do you most often go boating on the Detroit River?

Top 2:

- Summer: 70.45% 775 people
- Spring: 27.54 % 303 people

Bottom 2:

- Fall: 4.09% 45 people
- Winter: .04% 5 people

This question was asked to determine if additional off-seasonal access may be accommodated by existing private and public facilities such as marinas that were not in use during the early spring, fall and winter.

Based on the low numbers of off-season users, it would be advantageous to review the possibility of renting space from existing marine facilities to supplement the Detroit River during the off-season.

Q7 – On average, when do you go boating?

Top 2:

- Both: 58.30% 667 people
- Weekends: 30.50% 349 people

Bottom 2:

- Weekdays: 10.40% 119 people

The river is accessed consistently throughout the week and not just the weekends. Recreational boaters typically access the river on weekends, while the fisherman access the river throughout the week. This pattern shows a strong emphasis on fishing, and accounts for a large percentage of the activity of the survey respondents.

Q8 – Identify any limiting factors that degrade your boating experience?

Top 2:

- Launch site congestion: 49.38% 439 people
- Condition of the boat launch: 46.22% 387 people

Bottom 2:

- Signage to boating access sites: 14.51% 128 people
- Special needs access: 4.38% 39 people

See Appendix D for the entire list of factors. Congestion and condition were the top two factors that degraded the user's experience with crime being third. Criminal activity was often mentioned within the open discussion section suggesting crime determent program elements and design strategies be considered in any design of a BAS.

Q9 – Are there facility improvements or amenities that would enhance your recreational boating experience?

Top 2:

- Improved access to water: 54.98% 513 people
- Restrooms: 51.76% 83 people

Bottom 2:

- Storage: 6.00% 56 people
- Playgrounds: 5.5% 52 people

The data shows there is a strong need for improved/more access to the river. See Appendix for the entire list of amenities for design considerations.

Q10 – Where on the Detroit River would additional boating access site facilities suit your needs best?

Top 2:

- Belle Isle Park: 24.95% 275 people
- I don't know: 17.06% 188 people

Bottom 2:

- Harrison Avenue Boat Launch: .64% 7 people
- Dr. H. Belanger Park Ramp: .18% 2 people

Belle Isle Park was the site that ranked the highest (25%) from respondents. The other sites that were proposed scored lower with many responding that they did not know where on the Detroit River a new BAS should be placed. The open comment section from the online survey showed 15% of respondents strongly against a new BAS on Belle Isle Park. These respondents expressed in the open portion of the survey that a new access site on Belle Isle Park would be in conflict with the existing boating facility of the yacht club, youth programming and other recreational opportunities including adding to existing traffic congestion concerns. The open comments section from the online survey are in Appendix D.

The survey allowed for open comments and these comments are within the appendix. A majority of these comments were received through the electronic survey. The comments that were mentioned often were:

1. There was overwhelming support for the addition of a boat access site in the Detroit River (34% versus the 10% that did not think there was a need).
2. Personal safety and safety of vehicles from criminal activity was a concern for boat users and expressed that these issues be addressed with crime deterrent design solutions such as cameras in any new site that is proposed (58%).
3. More day use slips are needed for larger boats in the Detroit River (22%).

4. DETERMINATION OF NEED

Therefore, it is the study team's collective opinion that additional BAS facilities, adequately sited, maintained, and safely secured would greatly serve the northern portion of the Detroit River and its environs, as well as providing convenient and safe Detroit River access for boating and fishing enthusiasts in southeast Michigan.

There are different options in providing more access to the river including improving existing sites. To meet the need for BAS on the North Detroit River, several opportunities for future development may be coordinated to provide sufficient access. MDNR may be better able to meet the need by utilizing MDNR land as well as coordinating efforts with the City of Detroit and/or DTE. City owned BAS that may be improved include St. Jean and Riverside Park (improvements currently underway). DTE Energy owns and operates the Delray Park Boating Access Site. MDNR managed sites to consider include Belle Isle Park or Milliken State Park and Harbor or Grayhaven State Harbor Marina.

As the MDNR considers site options and design program elements at these sites, the concerns and recommendations provided by users in the public survey will be considered. The primary public concerns are additional facility space and site security. These criteria will be considered to provide the users with potential options for a safe site to launch their boats and park their vehicles.

5. SITE DETERMINATION

a. LOCATIONS

Once it was determined that additional boating access opportunities in the upper Detroit River are necessary, the second phase of the study was undertaken. The goal of assessing the most feasible site for a boating access site at one of three MDNR locations. MDNR sites to consider were two at Belle Isle Park and one at Milliken State Park and Harbor. Consideration of improvements to the Grayhaven State Harbor Marina, adjacent to the City of Detroit's Maheras-Gentry Park, St. Jean BAS and Riverside Park was also included into the feasibility review. Grayhaven State Harbor Marina, originally studied in 2010 by Hubble, Roth and Clark Consulting Engineers (HRC) for a potential BAS, was reviewed and evaluated as part of this exercise. St. Jean BAS and Riverside Park are owned by the City of Detroit.

Site #1 – Existing Storage Lot at Pleasure Drive, Belle Isle Park:
The first potential location managed by the MDNR for review is located in the northwestern portion of Belle Isle Park, in an existing open storage lot accessed by Pleasure Drive, which connects directly to Sunset Drive, the primary vehicular route in this portion of the park. This site is also in close proximity to a City of Detroit Water Department facility, City of Detroit Harbor Master Boathouse/Police Substation, two active radio towers, and the MDNR's new Belle Isle Park headquarters.

Figure 2 Pleasure Drive Lot

Figure 3 Lakeside Drive

Site #2 – Existing Parking Lot and Open Space at Lakeside Drive, Belle Isle Park:
The second potential location managed by the MDNR is located at the northeastern end of Belle Isle Park, in an open lawn area on the north side of Lakeside Drive. The site consists of moderately rolling topography, an existing paved driveway and parking area, Detroit River access by way of a protected inlet, free-standing steel sculpture, and adjacent picnic pavilions, restroom building with parking, and lengthy fishing pier along the river.

Site #3 – Milliken State Park, Atwater Street:
The third potential location managed by the MDNR is located at Milliken State Park and Harbor on the mainland, between Atwater Street and the Detroit River. Although portions of this property are highly developed with an active MDNR Marina and Contact Station, City of Detroit Riverwalk pathway, and adjacent City of Detroit Aretha Franklin Park (Chene Amphitheatre), additional undeveloped areas at this location are currently listed on the Michigan Department of Environmental Quality (MDEQ) Environmental Site Register, strictly limiting potential land use.

Figure 4 Milliken State Park

A site visit was conducted in December 2017 to investigate and determine if any additional properties at Belle Isle Park or Milliken State Park and Harbor would qualify as potential MDNR boating access sites. It was determined that primarily due to existing land development and user activities, observed traffic and circulation patterns, and general spatial requirements necessary for convenient vehicle/trailer maneuverability and parking, no additional sites could be identified and presented for potential boating access site development at either of the two State Parks.

Figure 5 Port Drive

Site #4 – Grayhaven State Harbor, Port Drive:
A fourth potential location is located on the mainland at the terminus of Algonquin Park Drive, northeast of Belle Isle Park between Maheras-Gentry Park and Shorepointe Village residential community. This site is currently a state harbor facility only, leased to a private operator by the State of Michigan. It is not currently a boating access site. A previous feasibility study was conducted in 2010 prior to recent improvements and current concession agreement. No physical investigation or reconnaissance was conducted at Grayhaven State Harbor Marina.

Site #5- Riverside Park:
This site is owned and operated by the City of Detroit and is currently closed for remediation and construction. A partial remediation was completed in 2019 and a portion of the park is due to open June 2019. The City planned improvements to the park, include a new BAS with 25 boat trailer parking spaces (approx. 15' x 50'), 4 motorized boat ramps, potential for rental motorized boats, and kayaks/non-motorized boat launches. Future improvements also include connecting the pedestrian access along the riverfront to the Riverside Park West development. When completed, Riverside Park will be a 23-acre park.

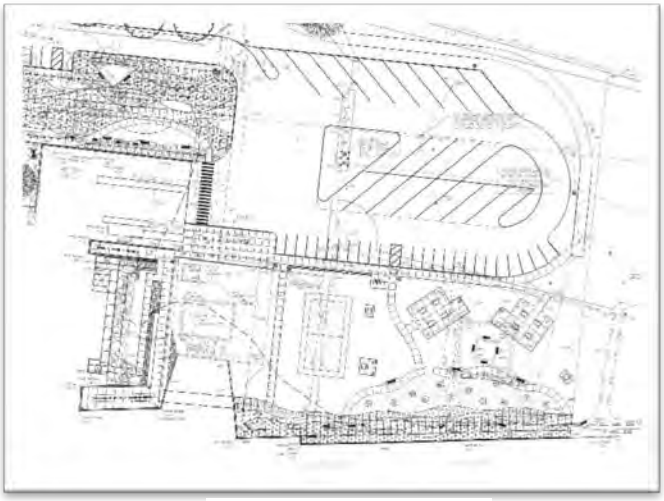


Figure 6 Riverside Concept

Figure 7 St. Jean

Site #6- St. Jean Boating Access Site:
This existing boating access site is owned by the City of Detroit and leased to a private operator. There are currently 6 launch ramps and parking for approximately 75 vehicles with trailers. The City has recently upgraded this site and installed new slip piers, restrooms, site lighting and resurfacing of parking area. Additional land existing with the opportunity for expansion at this site.

Figure 8 Delray Park Boating Access Site

Site #7 – Delray Park Boating Access Site:
This existing BAS is owned and operated by DTE Energy. There is currently 1 launch ramp and approximately 150 parking gravel parking spaces at the site. DTE has no plans for improvements to the site. The site is heavily used mostly by local residents. Portable restrooms are present during open months. Site is closed, locked and gated from approximately November to March of each year.

b. CRITERIA & ANALYSIS

During stakeholder review of goals for this study and discussion of initial observations, concerns were shared relating to future site operation and management issues, security and safety requirements, impacts to existing traffic patterns and existing park uses in the vicinity of any new access site, wherever it may be located. These issues along with existing park facilities and infrastructure, benefits and consequences (if any) to other park users, water depth and river currents at the shoreline, site topography, and potential cost of construction were criteria to determine the feasibility of each potential site.

MDNR Law Enforcement Division (LED) and MDNR – PRD personnel were consulted regarding potential impacts of a BAS on Belle Isle Park to public safety and daily operations. LED in cooperation with MDNR – PRD, are responsible for public safety on Belle Isle Park and understand the boating and fishing communities' desire to have a safe and secure boating access site location. LED's primary concern with a boating access site located on Belle Isle Park is in regard to public safety with additional vehicles and trailers causing additional traffic congestion. Additional traffic congestion would put more pressure on a park that already requires regular closure during popular visitor times when the number of vehicles reaches maximum capacity. Vehicular congestion has become a primary public safety concern as the number of Belle Isle Park visitors continues to grow each year. LED concerns have been included in the pros and cons lists below for the site alternatives. LED does not support a BAS on Belle Isle Park. See Appendix G for LED email regarding the potential for a BAS on Belle Isle Park.

The following is a summary of observations and analysis in favor (pro) and in reservation (con) of potential development of a MDNR Boating Access Site at each of the four proposed locations:

<u>Site #1 – Existing Storage Lot at Pleasure Drive, Belle Isle Park</u>

In Favor:

- Vehicular access from and to MacArthur Bridge (park entrance)
- Existing concrete slab (Grand Prix paddock and pits area) could provide ample parking
- Potential site would be adjacent to future MDNR Contact Station
- Potential site would be near existing Harbor Master Boathouse/Detroit Police substation
- Good river depth and bank slope for launch ramp
- Offers most controlled and secure location on the island
- Existing parking area
- Accessible with Recreational Passport

In Reservation:

- Grand Prix operations causes major conflict with year-round use
- River current is very strong in this location.
- Poor pedestrian access from proposed paddock parking area, would require pedestrian overpass
- Paddock is programmed for events every weekend in the summer, so not a viable parking option
- Potential site would be very compact, impacting vehicular circulation and limiting growth or expansion of ramp area
- Site would be located in busiest, most congested area of park
- Increased staffing needs.

- Additional traffic will increase vehicular congestion within the park and traffic back-ups along Jefferson Ave.
- Operational hours of the park not adequately accommodating the fishing community

Site #2 – Existing Parking Lot and Open Space at Lakeside Drive, Belle Isle Park

In Favor:

- Existing driveway into site from Lakeshore Drive
- Ample open space for parking and maneuvering which can expand in future
- Locates use are away from highly congested park entrance.
- Protected inlet, no river current concerns
- Good water depth and bank slope for launch ramp
- Offers easy access to south end of Lake St. Clair
- Existing restroom building nearby
- Accessible with Recreational Passport

In Reservation:

- Distance from MacArthur Bridge and park entrance (2.5 miles)
- Proximity to Detroit Yacht Club slips (based on public input)
- Reduction in green space by adding another parking lot.
- Improvements to Central Avenue (from Sylvia Creek) would be required
- Improvements at Central Avenue/Inselruhe Avenue intersection may be required
- May require relocation of picnic shelters and sculptures
- Remote location/reduced security presence
- Would require earth grade change for parking area (soil conditions unknown)
- Youth programming conflicts
- Increased staffing needs.
- Conflicts with proposed Iron Belle Trail around Belle Isle Park
- Increased traffic congestion throughout park, some on narrow roads.
- Operational hours of the park not adequately accommodating the fishing community

Site #3 – Milliken State Park, Atwater Street

In Favor:

- Existing State Park structure/facilities/marina
- Moderately secure location
- Proximity to MDNR offices/OAC

In Reservation:

- Vehicle/trailer accessibility would be difficult in Central Downtown district
- Riverwalk bisects property
- Future planning for this location precludes parking surfaces between Atwater and the River. Alternate locations for parking are not available adjacent to site
- Exposure to strong river currents in this location

Site #4 – Grayhaven State Harbor Marina, Port Street:
See Appendix for Grayhaven State Harbor Marina Feasibility Study, September 2010 by Hubble, Roth and Clark for Boating Access Site report, cost estimate and recommendations concerning this location).
In Favor:

- Existing operational State harbor facility
- Current State of Michigan concession agreement with private operator
- Direct water access to upper Detroit River and Lake St. Clair
- Available area for new launch ramps, parking and vehicle circulation
- Recent renovations and upgrades to restroom building (2012)
- Site security (fenced, monitored area)

In Reservation:

- Poor vehicular access at current time, must travel through residential areas and Maheras-Gentry Park to enter site
- Construction of new access road (Port Drive extension) would be required to mitigate vehicular access issues

Site #5 – Riverside Park:
In Favor:

- Direct access to Detroit River
- When completed, will be part of multi-use park setting.

In Reservation:

- BAS has not yet been improved and is not currently available to public
- Vehicle access through Detroit is difficult
- Small site with only 25 proposed parking spaces
- Potential exposure to strong river currents at this location
- Site security concerns

Site #6 – St. Jean BAS:
In Favor:

- Existing operational BAS on Detroit River
- Space to expand site
- Current City of Detroit PRD property, concession agreement with private operator
- Access to Upper Detroit River and Lake St. Clair
- Recent upgrades to ramp piers, parking lot and site lighting
- Site security (fenced, monitored area)

In Reservation:

- Poor vehicular access, must follow lengthy route through residential areas
- Site is compact and commonly congested

Site #7 – Delray Park Boating Access Site:

In Favor:

- Direct access to Detroit River
- 150 parking spaces available
- Easily accessible from main roads
- Ramp is in protected channel

In Reservation:

- No room for expansion of parking or ramp
- Site security concerns
- Age of facility (20+ years)

After determination of the various site criteria for evaluation, a comparison of the identified locations to one another was conducted. Subjective, professional judgement was applied to the alternatives, defining a set of attributes for review and comparison. The below matrix was created to provide a visual analysis of the above listed pros and cons for each site. It takes into consideration all the information gathered from the MDTMB, MDNR, public survey participants and LED personnel.

Detroit River Boating Access Site Assessment

Detroit River Boating Access Study
Site Analysis / Development Matrix

	Site 1 - Existing storage lot, Pleasure Drive	Site 2 - Existing open space, Lakeside Drive	Site 3 - Milliken State Park, Atwater Street	Site 4 - Grayhaven State Marina, Port Street	Site 5 - Riverside Park, W. Grand Boulevard	Site 6 - St. Jean Launch, St. Jean Street	Site 7 - Delray Park BAS South Rademacher Street
Site security and public safety concerns							
Proximity to existing MDNR facilities and support mechanisms							
Easy and direct vehicular access to proposed boating access site							
Available area for 100 - 125 vehicle/trailer parking spaces							
Available area for convenient vehicle/trailer manuvering							
Favorable water depth and currents at proposed launch site							
Requires improvements to neighboring roads and infrastructure							
May require limits to size of boats being launched							
Available space for future development or expansion							
Safe routes for pedestrian circulation							
Conflicts with existing seasonal events/activities							
Conflicts with year-round use							
Potential cost of construction							
Potential cost of maintenance and operations							
Conflicts with existing traffic patterns							
Negatively impacts public safety							

Ratings Key :

- Favorable, minimal constraints
- Marginal, some constraints
- Unfavorable, major constraints

The above matrix is intended to show the importance of the differences between the sites. If each site is green for a given criteria, then that criteria becomes less important because each of the sites is similar in this regard. If there are some red, yellow and green boxes for criteria that difference is important. That shows an importance of that advantage to the green site. Do not simply add up the number of greens, etc. to determine the "preferred" site. You will be losing the importance of the advantages.

After a review of the criteria listed in the matrix above of the 6 potential, site locations we recommend the following:

- Eliminate Site #1 (Pleasure Drive on Belle Isle Park), Site #2 (Lakeside Drive), and Site #3 (Milliken State Park) as feasible options.
- All the other sites analyzed are valid and a worthy to be considered viable options for providing a BAS.

- Consider approaching the City of Detroit regarding the redevelopment of Site #6 (St. Jean).
- The development of Site #5 (Riverside) should only be considered as a supporting BAS because it alone, is too small, and no room for expansion to meet all the needs of the boating public.

We eliminated Site #1, Site #2, and Site #3 because of the large number of criteria that was unfavorable at each site as noted in the above section. We don't believe all these issues can be overcome to make either of these sites feasible options to meet the needs.

The development of Site #2 (Lakeside Drive) would not be compatible with existing park capacity, programming and use. Due to already congested traffic on the island and the growing park attendance, day-time recreational boaters would pose public safety concerns that the DNR Law Enforcement and DNR-PRD park management find a BAS development to be incompatible within current park operations.

Site #4 (Grayhaven State Harbor) concept design currently includes 6 launching ramps and 70 parking spaces. There appears to be enough room to expand the parking to meet the need for 125 spacing at this site. This would need to be confirmed with a site survey. In conversations with the current Grayhaven State Harbor operator, the largest issue to overcome at this site is access to it. At present, access into this site by vehicles with trailer would be impossible due to the connecting driveway configuration from Maheras-Gentry Park in the Grayhaven State Harbor site. The neighboring roads would need improvement and a route directly to the BAS would need to be developed. Coordination with the city to develop a Port Drive connection for access to the new boating access site would be required so as to not route boat trailer traffic through the other park areas.

Site #7 (Delray Park Boating Access Site) is privately owned by DTE Energy. It is generally used by the local public and at its heaviest use times fills about half its parking capacity. If desired by the MDNR and DTE, they could work together to create more public awareness of the BAS.

A possible alternative to the expense of planning and constructing a new boating access site in the study area would be to provide an equivalent amount of funding or grant options to local communities or agencies that currently operate public access sites along the river corridor. In this way, the existing BAS at Site #6 (St. Jean) may be upgraded to expand parking and make general improvements to the existing facility. The route to this site should be better defined by signage or some other means as well if this site was chosen to be improved.

The potential exists for current public and/or private marinas and harbor facilities in the study area such as Milliken State Park Harbor, Erma Henderson Marina, and Grayhaven State Harbor Marina to offer temporary, short term docking opportunities to boaters and fishermen in the busy spring fishing season, helping to reduce the heavy demand on current boating access sites, and to provide the convenience of not needing to launch and retrieve their boats on a daily basis.

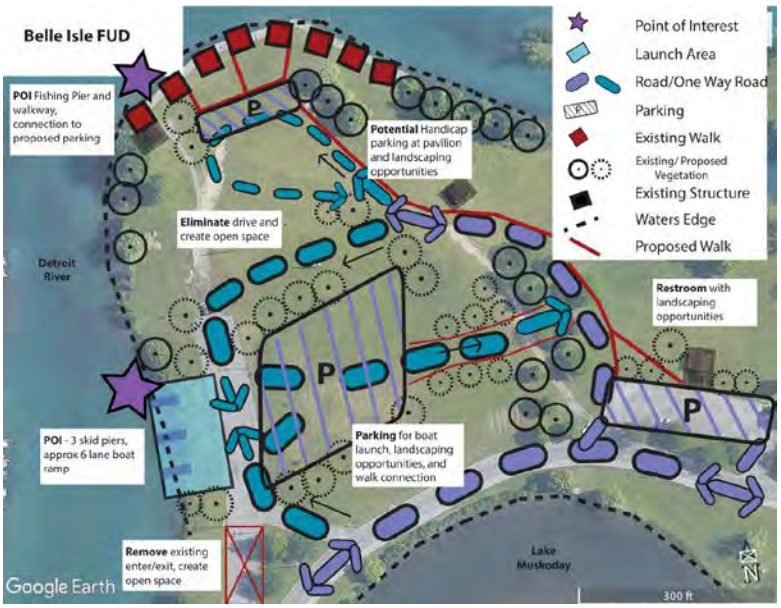
6. FUNCTIONAL USE DIAGRAMS (FUD)

Functional Use Diagram (FUD) is a graphical representation of a site and how program design elements flow or work together to meet the intended function of the site. Two FUD's were prepared for this report, one for the Belle Isla site off of Lakeside Drive and one for the Grayhaven State Harbor Marina and are located within the Appendix. The same program design elements and how those program elements functioned together were assumed and these included:

- Boat launching ramps;
- Access to the ramps (vehicular & pedestrian)
- Parking;
- Vegetation;
- Points of interest;
- Existing program elements relevant to recreation and boating access;

The FUD for the Belle Isle Lakeside Drive site provides the below mentioned program elements:

- Vehicular circulation pattern into the launch site and through the adjoining parking area is one-way, with a circular route from launch to parking to boat retrieval.
- Site design allows four concrete launch ramp lanes with two removable skid piers and tie-down area. The site may be expanded for more if future usage warrants including a tie-down area.
- Proposed launch ramps are located in the widest area of a protected inlet, at a distance of approximately 165 feet from the nearest Belle Isle Park Yacht Club slips to the west.
- The proposed site can provide ample maneuvering area at the launch zone, allowing for ample clear space for turning and backing of vehicles and trailers, and paved parking areas for vehicles and trailers.
- A dedicated entrance lane allows for multiple vehicle stacking, safely away from Lakeside Drive traffic.
- A Contact Station/control point is located along the left side of the new entrance drive.
- Proposed sidewalks provide barrier free access from parking area to existing restroom building.
- The design emphasizes saving and maintaining existing trees and vegetation.
- The site has recreational element already existing and this FUD depicts the connection between the existing and proposed with the addition of eight paved parking spaces at the existing picnic pavilion and 22 parking spaces near the fishing pier as part of a one-way circular access drive. Adjoining sidewalks would provide barrier-free access to these associated activity areas. There is also ample room for future picnic pavilions and smaller remote restroom facilities if desired.



A FUD for the Grayhaven State Harbor was also conducted. This FUD was based on a study and concept provided to the MDNR in 2010 by Hubble, Roth and Clark Consulting Engineers (HRC). This site currently serves as a working marina, it is owned by the MDNR and is contracted out to a vendor. The FUD from the Grayhaven State Harbor site provides show the below mentioned program elements:

- Using the existing vehicular circulation pattern and tie-down area into the launch site.
- Site design allows for three skid piers for a six-lane boat launch.
- One existing pier has been removed to allow access into the boating channel from the proposed launching area.
- Minimal impact to site and existing features.

7. CONCLUSIONS AND RECOMMENDATIONS

Public access to the north end of the Detroit River is limited for public seeking out Detroit's most significant natural resource for water-based recreation. Public feedback collected in this study clearly provides evidence that BAS access to the northern portion of the Detroit River is greatly underserved and additional access is desired by the public for this area. For boaters with recreation passports, there is not a DNR operated BAS within the study area. Information gathered to better understand the accessibility for boating recreation has highlighted the draw for exceptional fishing and DNR Fishery reports documenting that excellent fishing opportunities will continue to improve. With increased fishery resources, the DNR Fisheries division has forecast increased draw for recreational fishing in the study area. Information gathered from DNR Fisheries, boat license sales and the public surveys, clearly demonstrate that high population in southeast Michigan translates to a popular area with a statewide, as well as out of state draw for boating. The report findings predict that the boater attendance to the Detroit River will continue to grow.

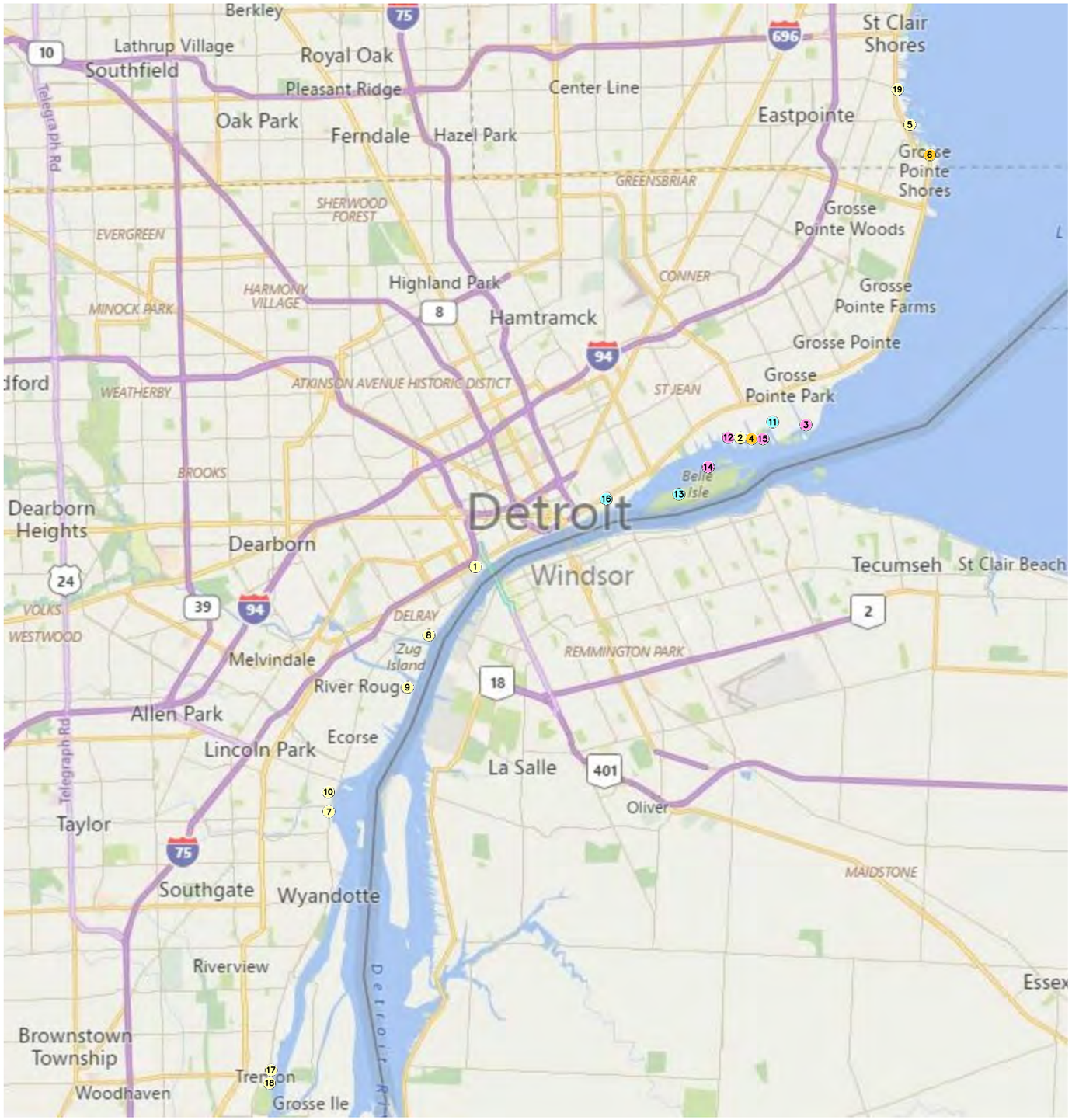
Because the river access is significantly underdeveloped compared to the current and forecasted need, a phased approach to increasing access over time through multiple projects and a directed through a cooperative inter-agency approach is recommended. Due to the limited number of feasible sites DNR owns for development, it is recommended that DNR coordinate with the City of Detroit to identify sites suitable for immediate, near-term and long-term improvements.

Immediate improvements for river access could be implemented by adopting new operational policies for existing infrastructure within the study area. Among DNR and City of Detroit managed marinas, the potential exists for current public and/or private marinas and harbor facilities in the study area such as Milliken State Park Harbor, Erma Henderson Marina, and Grayhaven State Harbor Marina to offer temporary, short term docking opportunities to boaters and fishermen in the busy spring fishing season. Using existing infrastructure before the recreational boating season begins would help to reduce the heavy demand on boating access sites in early spring, and to provide the convenience of not needing to launch their boats on a daily basis. Immediate improvements could be implemented within the next 2 years.

Efforts to increase capacity for boaters throughout the boating season would require infrastructure improvements to existing BAS. In the north end of the Detroit river, the recommendation would be to identify and further develop BAS suitable for increasing capacity and invest in expansion of existing sites in the near-term. These improvements are recommended to be completed in the next 2-5 years. Near-term improvements would first address limited access by building on existing infrastructure before investing in new facilities. City owned sites, such as St. Jean, along the Detroit River has been identified as a site with potential for improvement to address the public's primary concerns, parking availability and security. As well, privately owned facilities, such as DTE's Delray could be further assessed for development to contribute towards a comprehensive approach for increasing access to the upper Detroit River.

Investing in new BAS facilities would require significant investment and would be recommended as part of a long-term strategy for improving BAS. Grayhaven State Harbor has been previously identified by DNR as a potential site for BAS development. This report has determined that Grayhaven would be the only feasible DNR owned facility within the scope of this study. In reviewing the opportunities and constraints of this site, access though Majeras-Gentry park was identified as a point of user-conflict that would need to be addressed in the development of this site. Coordination with the city to develop a Port Drive connection for access to the new boating access site would be required to not route boat trailer traffic through the other park areas. Addressing this issue was reviewed favorably with city personal to reduce traffic through the park. Redeveloping Grayhaven, similar to recommended near-term solutions will also require a coordinated effort between the DNR and the City of Detroit to work together. It is recommended that a new BAS facility at Grayhaven a priority for DNR waterways capital improvements in southeast Michigan.

APPENDIX A – OVERVIEW MAP



OVERVIEW MAP

NOT TO SCALE

NORTH

SHEET KEYNOTES

1. RIVERSIDE PARK (CLOSED)
   a. BAS (PROPOSED)
   b. PUBLIC
2. ST JEAN BAS (REID MEMORIAL PARK)
   a. BAS
   b. PUBLIC (CONCESSIONAIRE)
3. ALTER ROAD BOAT LAUNCH
   a. ROAD END
   b. PRIVATE
4. EDISON BOAT CLUB LAUNCH
   a. ACCESS SITE
   b. PRIVATE
5. 9 MILE BOAT BAS (CHAPTON HARBOR)
   a. BAS
   b. PUBLIC
6. LAKE FRONT PARK
   a. BAS
   b. PUBLIC (RESIDENTS OF GROSSE POINTE WOODS ONLY)
7. WYANDOTTE MUNICIPAL BOAT BAS
   a. BAS
   b. PUBLIC
8. DELRAY PARK BAS
   a. BAS
   b. PUBLIC
9. DR H BELANGER PARK
   a. BAS
   b. PUBLIC
10. ECORSE BAS
    a. BAS
    b. PUBLIC
11. GRAYHAVEN
    a. OTHER
    b. PUBLIC
12. KEAN'S MARINA
    a. OTHER
    b. PRIVATE
13. BELLE ISLE
    a. OTHER
    b. PUBLIC
14. DETROIT ISLE YACHT CLUB
    a. OTHER
    b. PRIVATE
15. DETROIT BAYVIEW YACHT CLUB
    a. OTHER
    b. PRIVATE
16. MILLIKEN
    a. OTHER
    b. PUBLIC
17. HARRISON AVENUE BOAT LAUNCH (ROTARY PARK)
    a. BAS
    b. PUBLIC
18. ELIZABETH PARK MARINA
    a. BAS
    b. PUBLIC
19. BLOSSOM HEATH PARK
    a. BAS
    b. PUBLIC

DEFINITIONS

BOATING ACCESS SITE (BAS):
LAUNCH, MANEUVER AREA, AND PARKING FOR LAUNCHING.

ACCESS SITE:
ANY FORM OF ACCESS TO WATER OUTSIDE OF BAS FOR WATER ACTIVITIES.

ROAD END:
A SPECIFIC TYPE OF ACCESS SITE AT A ROAD END.

LEGEND
- PUBLIC BAS
- PRIVATE BAS
- OTHER PUBLIC ACCESS
- OTHER PRIVATE ACCESS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ROBERT C. HALL, RA, NCARB, DIRECTOR

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DEPARTMENT OF NATURAL RESOURCES · DNR · MICHIGAN TM

BELLE ISLE & MILLIKEN STATE PARKS – BAS ASSESSMENT
FILE NO. 751/17155.MNB – INDEX NO. 59010
DETROIT, MICHIGAN

PREPARED FOR: MDTMB & MDNR

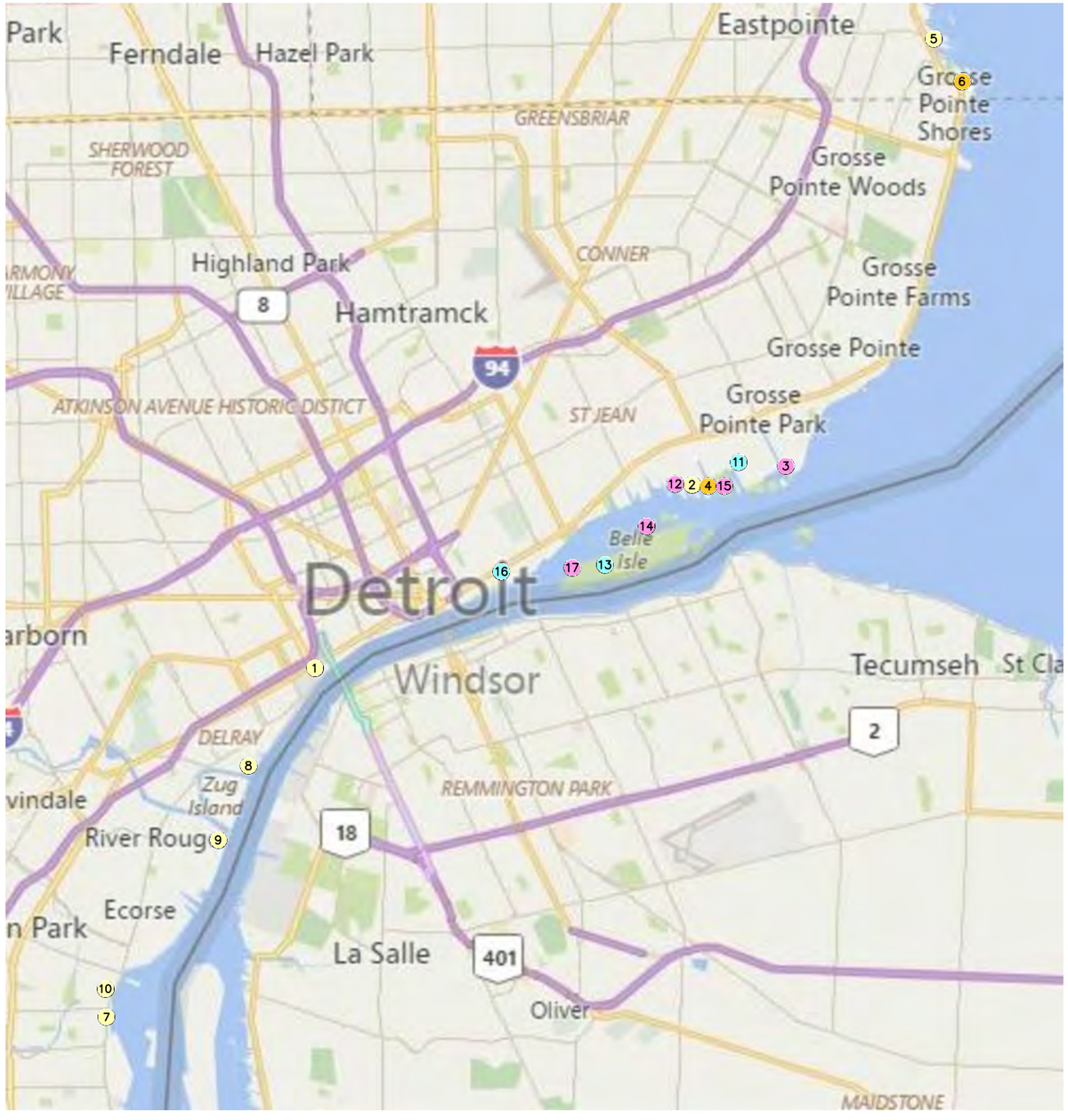
PP	04.10.19	REVISED
PP	02.12.19	REVISED
PP	11.30.18	REVISED
PP	01.26.18	SITE SELECTION
STUDY	11.15.17	STUDY PHASE
MARK	DATE	ISSUED FOR
PROJECT NO		7136180050
CADD FILE		BELLE ISLE UP
MANAGER		AHP
DESIGNED BY		AHP/DWU
DRAWN BY		SMM
CHECKED BY		DWU

SHEET TITLE

OVERVIEW MAP

G-100

APPENDIX B – EXISTING BAS MAP & DESIGN DETAILS



MAP

APPROXIMATE SCALE – 1"=12,500'

NORTH

SHEET KEYNOTES

1. RIVERSIDE PARK
   - OWNER: CITY OF DETROIT
   - LOCATION: 3085 W JEFFERSON AVE, DETROIT
   - RAMP SIZE: 4 LANES
   - PARKING: 25 CAR/TRAILER – 72 CAR
   - DEPTH: 5'
   - CONDITION: CLOSED

2. ST JEAN BAS (REID MEMORIAL PARK)
   - OWNER: CITY OF DETROIT (LEASED BY MCGUIRES)
   - LOCATION: 1 ST JEAN ST, DETROIT
   - RAMP SIZE: 4 LANES
   - PARKING: 75±
   - DEPTH: 1–2'
   - CONDITION: GOOD, HEAVILY USED

3. ALTER ROAD BOAT LAUNCH
   - OWNER: PRIVATE OWNER
   - LOCATION: END OF ALTER ROAD
   - RAMP SIZE: 2 LANES
   - PARKING: NONE
   - DEPTH: SHALLOW, LENGTHY CHANNEL (FOX CREEK) TO RIVER
   - CONDITION: POOR, VERY SMALL

4. EDISON BOAT CLUB LAUNCH
   - OWNER: PRIVATE (MEMBERSHIP REQUIRED)
   - LOCATION: 100 LYCASTE ST, DETROIT
   - RAMP SIZE: 1 LANE
   - PARKING: 100±
   - DEPTH: 4–8'
   - CONDITION: FAIR

5. 9 MILE BAS (CHAPTON HARBOR)
   - OWNER: CITY OF ST CLAIR SHORES
   - LOCATION: 23001 E 9 MILE RD, ST CLAIR SHORES
   - RAMP SIZE: 2 LANES
   - PARKING: 100±
   - DEPTH: 3–4'
   - CONDITION: EXCELLENT

6. LAKE FRONT PARK
   - OWNER: CITY OF GROSSE POINTE WOODS (RESTRICTED)
   - LOCATION: 23000 E JEFFERSON AVE, ST CLAIR SHORES
   - RAMP SIZE: 2 LANES
   - PARKING: 50±
   - DEPTH: 2–3'
   - CONDITION: EXCELLENT

7. WYANDOTTE MUNICIPAL BAS
   - OWNER: CITY OF WYANDOTTE
   - LOCATION: 711 BIDDLE AVE, WYANDOTTE
   - RAMP SIZE: 3 LANES
   - PARKING: 60±
   - DEPTH: 2–5'
   - CONDITION: GOOD

8. DELRAY PARK BAS
   - OWNER: DTE ENERGY
   - LOCATION: S RADEMACHER ST, DETROIT
   - RAMP SIZE: 2 LANES
   - PARKING: 120
   - DEPTH: 5–10'
   - CONDITION: FAIR, SEASONAL ONLY (4/1–9/30)

9. DR H BELANGER PARK
   - OWNER: CITY OF RIVER ROUGE
   - LOCATION: 1 BELANGER PARK DR, RIVER ROUGE
   - RAMP SIZE: 4 LANES
   - PARKING: 250±
   - DEPTH: 5–10'
   - CONDITION: EXCELLENT, RESTROOMS & PICNICKING ON SITE

10. ECORSE BAS
    - OWNER: CITY OF ECORSE
    - LOCATION: 4633 W JEFFERSON AVE, ECORSE
    - RAMP SIZE: 2 LANES
    - PARKING: 40±
    - DEPTH: 2–5'
    - CONDITION: GOOD

11. GRAYHAVEN STATE HARBOR
    - OWNER: STATE OF MICHIGAN
    - LOCATION: 368 KEELSON DR, DETROIT
    - RAMP SIZE: EXISTING 0

12. KEAN'S MARINA
    - OWNER: PRIVATE (GATED)
    - LOCATION: 100 MEADOWBROOK ST, DETROIT
    - RAMP SIZE: EXISTING 0

13. BELLE ISLE
    - OWNER: CITY OF DETROIT
    - LOCATION: BELLE ISLE
    - RAMP SIZE: EXISTING 0

14. DETROIT ISLE YACHT CLUB
    - OWNER: PRIVATE
    - LOCATION: BELLE ISLE, 1 RIVERBANK DR, DETROIT
    - RAMP SIZE: 1 LANE

15. DETROIT BAYVIEW YACHT CLUB
    - OWNER: PRIVATE
    - LOCATION: 100 CLAIRPOINTE ST, DETROIT
    - RAMP SIZE: 6 LANES

16. MILLIKEN STATE PARK
    - OWNER: CITY OF DETROIT
    - LOCATION: 1900 ATWATER ST, DETROIT
    - RAMP SIZE: EXISTING 0

17. HARBOR MASTER FACILITY
    - OWNER: CITY OF DETROIT
    - LOCATION: 99 PLEASURE DR, DETROIT
    - RAMP SIZE: 1 LANE
    - PARKING: OFFICIAL USE ONLY
    - DEPTH: UNKNOWN
    - CONDITION: NO PUBLIC ACCESS

DEFINITIONS

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ANY FORM OF ACCESS TO WATER OUTSIDE OF BAS FOR WATER ACTIVITIES.

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A SPECIFIC TYPE OF ACCESS SITE AT A ROAD END.

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- PUBLIC BAS
- PRIVATE BAS
- OTHER PUBLIC ACCESS
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BELLE ISLE & MILLIKEN STATE PARKS –
BAS ASSESSMENT
FILE NO. 751/17155.MNB – INDEX NO. 59010
DETROIT, MICHIGAN

PREPARED FOR: MDTMB & MDNR

FINAL	09.11.19	FINAL REPORT
FINAL	07.15.19	FINAL REPORT
PP	04.10.19	REVISED
PP	02.12.19	REVISED
PP	11.30.18	REVISED
PP	01.26.18	SITE SELECTION
STUDY	11.15.17	STUDY PHASE
MARK	DATE	ISSUED FOR

PROJECT NO	7136180050
CADD FILE	BELLE ISLE UP
MANAGER	AHP
DESIGNED BY	AHP/DWU
DRAWN BY	SMM
CHECKED BY	DWU

SHEET TITLE

EXISTING ACCESS MAP

G–101

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APPENDIX C – LAW ENFORCEMENT COMMENTS

Amanda Porath

From: Molnar, Joe (DNR) <MOLNARJ@michigan.gov>
Sent: Thursday, November 8, 2018 11:31 AM
To: Treadwell, Amanda (DNR)
Subject: RE: BAS Feasibility Study on Belle Isle

Amanda,

In 2017 you and I had talked with the firm in the initial stages of the feasibility study and I expressed my concerns about having a boating access site located on Belle Isle. As the Lieutenant who over sees operations on Belle Isle I do not support having a boating access site in the Park. I understand the fishing communities desire to have a boat access site on Belle Isle in that they would feel safe that their vehicles would not be vandalized in that Conservation Officers and Michigan State Troopers patrol the park. There are launch sites near Belle Isle which are not routinely patrolled by law enforcement.

I do not know what Conservation Officer the firm talked with in that I have also discussed the issue with my sergeants and they share my concerns also. The firm may have talked with a Conservation Officer patrolling the island who did not grasp the complete ramifications of having a launch site on Belle Isle and only looked at the benefit of having a launch site but did not look at our inability to meet the high volume of use it would see and the safety issues it would create.

The primary reason I do not support the access site is the impact the vehicles and trailers will have on traffic congestion which directly relates to the safety of the public. In 2018 Belle Isle Park had to be shut down to vehicle traffic on three occasion due to traffic backups and overcrowding. Every year the number of visitors to the park is increasing and there is insufficient parking for vehicles and there are no parking spots in the park for vehicles with trailers.

The current location for the site is near the Yacht Club with an estimated 90-100 parking spots for vehicles and trailers. I do not believe that this amount of parking will be enough for the demand during the fishing and boating seasons which would span April through August. In a conversation with Fisheries Supervisor Jim Frances he told me about a fishing trip he took in 2016 at a nearby State launch site during the prime walleye season. He stated he arrived at 5AM and was the 75th vehicle in line waiting to launch and had to wait two hours before enough boats came back to the launch to free up parking spaces. Belle Isle's road system cannot safely support a similar situation, if you estimate a truck and trailer taking up 40-50 feet and allowing for space between vehicles, 75 vehicles could be backed up to the Coast Guard Station. I believe a similar situation would occur on Belle Isle, and since there are not any other parking spots available for trailers people will resort to launching their boats and illegally parking in other lots or on the grass. Belle Isle has the only beach in Detroit and a launch site will be a large draw for the recreational boating community as well as the fishing community extending the traffic congestion issue during the summer months which can see 40,000 to 50,000 visitors per day.

Another concern is that the parks hours of operation are from 5AM and closes at 10PM and anglers will arrive while the park is closed and will be remaining in parking lot after the park is closed. This will require vehicles to be towed or amending the park hours which I also do not support.

Currently PRD, LED and MSP are discussing issues with special events and overcrowding on the island and how it is creating an unsafe situation where law enforcement and paramedics are unable to respond to emergencies due to the gridlock which is being experienced on our roads. Fishing groups will want to hold tournaments in the park future adding to the overcrowding problems.

In summary I do not support a boat access site on Belle Isle for the reasons I have mentioned above, if you would like to discuss my concerns in greater detail please call me at 313 396-6868 or on my cell phone at 989 619-5164.

F/LT Joe Molnar
MI Dept. of Natural Resources

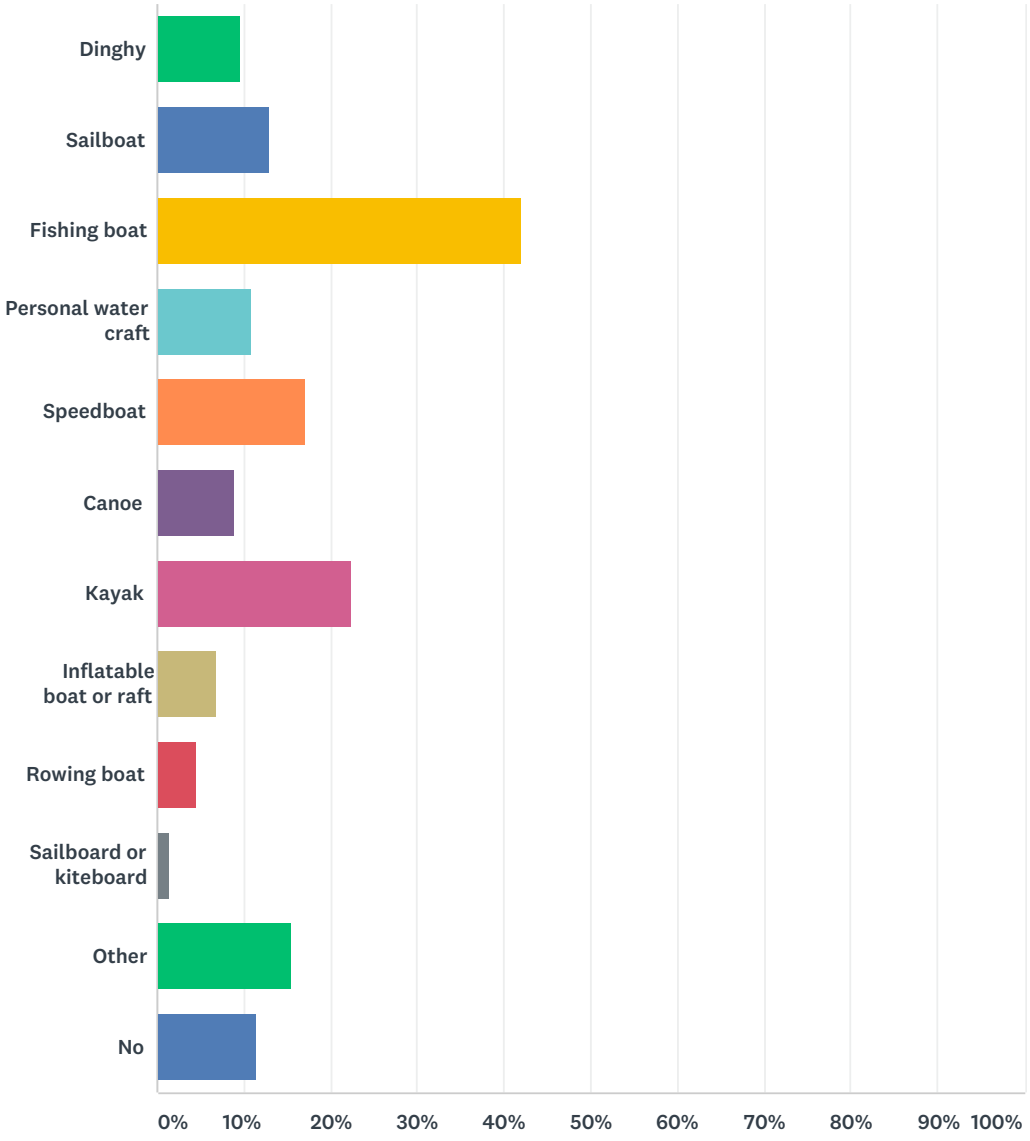
APPENDIX D – PUBLIC INPUT SURVEYS

Michigan Department of Natural Resources through the Department of Technology, Management and Budget
Detroit River Boating Access Study
Conducted by OHM Advisors

1. Do you or someone in your household own a boat? If yes, what type(s)?
    a. Dinghy
    b. Sailboat
    c. Fishing boat
    d. Personal Water Craft
    e. Speedboat
    f. Canoe
    g. Kayak
    h. Inflatable Boat or Raft
    i. Rowing Boat
    j. Sailboard or Kiteboard
    k. Other
2. On what waterway do you boat most often?
    a. Detroit River
    b. Lake St. Clair
    c. Lake Erie
    d. Belleville Lake
    e. Huron River
    f. Other
3. Which launch site do you most often use to access this waterway?
4. Do you participate in organized fishing/boating events?
5. If so, what size of event? (# of registrants)
    a. Less than 50
    b. 50-100
    c. 101-200
    d. 201+
6. What season(s) do you most often go boating?
    a. Spring
    b. Summer
    c. Fall
    d. Winter
7. On average, when do you go boating?
    a. Week Days
    b. Weekends
    c. Both
8. Identify any limiting factors that degrade your boating experience?
    a. Parking
    b. Signage to boating access sites
    c. Special needs access
    d. Launch site congestion
    e. Security
    f. Condition of boat launch
9. Are there facility improvements or amenities that would enhance your boating recreational experience?
    a. Improved access to water
    b. Parking
    c. Picnic Opportunities
    d. Restrooms
    e. Motorized boat free zones
    f. Storage
    g. Signage
    h. Boating trails
    i. Security at launches
    j. Hiking/biking trails
    k. Playgrounds
10. Where on the Detroit River would an additional boating access site facilities suit your needs best?
    a. MDNR land at Milliken State Park and Harbor.
    b. MDNR land at Grayhaven Marina (adjacent to Maheras Gentry Park).
    c. MDNR managed land at Belle Isle Park.
    d. City of Detroit land, Location:_____.
    e. Private land, Location:_____.
    f. Other, Location:_____.
    g. There is no need for additional Boating Access Sites on the Detroit River.
11. Open Comments:

Q1 Do you or someone in your household own a watercraft? If yes, what type(s)?

Answered: 1,304 Skipped: 7

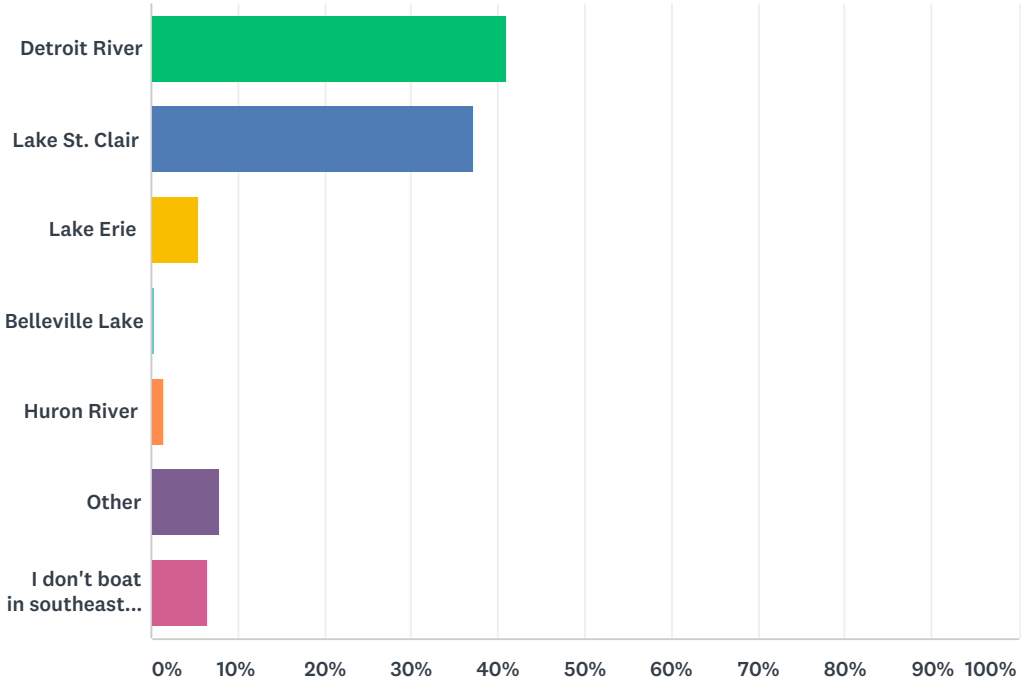


ANSWER CHOICES	RESPONSES	
Dinghy	9.66%	126
Sailboat	12.96%	169
Fishing boat	42.02%	548
Personal water craft	10.81%	141
Speedboat	17.18%	224
Canoe	8.97%	117
Kayak	22.32%	291

Inflatable boat or raft	6.98%	91
Rowing boat	4.52%	59
Sailboard or kiteboard	1.38%	18
Other	15.41%	201
No	11.58%	151
Total Respondents: 1,304		

Q2 On what waterway in southeast Michigan do you boat most often?

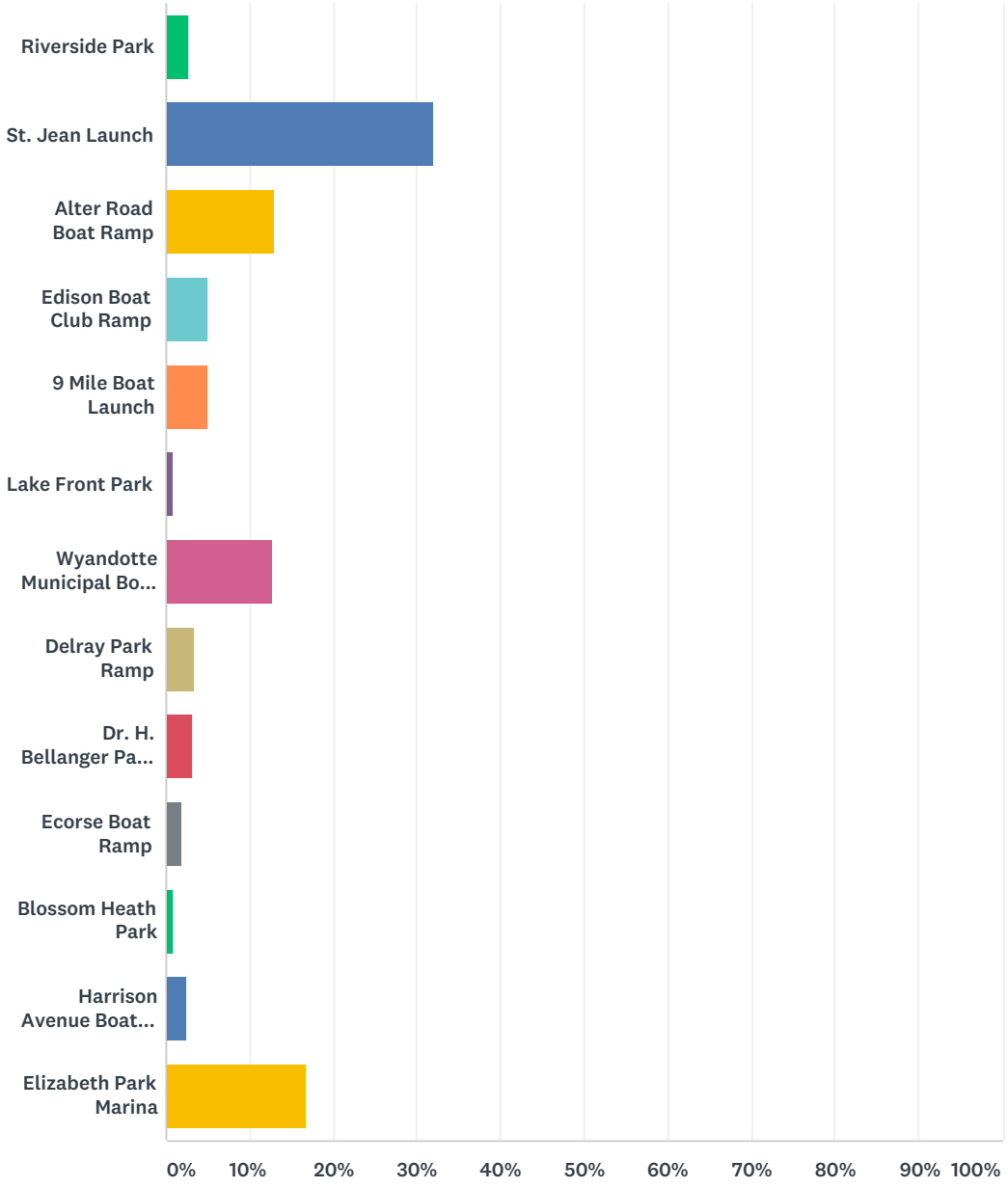
Answered: 1,145 Skipped: 166



ANSWER CHOICES	RESPONSES	
Detroit River	40.96%	469
Lake St. Clair	37.21%	426
Lake Erie	5.50%	63
Belleville Lake	0.44%	5
Huron River	1.40%	16
Other	7.95%	91
I don't boat in southeast Michigan	6.55%	75
TOTAL		1,145

Q3 Which launch site do you most often use to access the Detroit River?

Answered: 322 Skipped: 989

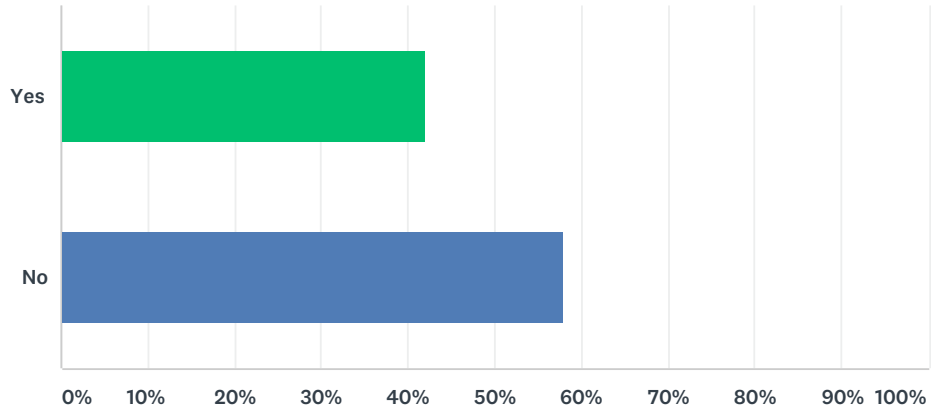


ANSWER CHOICES	RESPONSES	
Riverside Park	2.80%	9
St. Jean Launch	31.99%	103
Alter Road Boat Ramp	13.04%	42
Edison Boat Club Ramp	4.97%	16
9 Mile Boat Launch	4.97%	16
Lake Front Park	0.93%	3

Wyandotte Municipal Boat Launch	12.73%	41
Delray Park Ramp	3.42%	11
Dr. H. Bellanger Park Ramp	3.11%	10
Ecorse Boat Ramp	1.86%	6
Blossom Heath Park	0.93%	3
Harrison Avenue Boat Launch	2.48%	8
Elizabeth Park Marina	16.77%	54
TOTAL		322

Q4 Do you participate in organized fishing/boating events?

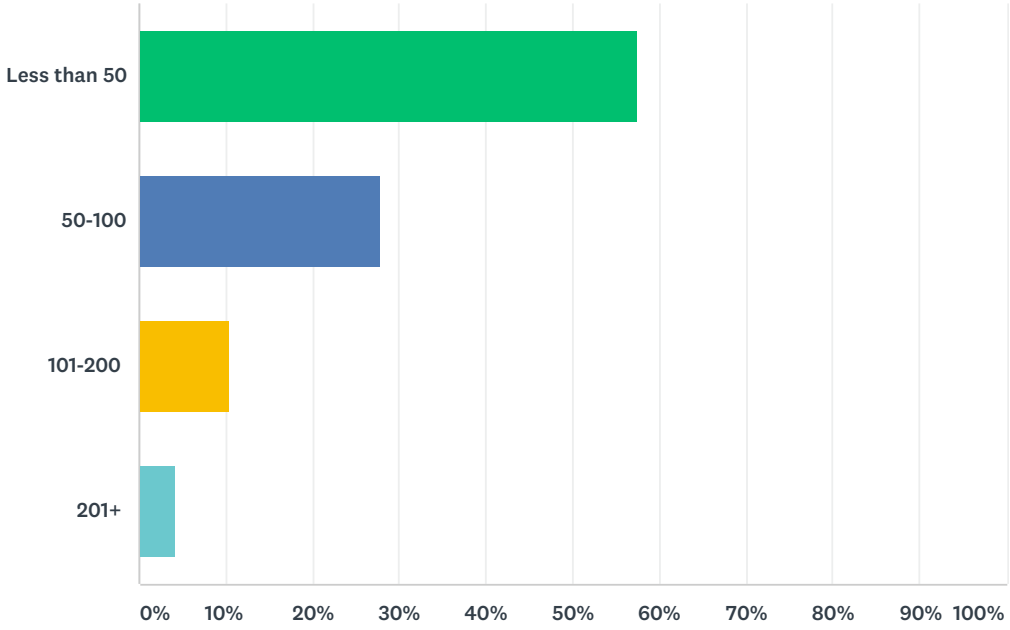
Answered: 1,114 Skipped: 197



ANSWER CHOICES	RESPONSES	
Yes	42.01%	468
No	57.99%	646
TOTAL		1,114

Q5 If so, what size of event? (# of participants)

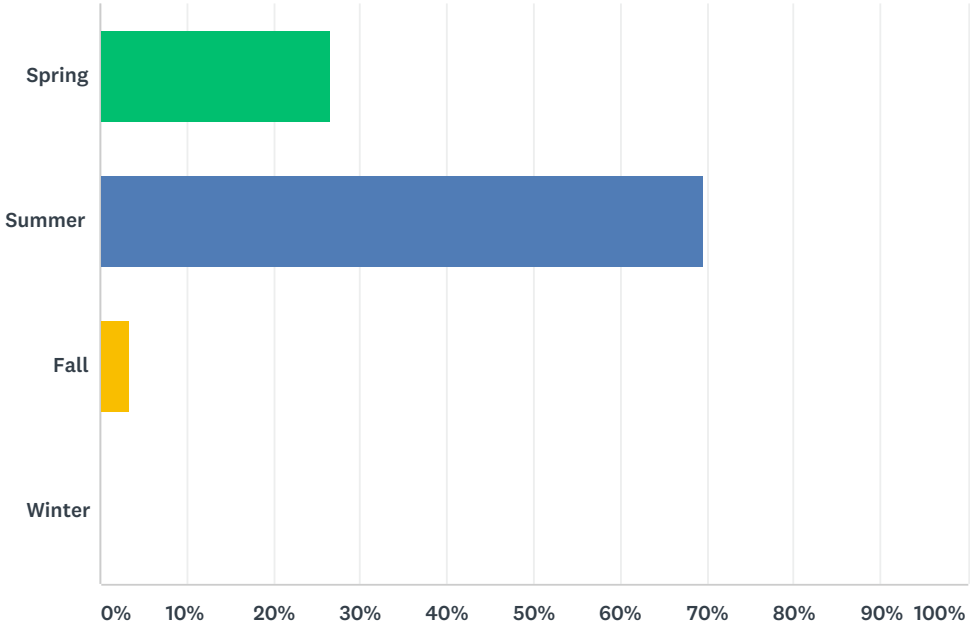
Answered: 464 Skipped: 847



ANSWER CHOICES	RESPONSES	
Less than 50	57.54%	267
50-100	27.80%	129
101-200	10.56%	49
201+	4.09%	19
TOTAL		464

Q6 What season do you most often go boating on the Detroit River?

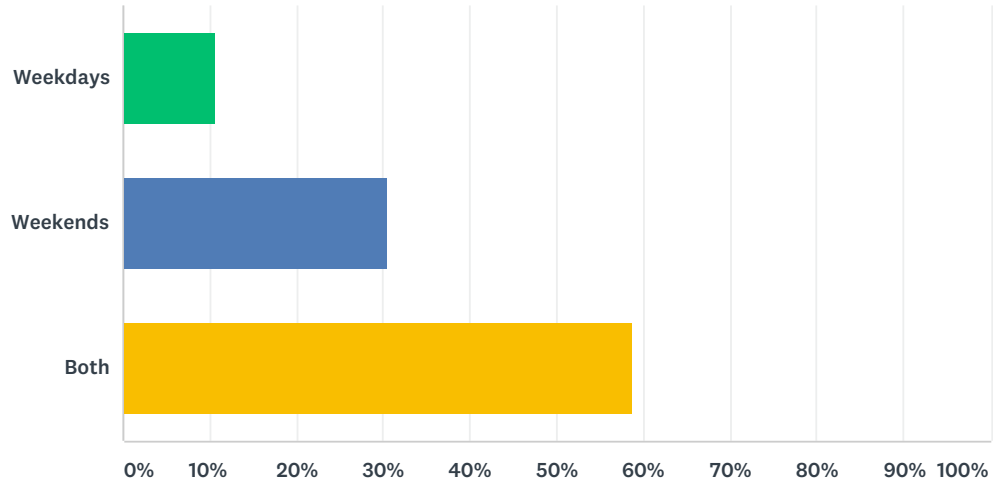
Answered: 1,044 Skipped: 267



ANSWER CHOICES	RESPONSES	
Spring	26.63%	278
Summer	69.73%	728
Fall	3.35%	35
Winter	0.29%	3
TOTAL		1,044

Q7 On average, when do you go boating?

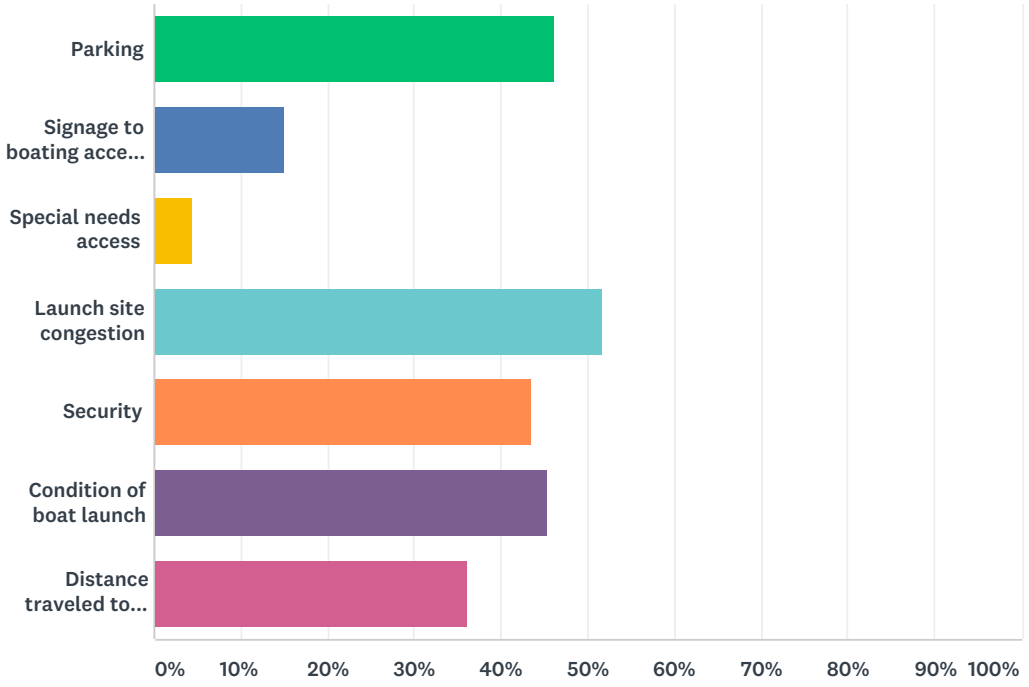
Answered: 1,088 Skipped: 223



ANSWER CHOICES	RESPONSES	
Weekdays	10.75%	117
Weekends	30.51%	332
Both	58.73%	639
TOTAL		1,088

Q8 Identify any limiting factors that degrade your boating experience? Check all that apply.

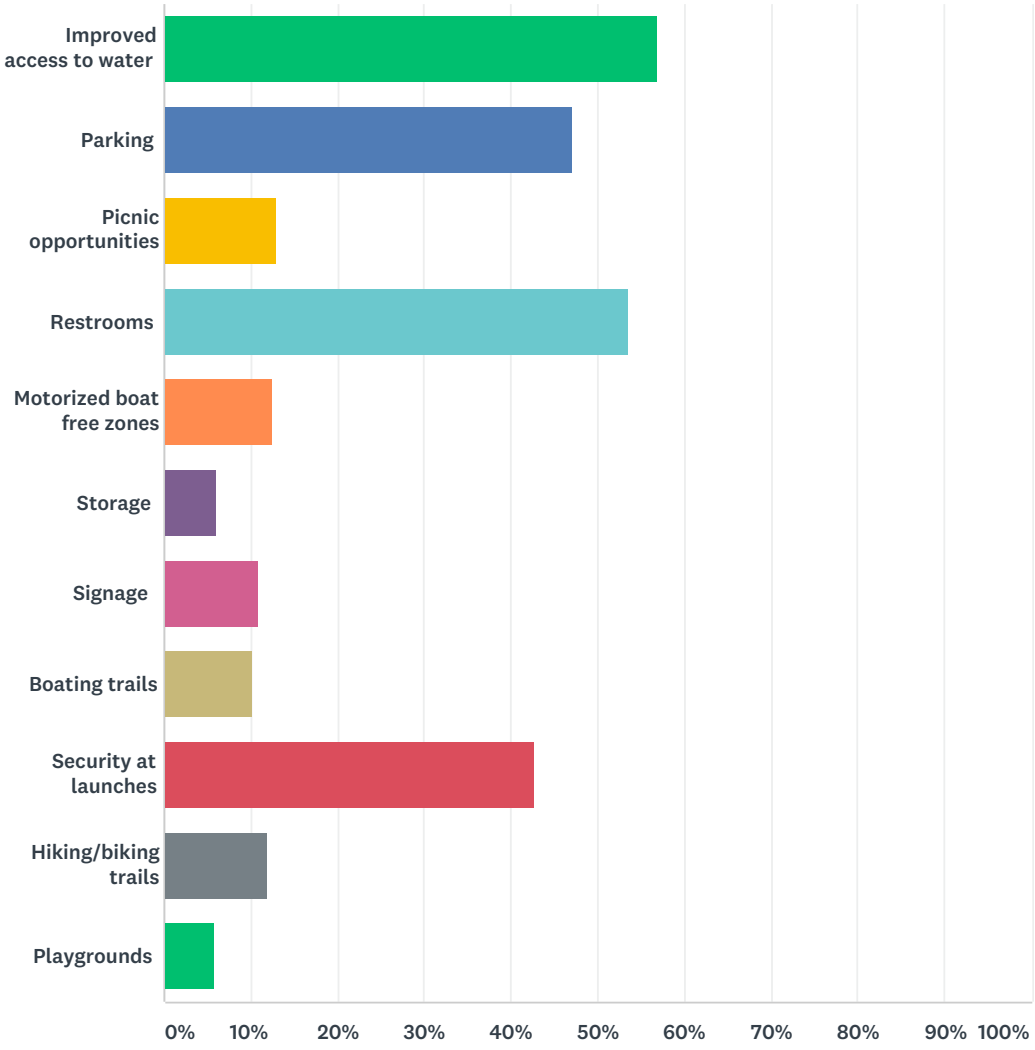
Answered: 833 Skipped: 478



ANSWER CHOICES	RESPONSES	
Parking	46.22%	385
Signage to boating access sites	15.01%	125
Special needs access	4.32%	36
Launch site congestion	51.62%	430
Security	43.46%	362
Condition of boat launch	45.38%	378
Distance traveled to boating access site (boat launch)	36.13%	301
Total Respondents: 833		

Q9 Are there facility improvements or amenities that would enhance your recreational boating experience? Check all that apply.

Answered: 877 Skipped: 434

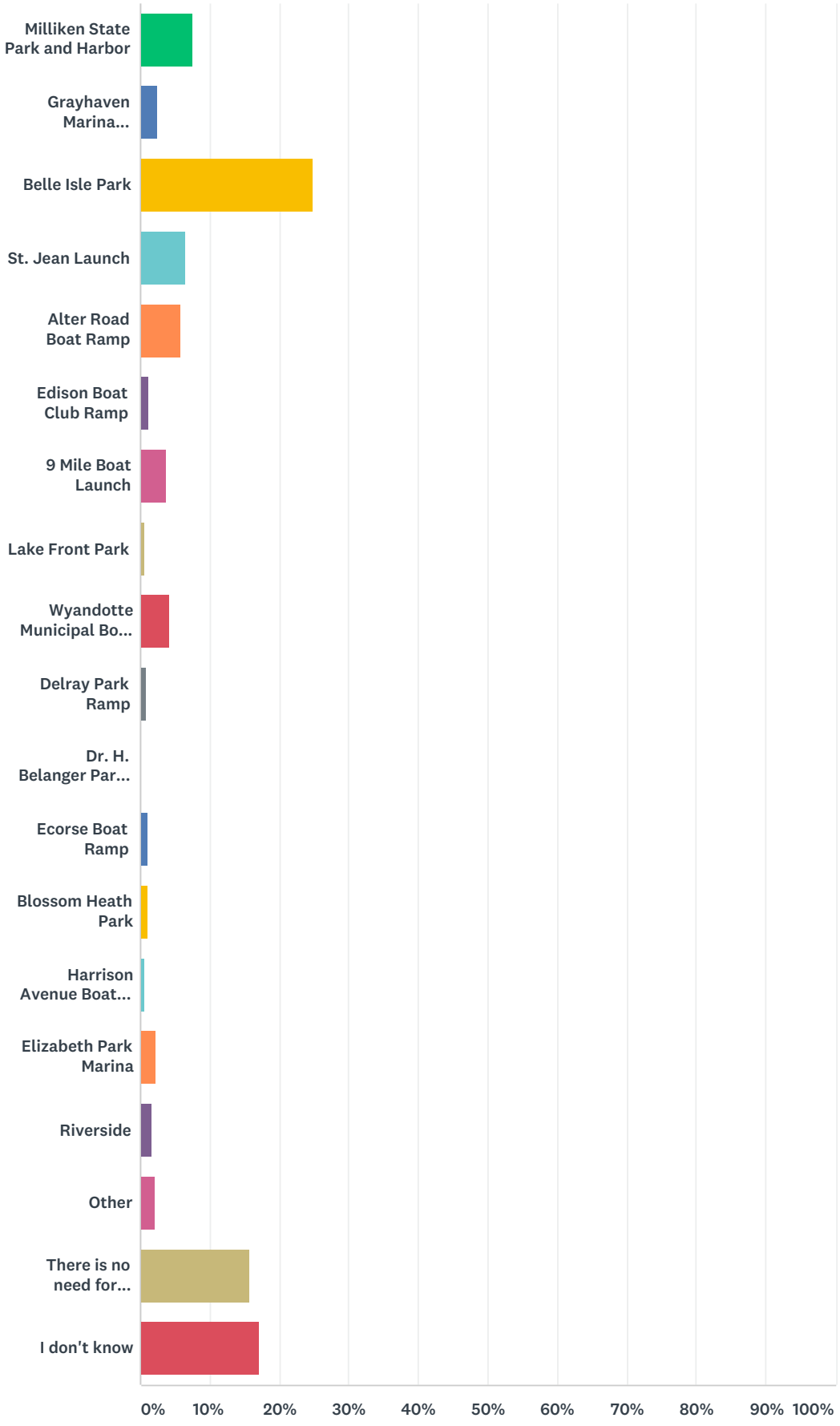


ANSWER CHOICES	RESPONSES	
Improved access to water	56.90%	499
Parking	47.09%	413
Picnic opportunities	13.00%	114
Restrooms	53.48%	469
Motorized boat free zones	12.54%	110
Storage	6.16%	54
Signage	10.95%	96
Boating trails	10.26%	90
Security at launches	42.76%	375

Hiking/biking trails	11.86%	104
Playgrounds	5.82%	51
Total Respondents: 877		

Q10 Where on the Detroit River would additional boating access site facilities suit your needs best?

Answered: 1,102 Skipped: 209



ANSWER CHOICES	RESPONSES

Milliken State Park and Harbor	7.62%	84
Grayhaven Marina (adjacent to Maheras Gentry Park)	2.54%	28
Belle Isle Park	24.95%	275
St. Jean Launch	6.44%	71
Alter Road Boat Ramp	5.90%	65
Edison Boat Club Ramp	1.27%	14
9 Mile Boat Launch	3.72%	41
Lake Front Park	0.73%	8
Wyandotte Municipal Boat Launch	4.17%	46
Delray Park Ramp	0.82%	9
Dr. H. Belanger Park Ramp	0.18%	2
Ecorse Boat Ramp	1.00%	11
Blossom Heath Park	1.09%	12
Harrison Avenue Boat Launch	0.64%	7
Elizabeth Park Marina	2.27%	25
Riverside	1.72%	19
Other	2.18%	24
There is no need for additional Boating Access Sites on the Detroit River	15.70%	173
I don't know	17.06%	188
TOTAL		1,102

Q11 Open comments regarding boating access sites (boat launches) on the Detroit River:

Answered: 574 Skipped: 737

Detroit River Boating Access Study

The attached survey was responded to by 1,408 water recreationalists. Fifty two of the surveys were received by personal face to face interviews June 29-30, 2018 at either: Belle Isle, Delray Park Ramp Launch, the St. Jean Launch, and Dr. H Belanger.

Q1 – Do you or someone in your household own a watercraft? If yes, what type(s)

Top 2:

- Fishing boat: 42.40% 575 people
- Kayak: 22.05% 299 people

Bottom 2:

- Rowing Boat: 4.49% 61 people
- Sailboard or kiteboard: 1.32% 18 people

Q2 – On what waterway in southeast Michigan do you boat most often?

Top 2:

- Detroit River: 41.11% 494 people
- Lake St. Clair: 38.55% 463 people

Bottom 2:

- Huron River: 1.33% 16 people
- Belleville Lake: .41% 5 people

Q3 – Which launch site do you most often use to access the Detroit River?

Top 2:

- St. Jean Launch: 33.91% 117 people
- Elizabeth Park Marina: 16.23% 56 people

Bottom 2:

- Blossom Heath Park: .80% 3 people
- Lake Front Park .80% 3 people

This question was skipped by 989 survey respondents.

Q4 – Do you participate in organized fishing/boating events?

Yes: 41.70% 488 people No: 57.94% 675 people

Q5 – What size of event? (# of participants)

Top 2:

- Less than 50: 53.26% 277 people
- 50-100: 25.96% 135 people

Bottom 2:

- 101-200: 9.61% 50 people
- 201 +: 3.84% 20 people

Q6 – What season do you most often go boating on the Detroit River?

Top 2:

- Summer: 70.45% 775 people
- Spring: 27.54 % 303 people

Bottom 2:

- Fall: 4.09% 45 people
- Winter: .04% 5 people

Q7 – On average, when do you go boating?

Top 2:

- Both: 58.30% 667 people
- Weekends: 30.50% 349 people

Bottom 2:

- Weekdays: 10.40% 119 people

Q8 – Identify any limiting factors that degrade your boating experience?

Top 4:

- Launch site congestion: 49.38% 439 people
- Parking: 46% 385 people
- Security: 43% 362 people
- Condition of the boat launch: 46.22% 387 people

Bottom 2:

- Signage to boating access sites: 14.51% 128 people
- Special needs access: 4.38% 39 people

Q9 – Are there facility improvements or amenities that would enhance your recreational boating experience?

Top 2:

- Improved access to water: 54.98% 513 people
- Restrooms: 51.76% 483 people

Bottom 2:

- Storage: 6.00% 56 people
- Playgrounds: 5.5% 52 people

Q10 – Where on the Detroit River would additional boating access site facilities suit your needs best?

Top 2:

- Belle Isle Park: 24.95% 275 people
- I don't know: 17.06% 188 people

Bottom 2:

- Harrison Avenue Boat Launch: .64% 7 people
- Dr. H. Belanger Park Ramp: .18% 2 people

Q11 – Open Comments.

Open comments regarding boating access sites (boat launches) on the Detroit River:	Additional BAS Needed in the Detroit River	Additional BAS **Not** Needed in the Detroit River	Need for a BAS not Expressed	Belle Isle	Mainland	Location not specified
Open-Ended Response						
Boating access and launches should not be near the Detroit Yacht Club due to security issues and concerns and congested boat traffic conflicting with sailboat ingress and egress. Also, launch site near DYC would promote conflict with young people learning to sail on the Detroit River and kayak activity. Safety issues would be paramount.			1		1	
It makes no sense to spend taxpayer dollars for a new boat launch in Belle Isle. Access is too difficult and restricted. And the danger of injury to people on the island from trucks and trailers and to kayakers, paddle boarders and small boat sailers in the proposed launch area is very great. It would be far better to have an enhanced or new boat launch on the mainland where access is safer, easier and closer.			1		1	
Siting a new boat launch on Belle Isle would be a misuse of government funds and an accident waiting to happen. Access to Belle Isle is severely restricted for half of the spring and summer months by the race preparations. Access is not available on the early morning hours when fishermen often prefer to go out on the river. Other existing sites on the Detroit River provide far better and easier access. Trucks with trailers and boats driving around Belle Isle to a site on the northeast side of the island would invite accidents with pedestrians, bicyclists and other vehicles. Launching and retrieving motor boats on the side of the lagoon across from the DYC would endanger Detroit school children and adults training in small unpowered sailboats directly across the lagoon in the narrow channel to the Detroit River.			1		1	
Things improving over the past couple years. Keep up the good work.			1			
Clear some of the bigger downed trees out of the kayaking canals on Belle Isle?						
Definitely not Belle Isle. The island is a Traffic nightmare . There are small children everywhere and I fear what would happen with people hauling boat trailers adding to the congestion and confusion . Tragedy waiting to happen in my opinion .			1		1	
Too much traffic on Jefferson and in river particularly around Belle Isle. No wake zone which most boaters disregard. I'm concerned for the kayakers, canoeing, and rookies with all types of small boats getting injured by increased traffic on the water.		1				
Opposed to boat launch on East End Of Belle Isle due to 1. increased traffic congestion going to the east end of the island with vehicles pulling trailers. Also increased congestion by the beach & golf course where it narrows to 2 lines but is really 1 lane due to lack of parking enforcement. 2 The lagoon on belle isle has already the noise & wake levels increased by party pontoon boats that enter the area & distrubt the Kayakers, sailboarders, dinghies and small non-powered sail boats. 3 Concerned for the safety of Detroit School children taking all day learn to sail program (non-motorized boats) with a boat launch for motorized boats so close. 4 Affect on wildlife (white swans, mallard duck, muskrats, fish and other aquatic animals) that have inhabited the area for decades from increased pollution from exhaust in the water, nose, and increased wake. 5 Increased vandalism; when the Kayak rental opened at the other end of lagoon my boat was boarded twice and vandalized by people that had rented kayaks. Lots of reasons not to build a boat ramp on laggon: 1 increased traffic congestion, 2 increased opportunity for vandalism, 3 safety of Detroit School children, 4 harm to wild life living in & around the lagoon. Thank you			1		1	
Placing baot launching facilities on Belle isle is strongly NOT recommended. Belle isle is congested enough as it is. There are sufficient boat launching facilities already on the Detroit river. The concept of a boat launch across from the Detroit Yacht Club is very poorly conceived.			1		1	
Keeping improvements to current sites that are close to easy driving, eg Jefferson, would be best. Please do not put a site on Belle Isle. The driving congestion to get there and the increased number of people/cars on the island would just add to frustration. Improve what we have and don't add more burden to the budget with a new site.	1				1	
I am opposed to an access on Belle aisle at the east sand since the traffic congestion would be excessive			1		1	
There should absolutely not have boat launch on Belle Isle. The bridge is already too congested and it would be unsafe for bicycles and pedestrians crossing the bridge. Boats being trailered would just create a bigger mess than entry already is causing extreme back ups all the way to Jefferson.			1		1	
There are several factors that make Belle Isle a poor choice for the placement of an additional boat launch. Additional boat traffic would have a very negative impact on traffic both on the bridge and the island, where congestion is already an issue. Additional trailer-bearing traffic would be dangerous to pedestrians and cyclists on the road around the island. Because the island is accessible by a single bridge, and the only major road around the island is one way, a new boat launch there would be more difficult to access from the city than many of the other proposed sites. Finally, additional pavement for boat access and parking would take from the already-finite greenspace on Belle Isle.			1		1	
Additional boat ramps are not needed on the Detroit River. Improve the security of the existing ramps. An additional ramp on Belle Isle would create extreme congestion on the island and endanger small sailboats and kayaking that are increasing in popularity in the Lagoon area. The wildfowl would also be endangered in this area!		1			1	
I don't want boat sites		1			1	
No additional access needed on Belle Isle			1		1	

My belief is that there is no need for additional boating access along the Detroit River, especially NOT on Belle Isle. If, however, you were seeking a sight on Belle Isle, the best spot, in my opinion, would be at the "old" Boat Club facility. It is the only spot that has easy access on-off the island (not impacting the entire island), has adequate parking facilities and also has docks available. Perhaps a launch ramp would be needed, but the rest is there. Anyplace else on Belle Isle would severely impact the already crowded island, especially the weekend crowds. Plus, the people who use Belle Isle are already concerned about the amount of cement on the island and the impact a number of events (Grand Prix, triathlons...) have on enjoying the island and affects their enjoyment of the island. It is best to leave Belle Isle alone when it comes to adding a boat launch. The island is calm & relaxing; adding a boat launch means adding more traffic, traffic with trailers, and adding more noises that are not anywhere near 'nature' sounds! My answer is "NO" do not add a boat launch site on Belle Isle!		1			1	
Put money into existing launch sites to make them nicer.		1		1		
Unfortunatly my truck and boat trailer were stolen while i was fishing at the st.jean boat launch . It would be great if the Dnr. took it over				1		
There is not a huge need to spend money for more access sites. I spent 30 plus year boating in the river and nevEr had an issue. Money should be spent retiring traffic on belle isle. Utilize the concrete places my grand prize and buy some trolleys or the Luke and shuttle people to picnic places. It is ridiculous that you cannot drive without being in basicallly a war zone on weekends wh n the place gets packed.	1					
Overhead wires are a sailers nightmare. A queue close to the ranm that would allow sailers to rig, while letting power boats launch and go would help everyone!	1					1
Need to maintain ramps, docks, and lots better.		1				
Placement of a boat launch ramp on the Lagoon would negatively impact boats of all sizes docked in the Lagoon due to the narrow channel for access to the Detroit River. It would have an especially severe impact on the DYC's multiple sail training programs for both adults and Detroit school children, as well as all users of kayaks, sail boards and other non-motorized devices. Locating a busy boat launch ramp across the entrance to the Lagoon would create high potential for collisions, capsizing, and personal injuries caused by boat traffic congestion and wakes from boats newly launched or awaiting return to their trailers.	1					
Please do not put a boat launch on Belle Isle. The island itself is already congested enough. Many people already don't adhere to rules, this would cause more issues.			1		1	
Improved facilities in terms of security and cleanliness would encourage us to go boating more frequently, as would launches for non- motorized boats. Otherwise we are at the mercy of power boats and their size, noise, and wakes that make our access to the river very difficult. Adding additional ramps at existing launch sites for those of us with small non-powered boats would be great! Also getting the Coast Guard or Detroit Harbormaster to enforce no wake zones in the river would be helpful for safety. Don't need more launch sites, or anything on Brlle, which is too hard to access due to its great popularity now that it is managed by DNR, just improve the ones we have!		1				
Options for boat parking or overnight to enjoy things to do in detroit such as games, going to dinner, events, etc.	1				1	
It would be nice to have a few more public restrooms and attractions to be able to dock at			1			1
I launch in Ontario		1			1	1
Need more on the Canadian side between LaSalle & East Windsor		1			1	
I oppose any proposed public ramp to be built in the vicinity of the Detroit Yacht Club			1		1	
My husband & I are boating members @ DYC. We oppose adding another boat launch at or near the DYC because it would add more traffic to Belle Isle which is already congested and not managed well.			1		1	
Belle isle should strive for car free zones. Adding cement to the island diminishes the walking trails that people love. Adding cars to the island is counter productive when there are better alternatives that are under used. Erma Henderson park is ideal and isn't on the survey.	1				1	
The Belle Isle lagoon would be a poor place for a new boat launch. It requires a long drive on the island to get to it, and the island is often congested on weekends. Someplace on the mainland is optimal for a new launch site.	1				1	
Increased traffic on river is a concern		1				
The proposed ramp on Belle isle would not be a good idea due to increased congestion on the island			1		1	
The proposed boat launch across from the DYC in the lagoon is much to narrow. Sailboats currently moored will have limited maneuverability for navigating the lagoon. Consider near the Coast Guard base or model boat pier.	1				1	
detroit boat club	1			1		
Launches on Belle Isle would add to Traffic,demand for 24 hr.access,congestion on Lagoon area would be dangerous for all.			1		1	
Having an additional boat launch on Belle Isle would only add to the already congested roads and parking on Belle Isle. There will be accidents galore on the roads around the island itself with pedestrians and bicycles ducking for safety. If the launch were to placed on the Lagoon side across from the Detroit Yacht Club as has been suggested, there would be further pandemonium due to the congestion of more boats added to sailboats returning to the club, kayakers sunning themselves and not watching where they drift, sport fisherman in the harbor, and canoes roaming around. I could see the scenario for many water accidents there. I would not even think about placing a ramp on the lagoon.			1		1	
Anywhere but Belle Isle, already so much weekend traffic!	1				1	

Not on Belle Isle....it would be dangerous for bikers and joggers.			1		1	
Please do not add a boat ramp to Belle Isle across from the DYC lagoon. Not only is it already congested there but children take learning to sail classes there. Inexperienced sailers mixed with people launching motor boats seems as if it could be a very dangerous situation. Additionally, added boats/trailers to the already congested traffic around the island might pose additional problems - given that these boats/trailers would be coming all the way around the island - icluding coming through the narrow woods roads. I do not think Belle Isle would be a very good place to add a boat ramp for motor boats. Please remove Belle Isle from consideration for a motor boat launch site.			1		1	
Congestion concern						
Best place to launch a boat is on the Detroit side NOT on belle isle to much traffic and people's not enough parking to hard to get to with a trailer	1				1	
Most existing sites should be enlarged.		1				
More boating access should be available from the mainland where there are multiple ways, roads and highways to get there. Pulling a trailer with boat on the expressway and across a bridge that is often crowded on weekends and hot summer days takes away from the time one could be spending on the water. Getting to a boat ramp and park directly from a major road like Jefferson makes sense. Many suburbanites would drive to a launch site above 9 mile road but not closer to Detriot. Pulling a trailer and boat requires more room. Also I would not want to spend time driving to a site in Detroit which would shorten my time on the water.	1				1	
they should be on the mainland not Belle Isle	1				1	
Improve the St. Jean boat launch facility						
I don't think anywhere on Belle Isle is a good idea. Traffic across MacArthur Bridge is problematic in the summer, with long lines to get on and off the island. With the addition of the Iron Bell Trail to the Island, which would convert some interior roads to Pedestrian/bike only, I worry that traffic on the one-way ring road would be even worse...especially near the beach, where there are already issues with congestion and a large number of pedestrians-including many children-crossing the street. Planned improvements to the beach area (the splash park and alfresco dining) could exacerbate this situation. I am absolutely in favor of improving any of the existing boat launch areas, but do not think that adding something to Belle Isle makes any sense.			1			1
Uncongested with easy access to highways. Good secure parking.	1				1	
Easy & quick access from/to I-75, I-94, Jefferson with trailer provisions.	1				1	
The worst idea that I have heard was on Belle Isle. This would create so many problems that I have a hard time believing that a rational person would suggest it.			1		1	
Boat Launch near Belle Isle Harbor Master	1			1		
Improve or expand current sites. Do not attempt to create a a motorized launch on Belle Isle. The site being considered is an active harbor for Sailboats. It is also used for sailing classes, paddle boards and kiyacs. Motorized craft are not compatible with current use. They would increase congestion, erosion, and reduce safety.		1				
We do not want a boat launch on Belle Isle			1		1	
Please do not put access in the DYC Lagoon. Boat traffic!!			1		1	
would fish it more if it was more convienent	1					1
I think that they are great. I don't want to see one added to belle isle	1				1	
boating is not avail to those without funds			1			
Wish there was a marina on Belle Isle, or even moorings.	1			1		
Any future site should consider all effects it would have on existing wildlife, traffic, and socioeconomic factors.			1			
I think it would be great to have a boat launch on bell isle	1			1		
The current locations and number of site are adequate, but some need upgrades in terms of parking, cleanliness, and security. It would help if there were areas where non-motorized boats could launch without fear of wakes from other boats launching or passing by at excessive speeds. The sail training boats that are in the lagoon off Belle Isle are especially vulnerable since they are full of novices, both children in a special program with Detroit schools as well as adults, so that area should be avoided for any development of launch sites. MDNR is doing. Great job on Belle Isle, and as someone who first learned to canoe on the canoe on the island's canals, it is wonderful to begin to see some of that activity there again!		1				
Improved conditions at existing launches oa adding more in areas where small boats could launch away from the excessive power boat wakes on the river would help. Those of us in small sailboats without motors, or in canoes or kayaks, would benefit from an added ramp in existing facilities so we are not literally swamped by wakes from power boats. Adding access points along the mainland east of Detroit toward or on Lake St Clair would expand opporunities to access our wonderful water!	1				1	
Access from Jefferson anywhere along the riverfront is key. The mention of possible launch facilities on Belle Isle makes no sense due to high levels of traffic and back ups on the bridge currently. Adding cars or trucks with trailered boats would just make things worse. It would be far more wise and cost effective to improve current facilites on the mainland, whether MDNR or Detroit-owned, than to pave more of Belle isle for this purpose! In addition, access to Belle Isle is already limited for two months for the auto races, so any launches on the island would be inaccessible during that period.	1				1	
Locating a launch on Belle Isle is a terrible idea. Proposed location is Way to close to the sailing school to be safe for anyone, let alone school kids from the city of Detroit .			1		1	

there is a tree across the Silvan Canal and a still some litter (although improved.) The kayak launch is great, having a source of potable water would be good near the Pavilion there.			1			
3 times a summer I have gone to Milliken Harbor, in 2018 I have been unable to get a reservation. Is this due to increasing seasonal renters?	1					1
Easy access to launch sites along the river is important, so improving facilities at existing launch sites will help, whether operated by DNR or Detroit or other cities along the river. The idea of adding a launch site on Belle Isle does not make sense, as access lis limited both by the bridge and narrow roadways but also by the reality that the island is partially shut down for 2 months for the Grand Prix. Investing in existing or adding new launch sites on the mainland makes far better use of taxpayer money!			1		1	
Please keep launch sites for motorized boats away from small sailboats such as in flagon area on Belle Isle, where there are sail training programs for Detroit school children and adults. The small sailboats have no motors and would be greatly impacted by motor boats launched in that small area. The potential for collisions and capsizing of the small boats, resulting in injuries and deaths is very high. Keep launches away from areas active with small unpowered sailboats!			1		1	
Strongly favor improvement of the existing launch facilities on the mainland -- parking, cleanliness, security, restrooms, etc. Adding access on Belle Isle makes no sense due to already congested traffic on the island, and especially traffic back-ups on the bridge getting onto Belle Isle due to lack of overhead signage guiding traffic into appropriate lanes (for those with passes vs. need to purchase). Hope MDNR will support City of Detroit and other riverfront municipalities to improve their launches.	1				1	
The more kayaks on the water, the better! These are very accessible boats that allow even non-boaters to get on the water. Thus, kayak launches should be emphasized. I'm pretty sure these launches can also be designed for those with handicaps.	1					1
Not wanted on Belle Isle. Too crowded already.			1		1	
Mt. Elliot Park should be developed for boating.	1				1	
We tried heading south from Anchor Bay one time & the boating that was going on was so rude and inconsiderate. We are a slow moving Trawler design, with max mph at 8-9. The power boats found enjoyment in buzzing right on top of us to see how much rocking & rolling they could create. Very very rude boaters on the Detroit River. Apparently no way to control that, I've been told.						
I would rather see the DNR spend resources to improve the current ramps, like St Jean, Delray, Riverside, et ... rather than place a new ramp on Belle Isle, which would degrade usage of Belle Isle and current fishing locations around Belle Isle, IMO.		1				
The question of adding a public boat launch site opposite to the Detroit Yacht Club in the Lagoon is one of great concern. This area is used for sailing lessons for novices and increased motorized boat activity and noise will have a very negative impact. Belle Isle is large enough to find another area which would be better suited for a public launch facility.			1		1	
Belle Isle would be to congested if a public boat ramp was added			1		1	
There are plenty of ramps in the area now		1			1	
Anywhere except Belle Isle. Lets keep it clean and free of more congestion and motor exhaust			1		1	
Improving the existing launches seems to be the best way to go. New launch sites on Belle Isle are not needed or desirable. Belle Isle launch sites would increase congestion on Belle Isle, degrade the Belle Isle experience, impact the wildlife with more noise and engine exhaust, impact programs for children if placed in the Lagoon, ruin the peacefullnes of the Lagoon and have a negative impact on the overall environment of the Lagoon. Also, it would ruin a great picnic area at the Lagoon.			1		1	
if a new ramp opens on Belle Isle, best location is near the old fishing pier and/or golf course, not the DYC!			1	1		
Belle isle is a poor location. It would create a very dangerous situation. Bad for traffic, wildlife, shoreline erosion.....			1		1	
Wake concerns						
A launch on the Belle Isle lagoon would put the safety of swimmers and kayakers at risk.			1		1	
Please do not put a boat launch site in the lagoon of the DYC, off of Belle Isle. It would impede the current sailors' ability to properly dock and sailing in the lagoon, and also disturb the serenity and privacy that DYC club members currently pay for. There are so many other great options that you pose in this survey. The lagoon of the DYC isn't a wise option. Thank you for your consideration of this.			1		1	
Please install ADA boat ramps for kayaks. Thanks.						
Too much traffic on Belle Isle near the DYC to add another launch. Negative impact on sailing class held at DYC. Adverse impact on wildlife and on swimmers at the beach. Put the launch anywhere but Belle Isle			1		1	
I vehemently am against an additional launch on Belle Isle for a plethora of reasons, including wildlife, traffic, and noise concerns.			1		1	
With all the launch sites on the Detroit shore line I do not see the need to consider having a public launch site on Belle Isle			1		1	
An additional boat launch on the Belle Isle lagoon is not necessary and would negatively impact current boating activities on the lagoon. There is a current sailing program for both children and adults which is dependent on the lagoon. Also people fish off the end of the island at the lagoon. Access to Belle Isle is limited to bridge traffic which is very heavy in summer months. An additional boat launch site if deemed necessary would be more desirable on the Detroit side of the river.	1					

If the boat launch was in the Belle Isle Lagoon: Pollution from exhaust in the water, noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. All wildlife would be impacted in the Belle Isle Lagoon including white swans, mallard ducks, other birds, muskrats, fish and other aquatic animals. A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	
Need safe river access north of Ren Cen	1				1	
I don't think the lagoon on belle isle is a good. launch site. It's a serene,quiet green space. It would disturb the natural wildlife that lives there. There are not as many places to paddle board or kayak without having to worry about running into motor boats. Please don't pave this paradise to put up a parking lot. Not on Belle Isle Lagoon. Let's keep its natural beauty just the way it is. Thank you.			1		1	
Belle Isle is already overcrowded, putting a boat launch here, would only further degrade the island.			1		1	
A boat launch ramp on the Belle Isle Lagoon would only add to the existing traffic jam for west bound traffic heading toward the beach and bridge. Especially on Saturday and Sunday. Additional noise and wakes hitting the shore line in the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, and sail training boats. All wildlife would be impacted in the Belle Isle Lagoon.			1		1	
Please leave the area near the DYC Lagoon entrance out of the plans. There are too many sailboats coming in and out the canal for this to be a safe boat launch spot.			1		1	
I understand there is some consideration on adding a new launch on Belle Isle. I have concerns on a few fronts. With the addition of the kayak/paddleboard rental operation, many new/inexperienced people are circling the island off of Belle Isle beach that contains the Detroit Yacht Club. A launch in this area would increase congestion on the water and I think have a major impact with the safety of kayak/SUP renters as well as the safety of the youth involved in the learn to sail program at the DYC. In addtion, the increase in traffic of those launching would have an impact on many parts of the island but especially the Belle Isle beach are which already is a source of intense congestion. Please do not put a new launch on Belle Isle. Thank you.			1		1	
A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	
There is a need for a large, tournament-friendly, safe public access site on Belle Isle.	1			1		
Seems like the existing boating access sites just need more parking and a little more security to meet the needs of people that want to launch in the area.		1				
Anywhere but Belle Isle, traffic is already bad, I would never get to use it	1				1	
It would be nice to have a launch at the Gray Haven marina, and to rebuild the one at the foot of St Jean to provide the proper angle of the launch surface.	1				1	
Need places to park your boat at Belle isle and along the river transient slps						
It is very good what we have. Thank you		1			1	
• A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	
This is a great idea and much needed	1					1
Launch should NOT be located on the lagoon adjacent to the DYC as it is too confined an area and has too many negative impacts.			1		1	
A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills, teamwork, and character. Building a boat launch close to the small non powered sail training boats would put the children at risk and likely mean the end of this program. It is also dangerous for kayaks, adult sail training, and other non powered activities that occur in the lagoon.			1		1	
The Detroit River is gross	1					
Located near the mouth of the River not in the River.	1					

Belle Isle is a park with an emphasis on wildlife preservation. No motorized vehicles or boats should be encouraged there due to the pollution and need for habitat. All wildlife would be impacted in the Belle Isle Lagoon including white swans, mallard ducks, other birds, muskrats, fish and other aquatic animals..... A boat launch ramp on the Belle Isle Lagoon would only add to the existing bottleneck for west bound traffic heading toward the beach and bridge.... A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this intercity program due to the danger of a dinghy sized sailboat to be hit by a power boat resulting in injury to the children.			1		1	
A boat launch ramp on the Belle Isle Lagoon would only add to the existing bottleneck for west bound traffic heading toward the beach and bridge. Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats.Pollution from exhaust in the water, noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. All wildlife would be impacted in the Belle Isle Lagoon including white swans, mallard ducks, other birds, muskrats, fish and other aquatic animalsA tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	
Putting a public boat ramp access in the stagnate water of the Lagoon across the DYC will create an environmental issue. Since this water is not impacted by the river current, it would quickly become contaminated with oil and gas discharge from outboard motors. Without the current from the river to dissapate the oiil, the Lagoon waterway will become unusable for swimming and boats that are currently docked in the Lagoon waterway. A boat ramp closer to the MacArthur bridge would be less impactful to the environment said nice the river current would aid in dissipating the oil and gas discharge into the river.			1		1	
Constructing a boat launch ramp on Belle Isle will only serve to create more congestion when getting on the island before the toll booths as well as departing the island. Vehicles towing trailers will serve to further complicate this traffic issue. To my knowledge, at a minimum the island was already shut down on the afternoon of Memorial Day as it is. Adding facilities for towing vehicles and trailers will exacerbate the problem.			1		1	
A boat launch ramp on the Belle Isle Lagoon would only add to the existing bottleneck for west bound traffic heading toward the beach and bridge. Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats. Pollution from exhaust in the water, noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. All wildlife would be impacted in the Belle Isle Lagoon including white swans, mallard ducks, other birds, muskrats, fish and other aquatic animals. A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	
Consideration needs to be given to sailcraft as well as power boats when talking "boat launches." Narrow spaces are harder to accomodate both, so if sailcraft is already in a designated space, perhaps additional launches for powerboats are not necessary (or will affect adversely). We appreciate all the work the DNR does!		1				
The idea of creating a boat launch at Belle Isle lagoon would be a mistake. The lagoon is a peaceful habitat that is too small to place a boat launch. The congestion, noise, pollution and danger from having boats launch here is a real problem. Traffic, parking, wakes from boaters ignoring "no-wake" zones and of course, the potential for collisions with sailboats (particularly junior sailors in the lagoon) would be a great concern. Please consider other sites along the river for a launch other than the too small, peaceful Belle Isle Lagoon. Thank you.			1		1	

I have used Belle Isle with my family and friends for about fifty years. I proposed to my wife on Belle Isle. I love the Island and have great experiences there. Establishing new boat launch sites on the island must be done with careful examination of it's effects, both to human safety and enjoyment as well as to the environment and existing successful institutions. Paddle boarding and kayaking have become very popular and there are many personal craft boaters who must be protecust be protected as they have limited areas for boating safely. The worse place to place a boat ramp would be in the Lagoon separating the sailboat area of the Detroit Yacht Club. There is much boating activity of non powered vessels there all summer. Many boating classes for kids and adults. Paddlers, small sail craft, and even the commercial paddle-boat visit that lagoon. Any kind of powere boats would totally disrupt that area and present great challenges and risks to the boating community that uses it and the boaters of the Detroit Yacht Club. Vandalism and bad behavior, as well as the noise and gas fumes would be a serious and uncontrolled violation to the air, water and human safety. Not enjoyable for anyone. Ias a lover of this Great State Park, and its precious heritage, i adamantly oppose any such initiative to build a boat launching facility in this specific area. I am dead to see paddlers using the park's canals. And think more dredging, openness, and usage of this inner park system would be appropriate. The Blue Herron Lagoon is another potential area for development. I appreciate you're consideration of my experiences and recommendations.			1		1	
Improve the ones that exist now.		1				
Belle island would not be a good access. Harmful to the environment and the sailing program for children!			1		1	
The proposed Belle Isle Lagoon is an area where sail boats and sail bot training is based. Any proposal to add a launch in the area jeopardizes the safety of those craft by encouraging small power boats to congregate and congest the area where these sail craft must maneuver. The lagoon area is maintained well by the DYC in an attempt to ensure the safety and space of these sail craft. An addition of a boat launch to this area is unsafe and directly threatens the historic DYC's operation and layout.			1		1	
A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	
away from the DYC			1		1	
Belle Isle is already congested enough a boat ramp would be a very bad idea.			1		1	
A new boat launch on belle isle would be a bad idea. There is too much traffic on the island as it is, illegal parking is not enforced, and the buy a pass booth is a disaster. Adding a boat ramp anywhere on the island would just add to the already huge problem.			1		1	
Do not place a boat launch on belle isle by the DYC lagoo. Additional traffic at the lagoon will threaten wildlife and potentially damage private property			1		1	
Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats.			1		1	
A launch in the lagoon near DYC would have a negative impact to the lagoon resident boats and raise safety concerns for youth sailing programs conducted by DYC members for children. Additional traffic, noise and congestion would negatively impact safety of all boat traffic in the lagoon.			1		1	
Belle isle is the worst idea, traffic and congestion is horrible, why do we need to put access on an island? I'd rather launch from main land and boat to Belle Isle...that place doesn't need a ramp, too many kayakers in that area anyway.	1					
Congestion on and around Belle Isle and the water ways around it are a concern. Launch sites near active boating areas should not be done.			1		1	
I think a boat launch on Belle Isle would very bad for the Island			1		1	
Need more public access to the Detroit river		1				
Improvements at St.Jean launch would provide better access to the area of the Detroit River and Lake St. Clair which is underserved. I think Belle Isle is too congested, both entering the Park and near the beach ;cars with boat trailers would only add to the log jams unless the launch were very near the bridge such as at the Detroit Marine police site. Enhancements to the Millikan Marina might be a good possibility also.	1				1	
Clean up the river front our best of Detroit locations would help..	1					
Adding a ramp to Belle Isle would significantly change the environment. It is a wake free zone that is already difficult to enforce. Belle Isle is a place for SUP boarders, sailing, jr sailing programs and the nicest beach in the area. In addition the sailing programs in this area are what is left of a wonderful sport that has been crowded out by power boats.The additional ramps would endanger these programs. There are plenty of other places to put a ramp besides Belle Isle. There is a tuition free sailing program for University Prep students that could not function with a boat launch added off of Belle Isle.			1		1	
we need better marine patrol						

Putting a boat launch in the Belle Isle Lagoon is a bad idea. That lagoon is used be kayakers , paddleboarders , junior sailing students, and canoers. The added congestion caused by a boat ramp would have a negative impact on the lagoon, including pollution , noise, and the impact on junior sailors	1					
Needs to be where it doesn't interfere with other boating activities or docking			1			1
Please do not put a boat launch at the belle isle lagoon by the DYC.			1		1	
A boat launch on belle isle at the proposed site would probably make me move my boat from the dyc and put it somewhere else or get rid of it all together. I hope that doesn't happen. Right now it is peacefully parked in the lagoon area of the dyc.		1				
Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats.			1		1	
Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats.			1		1	
A boat launch ramp on the Belle Isle Lagoon would only add to the existing bottleneck for west bound traffic heading toward the beach and bridge. All wildlife would be impacted in the Belle Isle Lagoon including white swans, mallard ducks, other birds, muskrats, fish and other aquatic animals. Pollution from exhaust in the water, noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon.			1		1	
Improve the quality of current boat launches rather than adding new ones. I frequent Belle Isle and it is already too congested to the point that I don't go there on the weekends sometimes. A boat launch would be a nightmare			1		1	
Belle Isle should NOT be considered. Traffic is already terrible on many weekends. Adding, possibly, dozens of trucks with boat trailers to the congestion that occurs along the beach area on nice days is asking for trouble.			1		1	
More transit docks						
We don't need a launch on Belle Isle. Traffic congestion is already a problem. Having cars pulling boat trailers would make it more dangerous.			1		1	
A boat launch ramp on the Belle Isle Lagoon would only add to the existing bottleneck for west bound traffic heading toward the beach and bridge.			1		1	
A boat launch ramp on the Belle Isle Lagoon would only add to the existing bottleneck for west bound traffic heading toward the beach and bridge.			1		1	
Not interested inn a boat launch on Belle Isle. Already too congested on the island. The lagoon are is too small to safely handle the launching of additional watercraft. Would create an unsafe environment for sailboarders and kayakers.			1		1	
What is the utilization of the existing boat ramps? Why is more needed? Why not have the cut near lakeside drive as an option? Parking could be close and cars and trailers would not have to cross a street (safety item for the cars and trailers and well as traffic on Lakeside and Riverbank roads.		1				
Would like place to store a kayak	1					1
Belle Isle is getting better but I would never want to put up with the congestion of traffic before/after launching my boat.			1		1	
Anywhere but Belle Isle!						
Boat launches need to have significant parking and access for trailers that don't impact flow of traffic. Belle Isle would be very difficult due to the regular closing and changing of traffic patterns that already restrict and close access to the island regularly throughout the summer. In addition, the lagoon of Belle Isle is a site for many nonmotorized boats, such as my son's dingy sailboat and introducing regular launches at that site could potentially endanger the kids sailing in the Belle Isle lagoon. A site that has significan non-recreational land nearby for parking along the mouth of the Detroit River that allows access to both Lake St. Clair and the Detroit River would be best (ie-St. Jean, GrayHaven, Alter)			1		1	
Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats. Pollution from exhaust in the water, noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon.			1		1	
No need for additional ramps - just keep ones that are already in service open/functioning		1		1		
Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats.			1		1	
PLEASE DO NOT PUT A LAUNCH ON BELLE ISLE IT IS TOO CONGESTED ALREADY			1		1	
You did not include stand up paddle board in your list of watercraft. You should; there's a huge community of paddle boarders on the island.						
Not applicable						
No need for any more		1				
We don't launch on the river, however it would be nice to have a dinghy dock or other short term mooring						

Impact on DYC noise, pollution, traffic. erosion, generally not acceptable in that location.			1		1	
Don't add one to Belle Isle Park. Too congested already, and there are plenty of access options			1		1	
No additional boat access on Belle Isle.			1		1	
No need for a boat launch near Belle Isle there is enough activity with the beach and picnic areas.			1		1	
None needed. Fine the way it is		1				
Should be where there is a lot of room with little chance of crowding for safety purposes. Also should be where boat wakes, petroleum polution, etc. can be dispursed without causing problems for other boats/sailors!			1			
As a result of current boat traffic on the river north of the Belle Isle bridge, there is no need for additional boat launches on the Detroit River.			1		1	
The local area is already choked by traffic - it can sustain no more.		1				
Please do not have a boat launch on the Belle Isle lagoon next to the DYC.			1		1	
I've heard one of the proposals is to add a launch area on Belle Isle the lagoon next to DYC. I'm not in favor of this location for several reasons: There is already too much traffic congestion on Riverbank Rd due to beach goers, there would be too much boat traffic given all of the DYC boats using the lagoon, security risk for DYC boats, increased pollution/noise for DYC, added slow moving trailer traffic on Belle Isle making it more difficult to get on the island, and there are many other Detroit River locations on the mainland.			1		1	
Avoid Belle Isle. It's not a suitable site.			1		1	
Could we partner with a club on the Detroit side of the River?			1		1	
I am extremely worried that placing a new boat launch on Belle Isle is even an option. As the beach are gains popularity, placing a launch so close to swimmers is dangerous. Perhaps if the launch was placed near the defunct Boat Club or on the other side of the bridge near the Harbor Master facility ~ that way security would be available.			1		1	
A boat launch on the Detroit yacht Club lagoon on Belle Isle threatens the safety of the kayakers, paddleboarders, and dinghy sailors that use the lagoon. the lagoon is narrow and cannot safely accomodate a public boat launch, The DYC sponsors a junior sailing program in the summer for its members as well as for Detroit Public School students (at no charge). The programs may have to be cancelled due to additional power boat traffic at the launch site.			1		1	
More sites a needed.	1					
A public boat launch in the lagoon would make it unsafe. If there are adverse winds we need the entire width of the lagoon to disembark and turn outbound, and the same upon return There would be collisions, boats aground and rage.			1		1	
Need more hand powered boat launches.	1					1
It is safer for non-powered boats to launch away from powered boats, preferably in a no-wake zone. In Ecorse you can launch between the fences near the old Ecorse rowing building, but it's full of debris including a submerged sign post which can be dangerous depending on water depth. A public launch on Ecorse Creek or some other sheltered area (such as near Grandport Diner) would be ideal for anyone wishing to paddle around the islands downriver.	1					
I often kayak solo. But the launches are so far from parking I physically cannot carry my boat from the car to the launch. I've had to ask strangers for help and as a young woman that makes me feel at risk.	1					
Belle Isle is already heavily used and periodically closed due to overuse. Adding a launch ramp there would only exacerbate the situation, adding congestion in both vehicle traffic and water traffic.			1		1	
More boat launches would have a severely negative impact on the Detroit river near belle island		1				
Belle Isle does not need a boat launch on the lagoon across from DYC.						
Belle Isle is not appropriate for a boat launch. It is already congested enough			1		1	
Don't congest Belle Isle any further with a boat launch			1		1	
I am firmly against using Belle Isle as an access point. The island is already too crowded, traffic too heavy and entry a pain! Additionally, what impact will this have on wildlife should a Belle Isle location be considered?			1		1	
A boat launch ramp on the Belle Isle Lagoon would only add to the existing bottleneck for west bound traffic heading toward the beach and bridge. Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats. Pollution from exhaust in the water, noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. All wildlife would be impacted in the Belle Isle Lagoon including white swans, mallard ducks, other birds, muskrats, fish and other aquatic animals. A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	
Putting a power boat launch across from the DYC would endanger us kayakers			1		1	
Do not want launch site in Lagoon at DYC			1		1	

Adding amenities such as parking and restrooms to existing boat launches should take priority over adding new ones. Traffic is a huge consideration. Launches should be located away from swimming areas, such as the Belle Isle Beach. Consideration should be given to current land use such as swimming, boating classes like the free sailing class offered to underpriveleged children by the Detroit Yacht Club prior to adding a launch that will add to congestion.			1		1	
I do not believe a boat launch ramp on Belle Isle is a good idea. I strongly oppose the idea			1		1	
need security at parking lot			1			
I have heard there may be a desire to put a launch on Belle Isle. That would be a horrible idea to have that island inundated with boat trailers			1		1	
I do not believe more sights are needed		1				
no need for more powerboat launch sites. improve sites for canoe and kayak launch		1				
Not on Belle Isle. Please!			1		1	
A boat launch ramp on the Belle Isle Lagoon would only add to the existing bottleneck for west bound traffic heading toward the beach and bridge. Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats. Pollution from exhaust in the water, noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. All wildlife would be impacted in the Belle Isle Lagoon including white swans, mallard ducks, other birds, muskrats, fish and other aquatic animals. A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the			1		1	
It must be a safe launch site. Not in a congested area where accidents with other boats a likely to happen			1			
I oppose putting in a new boat launch on Belle Isle across from the Detroit Yacht Club lagoon. We already have trouble with wake / noise / unsafe speeds from motorized vessels. A new launch area here would contribute to these problems significantly and add to congestion at an already busy spot.			1		1	
a boat launch opposite the lagoon on Belle Isle would negatively impact the tranquillity of the area			1		1	
I believe that updating and upgrading the many boat launches that are already in please is money better spent then adding more launches.		1				
Fine as is. Do not add to Belle Isle. Already congested enough.		1				
I have never had an issue with access or conditions of the ramps. 9 mile being my primary		1				
A place that does not currently have heavy boat or car traffic would be ideal.	1					
Please do not build a launch on Belle Islr. The last thing the traffic on Belle isle needs is boat trailers. The island also does not need more boat traffic on the Detroit side. This area already has numerous violators of the no wake law, a law that is not being enforced.			1		1	
The proposal of an internal launch on Belle Isle is a disruption to the flow of traffic and surrounding DYC members and facilities			1		1	
Litter, bottles, trash, spillage of fuel and oils, safety, untrained boaters, lack of respect for others, use of bad language around children, ect.		1				
Belle Isle would not be good place for a boat launch			1		1	
• A boat launch ramp on the Belle Isle Lagoon would only add to the existing bottleneck for west bound traffic heading toward the beach and bridge.			1		1	
Please do not add a boat launch ramp near the DYC lagoon, not only is traffic already a problem from the beach but the lagoon area is a sailboat only dockage space including for special needs sailing programs, junior and adult sailing. Power boat launch ramp in this area would be a safety concern.			1		1	
Belle Isle would be a terrible place for a public access for boats.			1		1	
Pollution from exhaust in the water, noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon.			1		1	
A boat launch ramp on the Belle Isle Lagoon would only add to the existing bottleneck for west bound traffic heading toward the beach and bridge.			1		1	
Belle Isle, does not need a boat launch or anymore PARKING LOTS. I would suggest putting in a small dock but NO BOAT LAUNCH!			1		1	
There are plenty of existing sites so I don't see a need for more.		1				
There should not be any access on Belle Isle, the currents are too dangerous and people don't understand how to dock or manuver in these waters. Belle is to congested to have people towing boats on trailers and parking and coming in and out of the channel waterways. You would not have enough space to facilitate a launch site on Belle Isle.			1		1	

• A boat launch ramp on the Belle Isle Lagoon would only add to the existing bottleneck for west bound traffic heading toward the beach and bridge. • Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats. • Pollution from exhaust in the water, noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. • All wildlife would be impacted in the Belle Isle Lagoon including white swans, mallard ducks, other birds, muskrats, fish and other aquatic animals. • A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp. Also, there are already 3 detroit river access sites very close together on the mainland. That should be sufficient. placing a launch on Belle Isle will result inn significantly more congestion and parking will be a total nightmare.			1		1	
A boat launch ramp on the Belle Isle Lagoon would only add to the existing bottleneck for west bound traffic heading toward the beach and bridge. Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats. Pollution from exhaust in the water, noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. All wildlife would be impacted in the Belle Isle Lagoon including white swans, mallard ducks, other birds, muskrats, fish and other aquatic animals. A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	
I suggest improving and expanding the St. Jean launch site as well as adding launch facilities to Erma Henderson Marina. Do not add facilities to Belle Isle. Traffic congestion is already very bad and it takes forever to get past the ticket booths unless you add it at the Detroit Harbor Master site.	1				1	
I did not like seeing Belle Isle as an option for additional boat launches. A Belle Isle launch would add unnecessary travel and congestion to the Island. The proposed location (the Lagoon area) would create more shore erosion than the Lagoon can handle. This spring an additional 18" of shoreline had receded. The Lagoon is a very narrow body of water and already gets plenty of traffic, from the Junior Sailors that use it all summer, to the Bicycle Boats and other leisure cruising boats that pass through the area and turn around. It gets very shallow and there is not much room for a paddle boarder to turn let alone additional traffic being present at the same time in front of the DYC bridge. Please consider all the other locations!			1		1	
A new boat launch is not needed on Belle Isle. DNR should cooperate with Detroit to improve St. Jean and other launches. Belle Isle is already too developed and denatured.			1		1	
A ramp in the belle isle lagoon would likely have a very negative impact on my dyc membership. Powerboaters are noisy, make wake, would cause a great disturbance, and generally degrade our belle isle experience. Boaters in he river unfamiliar with the wake restrictions between the belle isle bridge and the head of belle isle speed thru like they own the place. Same thing would happen in the lagoon. Serious security issues would also result. This is a poor idea. Somewhere on the Detroit shore would be far more accessible.			1		1	
A public boat launch on Belle Isle is a good idea. Directly in front of the Detroit Yacht Club is a bad idea. Boaters able to access all the amenities on Belle Isle benefits the DNR. In front of the Yacht Club lowers the value of the Yacht Club, lowering the value of Belle Isle. A boat launch on the south end of Belle Isle would reduce fuel costs for boaters as most water travel, recreate, and fish that side. Boaters would increase enjoyment on the south end as there wouldn't be a "no wake" zone reducing recreation time and wait in addition to public rest room access. There is also the golf course which would be negatively affected by noise reducing its' value to Belle Isle; the sailboats at DYC use this lagoon but are quite silent.			1		1	
I don't want any boat launches on Belle Isle. We already have the Grand Prix destroying it. The island needs to be preserved for nature. A boat launch would not serve the island.			1		1	
The area where you are considering a boat launch is a peaceful quiet area. Families are often seen picnicking across from the lagoon and people love to fish in the lagoon. A boat launch would be noisy and deplete the beauty of the lagoon area.						1

A boat launch ramp on the Belle Isle Lagoon would only add to the existing bottleneck for west bound traffic heading toward the beach and bridge. Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats. Pollution from exhaust in the water, noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. All wildlife would be impacted in the Belle Isle Lagoon including white swans, mallard ducks, other birds, muskrats, fish and other aquatic animals. A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	
Do not place site on Belle Isle. Will only add to traffic congestion and noise.			1		1	
Keeping Blue Isle non power and put a launch at St Jean which is under utilized.			1		1	
Boat does not require launch. Questions totally miss this option.		1				
Security of persons, unattended tow vehicles/trailers, etc.		1				
rumor has it you want to put a boat launch on belle isle.. i think this would be a huge. mistake for the congestion of traffic on and off the island. it's already over run with traffic and people all summer and weekends. its a place for nature and relaxation and its bad enough its over run with cars on the already worn roads and will only get worse with bar,truck and boat trailer traffic. also it would most like have to be on the detroit river side obviously which already has 2 pvt boat clubs where members pay money to belong and enjoy those benefits. public boaters would intrude on the priviledge and cause issues with the pvt club boaters and the congestion would financially impact these clubs which are just beginning to rebuild themselves after all the years of the island decay caused by a suffering city. which is on the mend as is the island. there are plenty of other boat launch areas on the city side that could be used and made better to accommodate the detroit river boaters. please do not ruin belle isle by adding a public launch!!!! please!!			1		1	
Why would you ever think of putting a launch on Belle Island? Crazy! Long drive to take your boat into more congestion. Not to mention what it would do to the wildlife on the island. What are you thinking!			1		1	
Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats			1		1	
Any boat launch proposal should not harm another organization. A boat launch across from the DYC is not a good location		1				
Boat access should be at Miliken State Park or the current launch next to the old DTE site			1		1	
Care must be taken to prevent clogging the river with too many boats, particularly inexperienced boaters who are dangerous to swimmers, kayakers and fishemen. Adding new boat launches would add pollution to the river and surrounding natural resources. If you must add another launch, console it to be for kayaks and other non- polluting watercraft.		1				
There are numerous existing boat launch sites on Detroit River. Belle Isle should not be one of them. The island is not large enough to sustain the traffic.		1				
Don't use narrow lagoon by DYC--would be way too much activity in a narrow area with too great of activity.			1		1	
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A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	
Absolutely no power boat launch on Belle Isle please. Boats on trailers on the Douglas McAurthur bridge is an absolutely nightmare. Traffic is already bad as is.			1		1	
A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	
Please do not put a boat launch by the DYC, it will have a large negative impact on the area			1		1	
Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats.			1		1	
Construction of a boat ramp on Belle Isle would degrade the park-like nature of the land, necessitating a large parking lot to be constructed, adding to the already over-crowded conditions which occur on many week-ends and holidays during boating season. Placing a ramp near the Belle Isle Lagoon would put power boaters in close proximity to the beach, where many families with small children regularly swim and play in the shallow waters, thus endangering many in the water. The presence of power boats in the lagoon would also degrade the environment where many species of birds and aquatic animals find their homes. In addition, the presence of such a ramp in the Lagoon would likely preclude continuance of the DYC's tuition-free sailing program for school children of Detroit, erasing a very successful program which has benefited many in the community. Additionally, the no-wake policy on that section of the Detroit River would not be ideal for trailered boat owners, who would be far removed from portions of the water where their craft could more likely be used in the ways we see them motoring in the area. In summary, Belle Isle is a non-ideal location for a new launch ramp. Thank you, Thomas W. Filardo, M.D. Chief Lexicographer and New Terms Editor, Stedman's Medical Dictionary Director, Clinical Research, Ethicon Endo-Surgery, Inc. (Retired)			1		1	
There is sufficient boating launches in the area.		1				
Greater access to the Detroit River for non motorized craft. Hard to launch with fishing boats talking up parking and going too fast in the Detroit River no wake zone.		1				
I keep a boat at the Belle Isle lagoon and there is already too much transient traffic in the closed end Lagoon. Site seers on jet skis and in power boats throw wakes that cause havoc on the moored sailboats. Consider what it would be like on a summer evening when a number of sailboats are leaving the Lagoon for a regatta and fisherman are trying to launch or retrieve boats. There is simply not enough room.			1		1	
A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	
I think we need more access to the water for non motorized watercraft-kayaks ,paddle boards etc.	1					
A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	
My son a dps student participates in this program it's a tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	

Adding a boating access site to Belle Isle Island would add congestion to an already congested site, particularly if it is added on the north side of the island. Parking there is already almost impossible and to add vehicles with trailers would make the area unpassable. A tuition free sail training program for Detroit school children is held in the Belle Isle Lagoon each year by the Detroit Yacht Club. The program teaches sailing skills and builds character and teamwork. Locating a boat launch ramp directly across the narrow channel from the dock for the small non powered sail training boats would put the school children at risk and likely mean the end of this program. The danger is very real for a dinghy sized sailboat to be hit by a power boat resulting in injury to children. Novice sailors in the adult sail training program also would be placed at risk due to the potential for collision with the outboard powered boats from the launch ramp.			1		1	
I have personally found boat launch access to the Detroit River to be quite easy. I have never had a problem launching my 17 foot powerboat. I do not think the Lagoon on Belle Isle would be a good site for a number of reasons. Fist off it would. Increase trailed boat traffic on the island which is already severely congested(without trailer boat traffic). The Lagoon is full of sailboats, kayaks and paddle boards. Having motor boats launch there creates a very high level of traffic and potential wake, which is dangerous to all of those non motorized craft. Lastly, I feel if I hasd a sailboat moored in the Lagoon that it would create a business and wake that I would find very unpleasant. Belle Isle is pretty big and it seems to me that I would put a boat ramp onwards the south side of the island, maybe near the police area south of the bridge. There is already an acumdqnce of parking there and with police presence nearby, wake rules are usually obeyed. Look at the large launc at the opening of the Clinton River to Lake St. Clair. It is a very nice site that works very well.			1		1	
There is plenty of access to boat launches, there is no need for more.		1				
Plenty of facilities in the area, no need for additional access sites. Belle Isle would be the worst site, too congested with traffic. MSP had to shut down access to the island this summer, creating another access point would add to the congestion problem.			1		1	
• Significant noise and wakes hitting the shore line in the confined water of the Belle Isle Lagoon would result from launching and retrieving outboard powered boats in the Lagoon. This would negatively impact boats of all sizes docked in the Lagoon as well as all kayakers, sailboarders, dinghies, and small non powered sail training boats.			1		1	
Don’t even think about putting a launch on Belle Isle. That is one of the last bits of relatively quiet waterfront on the river.			1		1	
A boat launch ramp on the Belle Isle Lagoon would only add to the existing bottleneck for west bound traffic heading toward the beach and bridge.			1		1	
Belle Isle needs to steer clear of a boat trailer launch. While the Island is spacious and beautiful, a boat launch would change the character of the island.			1		1	
Any boat launch site on Belle Isle Park would cause more traffic congestion and safety concerns to general park users.			1		1	
There would be a concern of having one on the lagoon of the Detroit Yacht Club. Dingy's, kayaks, & children's sailing classes take place there giving them a protected area to learn. The lagoon area is not big enough to accommodate boats going in and out without conflicting with these smaller boat activies that are used by novice boaters.			1		1	
Current small boat launchers are sufficient with maybe some upgrades needed. A boat launch on belle isle is not needed. I wouldn't ask that ALL of the committee try to leave the island at 9pm on a weekend. The current progress on belle isle is terrific and should have continued focus to finish existing projects instead of adding more. The first main cabana for example on central. end		1				
Terrible idea. The traffic on the island would be far worse. Keep the space for people and cars they need to travel to the island. But we would never get around the island with a line-up of boats. Absolutely unnecessary. Moreover, it would further pollute the water streaming directly to the beach (assuming the planned location is above the beach). Already very crowded, and boat launching would create chaos.			1		1	
Having a boat launch on Belle isle, would not only be a detriment to the beach goers, and park users but also to the wildlife and ecosystem of the island. Please please please please do not put a boat launch on the island.			1		1	
There needs not be any boat launch on Belle Isle, there is already enough congestion and enough accesible boat launches available in Detroit			1		1	
Adding a boat ramp to the Belle Isle Lagoon would make traffic even worse drivng around the island to the beach. It would also make the lagoon difficult for the current sailors, kayakers, and paddle boarders to use.			1		1	
Anywhere other than belle isle, too much congestion already			1		1	
Do not put launch on belle isle. Traffic would be awful			1		1	
To little parking at most ramps						
updated lauches & better security						
Security is a big issue for me.						
There simply are not enough quality boating access sites on the river or the southern half of Lake St. Clair. There are too many residents-only sites that restrict non-residents. A site between the river mouth and 11 Mile would be extremely helpful. The cutoff ramp is too congested on the weekends to bother with which requires driving all the way up to Harley Ensign.	1				1	

Alter road launch is NOTORIOUS for being robbed or possibly shot as its a bad area with dead end road with vacant land around. I have multiple friends that will only fish alter road launch if they have a gun on them. I met a person that had truck and trailer stolen from there... Alter road launch needs security. I quit using that launch as ive been watched by people there that didnt look to friendly. Personally i think I've been lucky. Unfortunately I cant fish upper river often now as I have to launch way farther south now and the fishing is great on upper all year....						
A safe, secure mid-river DNR or Metro Parks launch would be great!	1					
We need something safe and where we can launch tournaments						
would love to see one on Belle Isle	1			1		
Better access, security and parking, North, Middle and South						
I would like a safe fishing tournament friendly ramp with lots of parking on Belle Isle.	1			1		
More parking and better security please.						
Need more and secure access closer to the head of the river/ South end of Lake St Clair	1				1	
There is a lack of piece of mind then when I launch anywhere on St. Clair and the Detroit river that my tow vehicle or trailer will be there when I return. Also sometimes I will bring a boat that will not be used while I fish with someone else and I would worry the entire time that the boat might be gone when I return.						
Belle Isle would be one of the safer areas to launch.	1			1		
We need a good cost effective state ramp. All ramps near the north end and st Clair are private and expensive	1				1	
please Install a tournament friendly launch on Belle Isle. include user friendly parking, and enough ramps to facilitate a fast load and unload for 100 plus boat tournaments finally, please do not have your contractors use survey monkey, as they are a supporter of HSUS a anti fishing and hunting organization..	1			1		
Need more DNR Access Sites/Boat launches closer to 9 mile and the mouth of the Detroit River.						
Belle Isle would make for an awesome launch site! The opportunities to showcase Detroit are limitless	1			1		
There needs to be a DNR ramp on the river, paying to launch a boat on the river everytime when i can go to inland lake with my 1 time payment for my rec pass. There no dnr ramp in the middle, the cities control the ramps and only do the bare minimum.r	1					
Need a great boat ramp to hold boating and fish tourments..	1					
Better bathrooms more security parking						
Belle river site would be nice. Not sure why blossom heath was in the prior page, but I assumed the intent would be to make it public versus SCS residents only. If that is not the intent, I would have selected belle isle.	1			1		
Security and lighting is key at public ramps						
Security would be very nice						
Please install a boat launch on Bell Isle.	1			1		
As a major waterway and border crossing, agencies covering the Detroit River should continue to monitor boating traffic and enforce regulations. They do a great job!						
More need visibility public doesn't know						
Not enough	1					
There is no public access to lake st clair between the crocker launch and 9 mile. Any remedy to this would be appreciated.	1					
We own a vintage 47ft power boat and are seasonal boaters in Detroit. More security at local marinas and police patrol to control speeding vessels on the river would be greatly appreciated.	1					
need additional launch sites	1					
Security is a big deal. The ramps tend be gathering places for undesirables						
Not Applicable to me: sailboat with fixed keel and an inflatable (dinghy) tender.						
There should be a downtown marina on the riverfront between the Joe and Cobo where folks can boat to downtown, park, and enjoy a night out.	1				1	
Do not put any type of launch or access on Riverbank Road anywhere near the location of the old kayak ramp that was finally removed. This will create an adverse effect on the water flow which will impact the cleanliness of the water and ultimately impact the clean and safe use of the beach.		1				
9 mile in terrible condition.						
Security is priority to boat launching and fun.						
there has been good improvements in the last 25 years. please continue!						
Need lighting on the main canals leading in and out to the river						
Belle Isle needs a launch - near St Clair and on some of the greatest spring walleye fishing in the USA.	1			1		
Should have more parking and security						

I will not launch at St. Jeans. It is completely unsafe and untrustworthy. Tires get slashed. Windows get broken. Things get stolen from vehicles. Strangers show up and try to collect money claiming they are ramp attendants. There is ZERO safe public access from the Lower Detroit River through the whole southern half of Lake St. Clair. These are huge waters. A safe, quality boating access site on Belle Ilse would be huge for fishing the Upper Detroit River and the lower half of Lake St. Clair. Michigan needs a quality ramp between Lake St. Clair and Lake Erie for all users including the large fishing tournaments that want to come here and pump huge economic value into Michigan along with the great deal of promotion these events provide for Michigan fishing. The demand for boating access is often above available parking for the St. Clair system. We need more access and we need safer access.	1				1	
Belle Isle Beach is a nice place to launch SUP and Kayaks, but is often very crowded and not sufficient parking at the adjacent lot. Other easy options off the Island with storage options would be ideal for smaller crafts like kayaks, SUPs and canoes.		1			1	
Need more room to maneuver boat inside launches. Some are too tight and not safe	1					
World class fishery needs appropriate access	1					
A boat launch is needed on Bell ile	1			1		
Why can't I pick more than one site that would best suit my needs? I didn't even know about 1/2 the sites on the map.						
Be nice to have more public docks to park and go downtown for dinner or games/events,casino's and the different things diwntown and belle island to dock and go hang out without having to worry about ur boat.	1				1	
Do NOT add more launches on Belle Isle. It does not need more cement and congestion.			1		1	
This is a stupid survey and a complete waste of DNR money. There is absolutely no need for another boat launch on the Detroit River. Installing a boat launch on Belle Isle will provide more proof that the DNR has no interest in protecting the park.		1				
Reasonable boat rentals would be marvelous. Can't afford to keep one						
The concept of adding a boat launch on Belle Isle is a terrible idea that will add congestion, take awy from the beauty of the island, and waste resources that can be put to much better use improving the other amenities on the island. There are more than enough existing boat lauch sites on the river already.		1				
Maybe some type of boat parking near downtown so you can get off the boat for festivities downtown	1				1	
Don't boat on Detroit river		1				
I would like to see a public harbor on Belle Isle, perhaps similar to Millikin State Park downtown	1			1		
There are locations that were closed after 911 and have not reopened since. Please consider reopening those.		1				
More parking for better ramp flow during busy spring season						
There needs to be DNR access sites. My recreational passport does me no good on the Detroit River.	1					
I've not had many issues when launching onto the Detroit River from the Wyandotte ramps		1				
As far north as possible without having to cross lake st Clair to get on the river	1				1	
I have no comments regarding boating access sites.						
The southern end of Lake st clair has very limmited access st jeans or 9 mile being the only ramps if you own a small craft it makes it almost impossible adding a launch to bell isle would be the answer to solving these issue. It would take a long ride from the mile roads and shrink it down to maybe 5 or 10 minutes making it a safer ride for smaller boats.	1				1	
I have a 33 ft boat with 10 ft beam and there is no where around the Alter area to launch we have to go to Monroe or Metro Beach launch	1					1
I keep my boat in La Salle , Ontario						
We need more launch sites on the detroit river	1					
plentiful public access is always good	1					
The northern part of the river needs more secure access. Belle isle launch would be ideal.	1			1		
Belle Island would be a great site for a launch site for major tournaments in the area! Makes going to Erie or St. Clair a easy option!	1			1		
I think there's enough		1				
I consider lake Erie metro park as a river launch site						
MAKE THE BOATERS PAY MORE NOT THE CAMPERS						
Too many places with only a couple dump in spots for the spring traffic. Widing ramp spac						
Would be great to see a launch at Belle Isle to be able to fish lower St Clair and reduce congestion during busy times in the spring	1			1		
Hard to find locations, unclear information about launch sites, unimproved launch sites and waterfront areas that could use some attention	1					
security at del ray and big launch at belle isle						
Certain areas need to have 1 way boating lanes, boating traffic becomes hazardous at times with boats crossing in each others path .						
Gibraltrar or area South of Elizabeth Park	1				1	
A state run launch would be out of site. Upper and lower river along with lower lake st.clair. I understand property is limited and that is why i believe Belle Isle would be awesome. Adding to the rebirth of the city, with the world class fishery that is right in downtown the city is missing out on a great opportunity to cash in on it..	1					
If the current facilities are too crowded there are areas along the river that were part of the Mclouth Syeel Corp.Maybe future marinas could be placed here wondereing						

The sites are either run down or in an unsafe area. I used to fish the Detroit River but almost got car jacked at St. Jeans. 9 mile is a mess. Crocker is as bad.						
Condition of many is poor. Better access to the upper Detroit river and south lake st Clair would be a big improvement	1				1	
how come there are no shore fishing opportunities in and around all of our great lakes this state sucks for the everyday shore fisherman too not evryone owns a boat	1					
Better placement of no wake zones						
The opportunity for input is appreciated. I feel that considering the amount of revenue the tri-county contributes, it gets short shrift relative to the rest of the state. A launch on Belle Isle would be appropriate. St. Jean where restrooms are nonexistent	1			1		
State park boat launches are maintained far better than private launch sites						
It seems that we are missing an access site that would make the northern end of the Detroit River more accessible. This would help draw in more tournaments as they would choose this access site to use because it is sheltered enough where the river can be fished in almost any weather, yet close enough so that St Clair may be fished.	1				1	
None at this time		1				
Need a new boat launch on the upper river with a lot of ramps and parking	1					1
We need a state run boat launch on the Detroit river.	1					
Save public access is needed for the south end of Lake St Clair and the upper Detroit River. The current access situation limits fishing oportunities.	1				1	
We need more boat ramps to handle the demand. The existing ramps are in dire need of repair.	1					1
A nice access point on the upper river would be great and I would use it a lot	1					1
Need a launch near where the river starts and stclair ends	1				1	
Our launch is elezibth park and always busy and parking is difficult at times	1					1
Please improve access for all types of boaters						
Too congested with no security and limited parking.	1					1
We need a good launch site around Belle Isle formaccess to the upper DETROIT River and Southern Lake St Clair						
More like The Erie Metro park type.						
A DNR launch anywhere on the upper/mid river so we can utilize our Rec Passes would be nice, maybe take over St Jean & Delray?						
I would like camping and boat launch on bell isle						
I have always enjoyed using the ramps on the Detroit River	1					1
It would be nice to have the boat house on belle isle be a city marina..	1			1		
There needs to be more access to upper river/lower lsc. Alter rd is really not an option. St jean is best but that is really only decent place. 9 mile is a joke	1				1	
More Secue access to the upper detroit river and lower lake st clair	1				1	
not enough of them- don't feel secure	1					
A launch on belisle would be great	1			1		
It's a headache every time launching down on the river	1					
Very limited public access between Harrison Township and Detroit river. Also around belle isle area	1			1		
The St. Jean site could be made into a world class facility. A safe, large, maintained access to the Upper Detroit River would greatly benefit several different groups. A world class facility with an entrance fee could maintain the access site and the additional funds could be used to improve the surrounding area, attracting new businesses and help with cleaning up the area. With several large bass and walleye tournaments using the facility could support a gas station, tackle store, and restaurants. A large scale renovation of the St. Jean launch or building one on Belle Isle would be very beneficial.	1				1	
Need access to Detroit river somewhere in the downtown area. Belle isle would be great!	1			1		
Please explore the idea to place a launch at Belle Isle. It would be the perfect spot. People wait hours at Alter Rd during the spring walleye run. Also, bass fishermen in the summer would definitely utilize the launch so they could fish the river and lake! Only feasible option right now is Alter Rd and a lot of people don't trust that launch in the summer.	1			1		
Too few safe launch sites available to the public south of Harrison Twp.	1					1
I live in Oakland county and drive down to Erie metro and drive the boat up river to fish or pleasure boat do to the lunches are not available on the north end of the river. This is due to security and also condition of boat ramps very poor. I'd love to see a bowl and access say put on Belle Isle or let the DNR by Saint Jean and put it back to once once was back in the day with good parking security and ramps on both sides	1			1		
Parking will not interfere with visitors of the parks.						
Hostile shore.						
Additonal Launches would be good, but please do not put one on Belle Isle or in Milliken State Park. These spaces are way too valuable for other uses. A boat launch and parking for boaters would ruin these places.	1					
It is crazy how little access there is through publicly own sites there is o. The Detroit River.	1					
A DNR boat launching site on Belle Isle would be a great addition.	1			1		
The rest rooms are in horrible condition and there is no security at the site. Also I believe the launch site could use some work.						
Any and all sites on the chart mirror would be helpful						
Not enough	1					1
Additional access to the Detroit river and southern lake st Clair would be highly beneficial.	1					

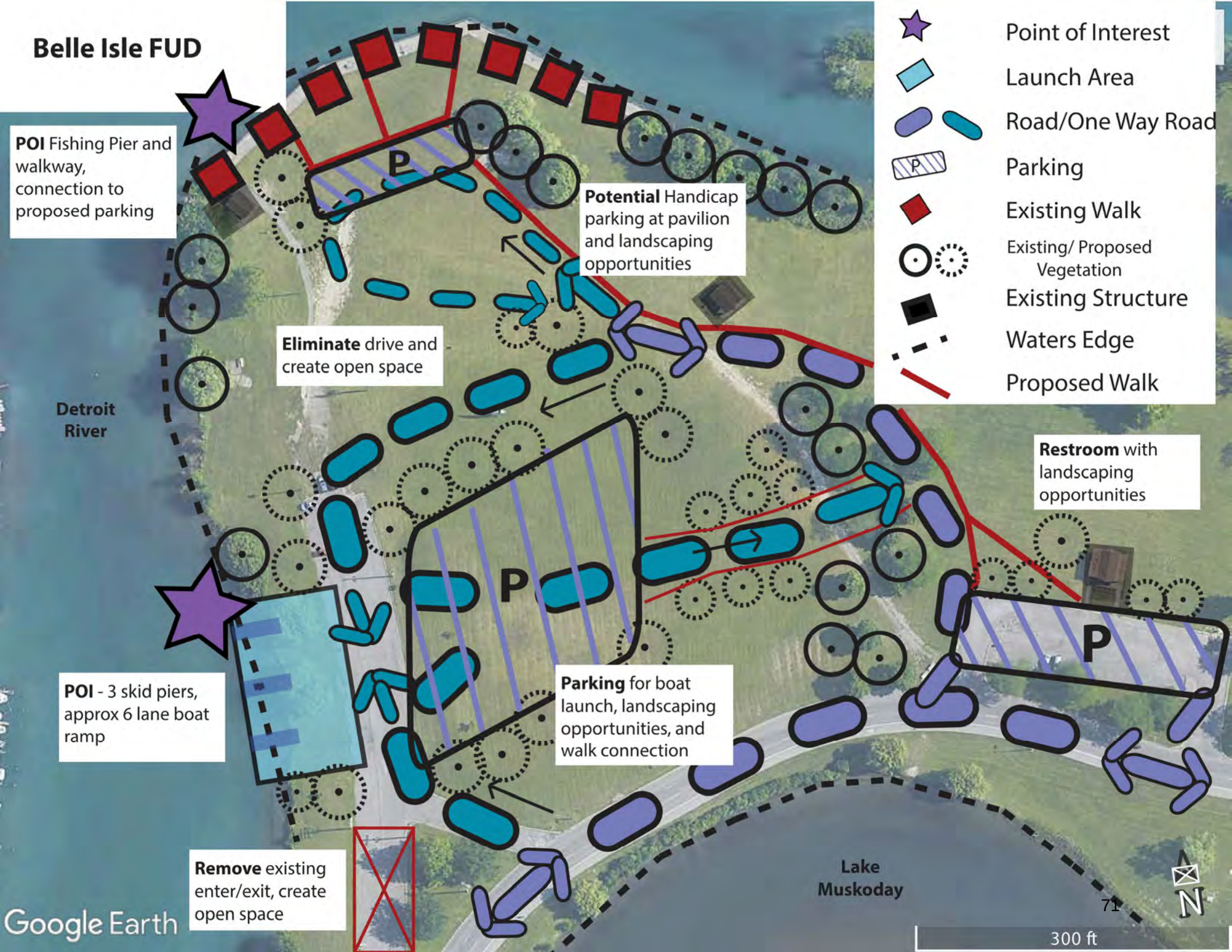
A bigger ramp with more docks would be great						
Please put something on belle isle	1			1		
Please add more between Detroit and Trenton.						
We need an Elizabeth park type launch in the upper river	1					
Along with new boat launch's we need to have security,lighting and launch's that make the Detroit River look safe and inviting to all who would use it!	1					
I rent a slip in April and may because it's so hard to get your boat on the water.						
need more access sites, boat launch near the old Riverside park near I-75	1				1	
It would be nice to have a safer place						
A fish cleaning station is what I would love to see more than anything.						
Belle Isle needs a boat launch there's lots of wasted space on Belle Isle	1			1		
The only legitimate option for launching is at St. Jean. On weekends in April and May it can take over an hour to launch with unrealiable security. I mainly fish weekdays so the traffic does not bother me so much expect when I try to get family out in weekends. Also, why not create a dnr launch so boaters are not charged $10 for each launch rather than a recreation passport or metroparks pass. With the way the fishery is now and the development of Detroit, I think it would only be in the States best interest to secure a site on the upper river for boaters/swimmers/kayakers to go. A thought that is often brought up between my fishing circle is why there is not a sizeable public launch on belle isle. Just a thought! Good luck.	1				1	
ramps are not run right no one helping boaters during the process of putting in or taking out and no parking at the ramps during spring walleye run						
It is not necessary for the location to be on Belle Isle but a secure boat launch large enough to handle a large number of vehicles with trailers and have additional vehicle without trailer parking but in limited number.			1		1	
Every weekend day during the walleye run launches are packed from top to bottom on the river. There are thousands of feet of unused shoreline, especially between Trenton and Wyandotte. Add a boat launch in that area. Everybody wins.	1				1	
Help Ecorse launch. It's a great launch just needs a $$$ for TLC						
They're worthless without security.						
Security of my vehicle and trailer is the most important thing to me while fishing in downtown Detroit currently there are no secure lots or ramps in the Detroit area.The ramp would also need to have adequate parking for 200+ rigs due to the heavy congestion that occurs during the spring while I run and white bass Ron also sure access would be	1					1
Belle Isle is a State run facility and would be best for our River Boating	1			1		
I would very much enjoy a DNR ramp on Belle Isle	1			1		
congested lack of adequate parking and unsafe parking areas						
We used to own a boat and enjoyed the river. Getting back out there kayaking would be fun but now that I'm thinking about it access to the river in a protected area would be best.	1					1
Extreme need for better boating access to the Detroit river.	1					
Need a state launch on belle isle.	1			1		
It would really be beneficial to have a boat launch on Belle Isle	1			1		
Belle Isle would allow for smaller boats to fish the upper river as well as the west shore of Lake St. Clair	1			1		
Urban kayaking launches and clean, secure boating options would be another draw to Detroit.						
If there was more boat launches it would spread out the people launching boats in the morning so that there was not a 2 hour wait time at 6 am in the morning.	1					1
We need safe boating access, our vehicles have been damaged at St. Jeans						
Upper Detroit River and southern Lake St Clair need more boating access sites! Remove the Grand Prix on Belle Isle and concentrate on water sports access and tourist destination.	1			1		
Add restrooms for use by boater without a head.						
I think a new boat launch at belle isle would offer great boating access to the detroit river.	1					1
There is no where near enough boat access on the north end of the Detroit River. A major boat launch on belle isle makes good sense.	1			1		
Please provide the public safe and accessible boating access to the upper Detroit river on Belle Ilse.	1			1		
Need a new public access ramp on southern LSC.						
There is a need for a larger boat launch on the north end of the Detroit river. The back side of belle isle would be perfect. You would move a lot of boat traffic away from the no wake side. Also this would give good access not only for spring walleye run but all summer the lack of good access to the southern Usa and Canada side of lake st Clair. Many organizations would probably like to hold tournaments out of a location on belle isle.	1			1		
Any added access point with clean and secure boat launches would be a great addition to the increase in the renewal of the city.						
Heard rumors a boat launch may go in on Belle Isle. I think it would be a big mistake. Lots more traffic and take away from the beauty of the island			1		1	
The abandoned park at the end of alter rd would be a spacous area for a new ramp, and with it well regulated and patroled it could really turn the whole neighorhood into a gem. The site would be ideal for spring fishing and smaller craft that cant make the run from the mike road launches to fish the south end of lake st claire.						
We need more access to the Det. river. World class fishing	1					1

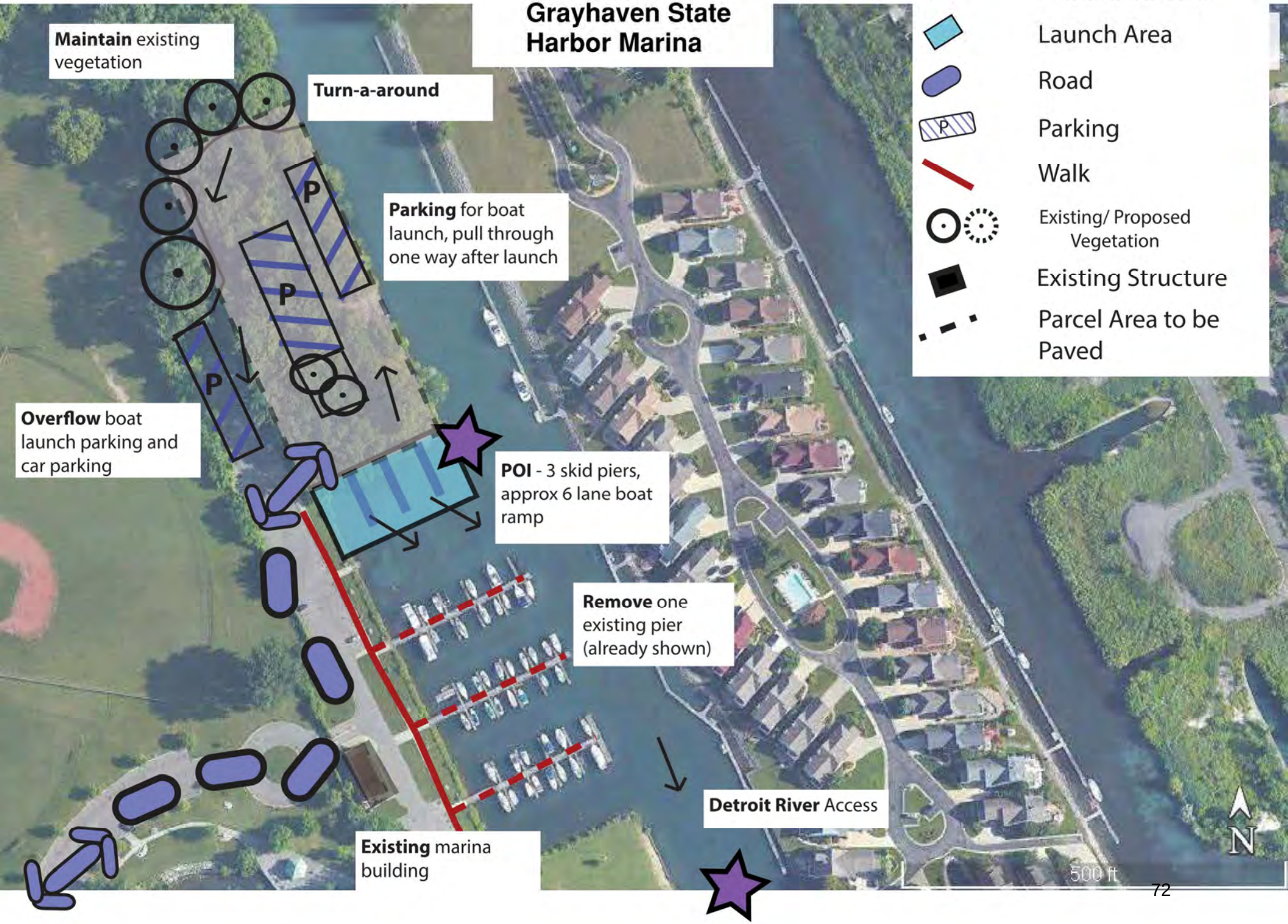
A boat launch is very much needed on the upper Detroit river. Yes, there are a 2 there now that are small and no security. A boat launch on Belle Isle would satisfy those concerns and also give us access to the southern part of Lake St. Clair. We have a state park on a river with no boat access. It just doesn't make sense. There must be a thousand boats on the river in April. There is usually at least 1 hour wait at 6 am to launch my boat. A Belle Isle boat launch will correct this. It will also bring pro and local fishing tournaments to the area. Cha Ching. The Detroit River and Lake St Clair are one of the best fisheries in the country. It is a destination spot for people on vacation who like to fish. Charge a fee, in time it will pay for itself or at least come close. Please build a boat launch on Belle Isle. It would Make Belle Isle Great Again.	1			1		
Current storage area near bridge						
Just need more launches. On Canadian side they are all over the place.	1					1
Need a safe and secure launch on the upper river...neither at Alter or St. Jean						
Would love to see a new/better launch with a more secure and lit up parking lot on the upper river	1					
Belle isle would be an awesome place for a new Detroit River launch on the upper river. Hopefully it comes to fruition	1			1		
N/A						
There needs to be additional access downriver near Erie Metropark and also upriver near Belle Isle. Erie Metropark is a good location, but they charge a ridiculous amount to use the launch-you have to pay for both your car and your boat-it is like $16!	1			1		
Access to the north end of the detropit river in spring is horrible	1					1
Safe launching facilities are sorely needed on the upper Detroit River. A boat launch on Belle Isle would help residents and visitors alike to more easily access not only the Detroit River, but the lower end of Lake St. Clair, where access is very limited.	1			1		
we also need access in st. clair shores areas						
No state run launches available.						
A well-kept, secure access site is sorely needed on Belle Isle. Alter Road and St. Jean ramps are in scary locations and poorly maintained.	1			1		
The docks are put in late, well after walleye fishermen start fishing the Detroit River. The docks are also pulled early each fall, before duck hunting season is closed. Both of these pose significant safety issues for boaters and completley eliminate the ability to use the Detroit River for people who boat alone (no dock, no way to launch and tie up alone). It's sad that the DNR is responsible for hunting and fishing, yet their actions limit the ability of sportsmen to use the resource.						
Someone I know has indicated that the Detroit Water Department has substantial size unused vacant property along the Detroit River which could possibly be open for negotiation.	1					1
Belle isle sounds like a possible place and to build a large one like the ramp in algonac. So there isn't so much overcrowding.	1			1		
Overall, there is a serious lack of launch facilities for the Detroit River and lower Lake St. Clair. In the Spring, the lines for D-River boat ramps can be 45 mins or more on each end of your trip. Putting one on Belle Isle would be nice, because it would not only give access to the D-River, but also to lower Lake St. Clair. As it is now, we have the "9-mile" ramp, which is probably named that for the distance you have to walk back to the ramp after you park your truck. On weekends, this causes the ramp to back-up so bad that it is unusable. On busy weekends, there should be a golf cart shuttle to bring people back to the ramp to speed up the process. They do that at Wheatley in CAN and it works great. That ramp is also very shallow, so that your front tires are in the water before the boat will float off. This is very dangerous in cold conditions. St. Jean is ok, but the hours are bad, and it closes too early in the season. Alter is horrible, too shallow, and no security. Blossom Heath is only for residents. Crocker is always messed up with sludge, and not usable most of the time. My suggestion is to raise the rec fee from $11 to $20 per year, which is still a huge bargain, and then use that money to upgrade the ramps for the D-River and LSC.	1				1	
Additional BAS's on the upper DR, especially in the Belle Isle/Alter Rd. area would only be a sizeable economic and social boom to the area. It doesn't take a 'rocket scientist" to realize and understand this unless you happen to be completely "myopic."	1				1	
We are in need of additional safe, secure boating access to lower Lake Saint Clair and the upper Detroit River.	1				1	
Enjoyed our visit to the Millikan Harbor and hope that this facility continues to be maintained	1				1	
a launching sticker for all sites would be nice.						
Belle isle has always needed a boat ramp	1			1		
Need more DNR launches south of crocker launch.						
I whould rent a pontoon if it were offered.						
Bel Ile boat launch	1			1		
I dont use the Detroit River. And do not use this water way.						
The Detroit River and southern Lake St Clair have enough boating access sites . Many of them are rarely full . St Jean is a good example. Belle isle boat access sites should be restricted to canoes and kayaks		1				
generally friendly						
Belle isle needs a boat launch	1			1		
we need more sites and improved sites	1					1
More are needed. Congestion and Parking are big problems.	1					1
would love a DNR launch near mouth of river						

Should no more than $10.00 to launch at any boat launch						
don't boat in southeast because of people, risk, so I go north						
just need better and more ramps,night time fishing,i am a handliner and need to be out late at night sometimes.	1					1
Few and far between						
Safety and security and more ramps	1					1
need a dnr launch on upper detroit river and lower lake st. clair	1				1	
eems like all the municipal boats ramps they are "letting go" in terms of upkeep. Now they are just a revenue source but they dont want to earn there money. Need to keep them clean and in good repair!						
24 Hr. access						
More DNR operates launches are desperately needed from Harrison Township all the way south to Ecorse	1				1	
Would be great if there were public slios/dock so you could moor there and spend time on the island.	1			1		
I feel that Belle Isle would be a perfect area to add a ramp.	1			1		
Oct 31st st Jean is closed limited hours during season						
It is a travesty that boat access to this incredible fishery is so poor.						
Put one on bell isle, man the sites to collect money, someone needed at sites on busy days to direct traffic at the docks	1			1		
a safer place to leave unattended vehicle and boat trailer. St Jeans and Alter Rd. are no longer on my list.						
Belle isle state launch is needed..	1			1		
After knowing guys who's trucks are being broken into security is a big problem. Please look into this. More launches are needed !!!!	1					1
Need one for kayaks and canoes only		1				
Many people I know want better access to southern ok st Clair and north Detroit river. Fishing sight seeing picnic and dockside restaurants	1				1	
More launch sites for the Detroit River as the current launches can be crowded.	1					1
Bathrooms at Elizabeth park need upgrade						
The Algonac Michigan boat launch needs improved restrooms. This is a busy launch and only two very rustic bathroom stalls. Talk to "Denny" he does a fabulous job maintaining boating launch safety when busy but can only do so much with the current restrooms. Would also like to see launch dates extended. Currently Work 1st to Dec 1st. Could launch March 1st and keep open until Jan 1st.						
We need new site north end of river	1					1
The only problem I have with our river is the over-patrolling and harassment from Border Patrol.						
A couple more would be great and making them secure.	1					1
i live on lake st clair i have a 41 foot sea ray i keep at my home,my family and i stayed at milliken state park for 2 nights in june and had a great time	1				1	
We need more access on the upper river. Half of St Jean was taken away in the early 90's.						
No known safe boat launches on the river						
there need to be beetter sits to get on the river						
I rarely go to the DR due to no state run launch						
Just need more security		1				
Eating facilities at or close to Milligan park would be benificial	1				1	
I boat primarily on Lake Huron and the St. Clair River.						
Wish there were more to launches that were close to Detroit restaurants	1				1	
No {State access sites South of Harrison Twp} Including the Detroit river		1				
Who cares about Detroit. Where are the waterway kayaking maps for northwest mi						
Generally they are ok. Could use more.						
The bathrooms at Elizabeth Park Marina are in great need of repair.						
It would be great to be able to visit Belle Isle by boat. No docking available.	1			1		
The launch sites at Wyondotte, Ballenger and down river are very inadequate and over crowded especially on Friday, Sat. and Sunday.	1					
I dont use the Detoit River at all. I use northern Macomb and southern St Clair Counties						
Ive been launching in the D river for over 30 years. The cost to launch boats in and around town is outrageous. If the DNR would have a ramp on BelleIsle, this would be great for local and National tournaments. And there is tons of space, especialling at the North end of the island by the old boat club thats shut down. Build it, and they will come to use it!!!	1			1		
I rarely launch a boat in Detroit River, launch in Lk St Clair and stay overnight in boat slip in Detroit						
I keep my boat in the water at a private club so do not use any boating access sites						
Would like to see more waterfront viewing.						
more slips @ Milliken Marina						
Don't use boat launch facilities, my boat is in the water in a private slip on Lake St. Clair						
need more overnite dockage along river						
bell isle boat launch would be nice	1			1		
Food trucks or entertainment accessible by boat....MOSTLY looking for downtown areas!!!						

I would love to see more boat-up entertainment options, such as boat-accessible restaurants along the downtown Detroit waterfront, and a marina in downtown Wyandotte. Detroit especially needs another public marina with transient slips for events such as concerts and sporting events. Milliken is great but it needs to be bigger now that people are coming back to downtown Detroit. I want places to stop for dinner by boat, or walk around and shop.	1				1	
Do not utilize the boating access sites because have a place on a lake. No need to go southeast for boating						
Elizabeth Park launch (Wayne County facility) needs rocks between river and launch marked better.						
No security at the Delray boat launch and Ballenger the cost is prohibitive for the working man.						
needs to be better/more	1					1
I really would NOT like to see additional launches for motorized boat on Belle Isle--St Jean is close enough, and Belle Isle parking should be reserved for people who are actually spending time on Belle Isle.						
Please more enforcement at launches						
There is a lack of safe and secure boat launches on the Detroit River, especially from mid-river (Riverside Park) up to Lake St Clair. Any new boat launches should include amenities for anglers, including a fish cleaning station.	1					1
Congestion is one thing. People being stupid and the lack of a decent bathroom						
I kayak. I typically launch from Water's edge or Sunrise Park on Grosse Ile or Pine street dock in Wyandotte. None of them were listed as options in this survey. Kayak landing points between Belle Isle and Grosse Ile would be helpful as most of the river is hard sea wall and not accessible for kayaks. Kayaks launch best from grassy or sandy shoreline, not concrete boat ramps (like in Lake Erie Metropark).	1			1		
Parking issues. Need more spots to park. Thank you						
I have nothing to do with launches downstate						
The launch at riverside park should be improved and reopened, that was a GREAT PLACE WHEN IT WAS OPEN!!!!	1				1	
We really don't boat much on the D River, most boating is on St C R.						
A public marina on Belle Isle would be wonderful.	1			1		
There should be more boat slips available to TRANSIENTS at the Milliken marina. It's difficult for groups to book there, as most slips have been given to seasonals. Each year a group of a dozen boats goes from our Club with another dozen unable to get in. Each boat spends about $700 in downtown Detroit in one weekend.						
I would like to see a public launch somewhere on the river downtown. Belle isle would be a good place as there is some open land that could accommodate parking and a launch. I would like to get out on the river more but am limited with where I can launch.	1			1		
I would feel safe using a DNR boat launch at Belle Isle because it is state park and is actively patrolled by law enforcement	1			1		
small craft... kayak; canoe; row boat.... shallow water						
Belle Isle could have more and you could do more DNR sites along the river	1			1		
some sites need better management						
I usually put my kayak in at Owen Park in Detroit. I would love to have a formal launch site there to do so.	1					1
not enough ramps	1					1
Need more shallow water launches for canoes, kayaks, and hobie cat style sailboats	1					1
Lake Erie Metropark						
Make a campground at Belle Isle						
Boat launch most often used--Lake Erie Metro Park						
Strongly opposed to boating access site on Belle Isle. We don't need more concrete or boat traffic coming onto the bridge to launch.			1		1	
Just to have more.	1					1
Very few options, and St Jean is 10.00ea launch	1					1
Need better on-site management						
More Marina's places to stay overnight with close access to food/restaurants etc						
Have received parking ticket for parking over night in state park when I have endorsement on license plate. Should be able to park there for free						
delete from analysis - test						
TOTALS	189	56	171	62	221	44
Open comments regarding boating access sites (boat launches) on the Detroit River:	Additional BAS Needed in the Detroit River	Additional BAS **Not** Needed in the Detroit River	Need for a BAS not Expressed	Belle Isle	Mainland	Location not specified
	34%	10%	31%	11%	40%	8%
Total open comment respondants	549					

APPENDIX E – FUNCTIONAL USE DIAGRAMS


Belle Isle FUD
POI Fishing Pier and walkway, connection to proposed parking
Potential Handicap parking at pavilion and landscaping opportunities
Eliminate drive and create open space
Detroit River
Restroom with landscaping opportunities
POI - 3 skid piers, approx 6 lane boat ramp
Parking for boat launch, landscaping opportunities, and walk connection
Remove existing enter/exit, create open space
Lake Muskoday
Point of Interest
Launch Area
Road/One Way Road
Parking
Existing Walk
Existing/ Proposed Vegetation
Existing Structure
Waters Edge
Proposed Walk
Google Earth
300 ft
N


Grayhaven State Harbor Marina
Maintain existing vegetation
Turn-a-around
Parking for boat launch, pull through one way after launch
Overflow boat launch parking and car parking
POI - 3 skid piers, approx 6 lane boat ramp
Remove one existing pier (already shown)
Detroit River Access
Existing marina building
Point of Interest
Launch Area
Road
Parking
Walk
Existing/ Proposed Vegetation
Existing Structure
Parcel Area to be Paved
P
N
500 ft

APPENDIX F – GRAYHAVEN STATE HARBOR MARINA FEASIBLITY STUDY

GRAYHAVEN MARINA

FEASIBILITY STUDY

DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET

File No. 751/08295.MNB

Index No. 59010

For

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT

SEPTEMBER 2010

HUBBELL, ROTH & CLARK, INC.
CONSULTING ENGINEERS
555 HULET DRIVE
BLOOMFIELD HILLS, MICHIGAN 48302
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INTRODUCTION

The Grayhaven Marina is located on the Detroit River that provides access to Lake St. Clair to the northeast and Lake Erie to the south. The Detroit River is a major commercial waterway and the Tri-County area, Wayne Oakland and Macomb, are home to 212,440 recreational boaters as of June 2010 which is approximately 22.7% of the registered boats in Michigan. There are a number of other marinas and boating access sites in the general area that currently service the marine enthusiasts in Southeast Michigan which this report will discuss later.

The existing marina site is approximately 11.1 acres with 4 floating main piers with attached finger docks for access to the boats (see Fig. 1). The east edge of the marina is a deep water fairway with access directly to the Detroit River. Across this fairway is an upscale, relatively new residential community. The south border of the Marina is the Detroit River with excellent views of Belle Isle, Windsor and the Downtown Detroit skyline.

Each slip has electric and water service. The marina is fenced from the adjacent Maheras Memorial Park to the west and has a service building on the west side adjacent to the entrance. The building housed a marina office, a boater's room that had laundry facilities, a men's restroom and shower, a women's restroom and shower along with a utility/storage room. The building is currently boarded up and in need of repair.

The Grayhaven Marina has been closed for a number of years and The Michigan Department of Natural Resources and Environment (DNRE) has recently acquired the facility

SCOPE OF FEASIBILITY REPORT

The Grayhaven Marina Facility project's stated goal in the Request for Proposal and at subsequent meeting with Michigan Department of Technology, Management and Budget (DTMB) and DNRE is to "Evaluate the existing boarded up marina for potential use as a marina, a boating access site, or both." The DNRE is the client of the DTMB. The DNRE operates marinas and boating access sites throughout the State of Michigan.

Aerial View of Grayhaven Marina and Area **FIGURE 1**

This project is a market analysis of the viability of having the Grayhaven Marina renovated and put back into service or redirected for another use. The basis of the feasibility report will be an analysis of marinas and boating access sites within a reasonable distance of Grayhaven. The Report will look at what these other facilities have to offer and how Grayhaven can fulfill any unmet demand. Part of the analysis will be to evaluate Grayhaven's existing facilities and what it would cost to put them back into service in a condition that would be able to attract boaters. All of this data would then be used to make a determination as to the best possible use for the Grayhaven facility.

This report will look at the marinas and boating access sites that currently serve the upper Detroit River and lower Lake St. Clair area. The potential Grayhaven boater would come from this area and the report will analyze the various pros and cons of the marinas and boating access sites including Grayhaven.

STUDY AREA

The recreational boater marketing study has researched a number of marinas and boating access sites that represent the market in the Detroit Area. The marinas and boating access sites included in the study were the ones available to the general public without restriction. The Marinas in Grosse Pointe were not reviewed because they are restricted to residents only. Additionally there are several other marinas in the study area that were not considered because there is a membership or residency requirement, i.e. Detroit Yacht Club, Bay View Yacht Club, Riverfront Towers, Harbor Town and Grosse Pointe Yacht Club.

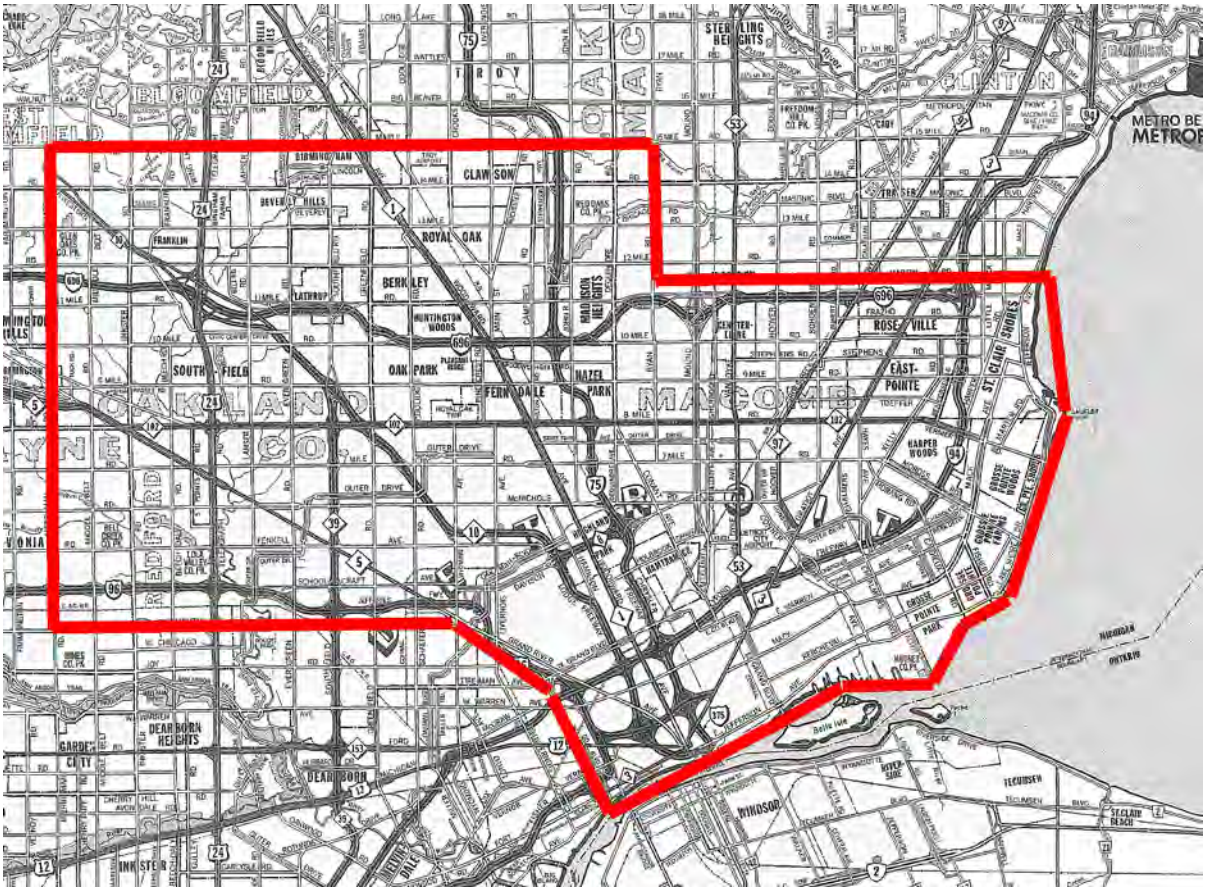


FIGURE 2 – STUDY AREA

The Study Area shown above represents the area that Grayhaven could draw customers from for slips or boating access. The area is comprised of the freeways starting at I-696 near Lake St. Clair running west to Ryan Road, then north to Maple Road, across to Orchard Lake Road, then south to Plymouth Road and following the south side of I-96 to the Ambassador Bridge, the shore line of the Detroit River and Lake St. Clair being the final boundary back to the point of beginning. This area was chosen by information regarding where a limited number of boaters in the Grayhaven area reside. The south and west portion were limited to the Ambassador Bridge area because of the industrial shore line of the Detroit River to the south to River Rouge. This provided a logical boundary between communities with access points to the south of the study area. The Detroit Area is fortunate to have great freeway access that allows boaters to go reasonably good distances in a short amount of time. Boaters to the west and south will tend to go downriver to Ecorse, Wyandotte, Trenton or Gibraltar to access the lower portion of the Detroit River and Lake Erie. Boaters to the north will use the

Metropolitan Parkway corridor to access the upper portion of Lake St. Clair, Anchor Bay and the St. Clair River.

EXISTING GRAYHAVEN FACILITY

Overall the existing marina is in fair to poor condition and will require extensive work to the facility to have it operational again.

East Face of the Existing Marina Building

Based on historical data, the Grayhaven Marina was built in the late 1970's and functioned until late 2002. It was operated by the City of Detroit Parks and Recreation Department.

Marina Building – The building is oriented north to south immediately inside the gate on the west fence line. The entrance is through Maheras Memorial Park and is a reasonably attractive way to access the marina. The building is fairly utilitarian with the marina office on the north end, a boater's room next toward the south. The next two rooms are the restroom/shower rooms for the men and women and at the south end of the building is the mechanical room and general storage with a large garage type door.

Damage Wall Board and Rotted Window Frames

The building appears to be sound from a structural standpoint as no evidence of wood rot or sagging roof areas were noted. The building's appearance is industrial with a metal siding over a wood face and the metal is dented and in need of repair. Although the building has the windows and doors boarded up, most of the glass at grade level was broken before the wood was put over the openings. Several of the window frames have some wood deterioration at the perimeter area. The floor in the Office and in the Boaters Room is a glued down tile and from the age of the building, it is recommended that this tile be tested for asbestos content. An Environmental Survey should be conducted on the entire building to determine if there are any potential environmental concerns. The roof is a shingle roof that appears to be in fair condition and there was no evidence of leakage within the building. The overall building needs an upgrade in its appearance to be more attractive to the prospective boater.

Existing Restroom Facilities

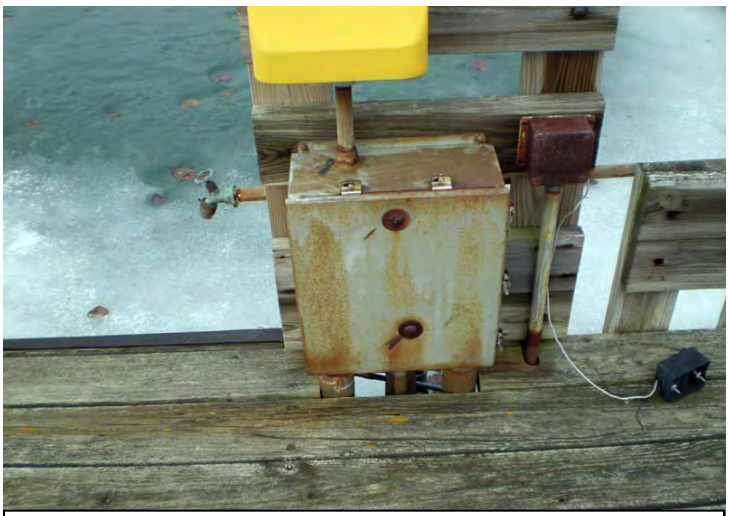
Two North Main Docks looking Northeast

The interior of the building in the restrooms/ shower areas is in good condition with some repairs needed. The lower seven foot of the wall surface is ceramic tile and the floors are painted concrete. The upper wall areas and ceiling are gypsum board and there will be some repair necessary to the gypsum board.

The building will need to be upgraded for accessibility to meet the current Federal and State requirements. Toilet compartment and showers are the two main items at issue along with the maneuvering clearances at the doors.

The building water and sewer condition is unknown but repairs to the water system are highly likely from water sitting in the lines and freezing. No water meter is present on the building and will need to be added for future use of the facilities. The heating systems for the building areas are at their life expectancy and should be replaced. The fact that the building has sat idle for eight years is another major detriment to the systems. The 24 KW, 208 V electric water heater should be replaced along with the electric heaters in each of the Restrooms, the furnace in the Office and the ducts and grilles should be cleaned.

Existing Main Dock



Existing Electrical Service Box

Docks – The floating docks at Grayhaven are in reasonable condition. There are 4 main docks extending east from the shore with finger docks on each side. The main piers are 7'-6" wide and the finger docks are 3'-0" wide. The individual slips are 30'-0" long and generally the beam has some variation but is over 15'-0" in the least dimension. The three northern docks have 10 slips per side for a total of 20 slips for each of the docks. The south pier acts as a service dock at its eastern end. This allows for one or two boats to tie up for a pump out if needed. Not

counting boats tied at the service end this pier has a total of nine slips per side for 18 slips total. The overall marina capacity is 78 slips. The distance between the finger piers on adjacent docks allows for a 45' fairway. The dimensional characteristics of the facility meet the requirements outlined in the DNRE Harbor Design Guidelines.

The docks appear to be in relatively good condition from the standpoint of the flotation. The docks are more than 30 years old and approaching the expected life span for these type docks. Serious consideration will need to be given to replacing the docks in total if the marina is recommended. There are four finger docks that are rotated along the long axis with hardware broken and the stabilizers sheared off. These docks were in this same condition at the pre-proposal meeting so this damage happened sometime after the marina closed. These finger docks would need to be replaced. The wood on the docks is in need of replacement. There is splitting along the grain of the wood with some boards warped. The docks wood should be replaced in total to remedy the problems and improve the appearance. The dock hardware, cleats, tie rings, etc appear to be in good condition.

An underwater inspection of all the main piers and all the finger docks was conducted with video recording of the inspection by the diver. The dock floatation is a circular galvanized metal tube with sections screwed together and the interior of the tubes filled with an expanded foam material. The foam material in the tubes was intact and in reasonably good shape as well as the tubes, struts and other structural members. The connection hardware of bolts and screws are failing and need to be replaced.

The docks would need to be modified as required to meet the current Federal and State requirements for accessibility. There are currently no accessible

boat slips and a facility this size requires a minimum of three slips. The ramps will need to be checked for compliance at low water levels and may need to be extended to meet requirements. The accessible routes to the dock ramps will need to be replaced to meet the maximum 2% slopes for turning areas and cross slopes on the accessible route. Curb ramps and parking spaces will also need to be addressed.

A limited water depth survey was conducted to determine existing water depths in the harbor. Water depths readings were recorded at the ends of each of the finger piers that were accessible with the average depth being approximately 10'-0". Depth readings were taken at the end of each main pier with the average depth being approximately 12'-3". The Army Corp of Engineers water level at Windmill Point meter on the day of sampling was 570.62 IGLD85.

The docks have a potable water system to service the slips. This system is galvanized pipe on the docks and may be satisfactory condition. The system could be tested and the leaks fixed to get it back into service. If replacement is necessary, copper pipe should be used.
Electrical System – There is no utility metering on the marina electrical system. Each dock has its own transformer and the building has a separate transformer. The slips are serviced through Hubbell Power Center Type boxes. The docks are serviced by flex conduit under the ramps and two of the feeds have broken loose.

Telephone service on the docks is in disrepair but the shore boxes are intact. The entrance and the gate controllers are in disrepair and non-functional. Much of the equipment is rusted and the individual interior component condition was not assessed.

The building electrical main service panel is usable although it is missing a breaker panel and there is some question on whether replacement parts might be available. Approximately 50% of the light fixtures are missing lenses or diffusers. No power was turned on to the building circuits due to concerns regarding re-energizing a system that was shut of for eight years. The electric heaters and their controls were not operated. Hand dryers and exhaust fans in the restrooms were not operated.

Site Conditions with missing light poles

The condition of the site is fair. The pavement areas for parking and roads is broken and all the cracks have an abundance of vegetation growing that accentuates the cracks. The street lights that provide general illumination along the dock area have been cut off above the anchor bolts and removed from the site. The chain link fence along the west property line is still functional but is rusting. The fence is 10' high with barbed wire on the top. The entrance gate is a slide gate that is still functioning. Overall the vegetation and grass areas on the site are overgrown due to the long inactivity.

MARKET ANALYSIS

There are two groups of boaters that would possibly use the Grayhaven Marina Facility, the recreational boater and the fisherman that wants to fish the Detroit River.

1. Within the first group, the recreational boater, there are two types. The first type will rent a slip reasonably close to their home for the boating season so there is good access to use the boat. Recreational boaters by their very nature can choose to cast off their lines and change marinas when they have an issue with their current slip/marina. With the freeway system in the Metropolitan Detroit Area access to the Grayhaven Marina is convenient for Boaters along the I-696 and I-96 Corridors over to I-75 and along the I-94 Corridor up to St. Clair Shores.

   It should be noted that the Grosse Pointes each have their own marina that they restrict to residents only use. This will take potential customers away from Grayhaven, but these marinas traditionally have had waiting lists for vacant slip.

   There are also recreational boaters that will trailer their boat to a boating access site to use the water for day trips and general recreational activities. This boater enjoys the flexibility of being able to travel distance in the vehicle and exploring different water bodies without necessarily a large boating expense.

   The second type of recreational boater will rent a slip on a short term basis and this is generally referred to as a transient boater. Slips are rented if the boater wants to take a trip overnight. They can take the trip alone or can go with friends from the home marina. Boaters also participate with organizations or boat clubs they belong to in what is known as a rendezvous. This is a more formally organized trip for a larger group that can last from one night to several nights.
2. The fisherman is completely different than the recreational boater in that they will drive significant distances to fish if the fishing reports are favorable. The fishing they do is generally limited to one day or less based on the time available to them. The Detroit River and lower Lake Saint Clair have an excellent reputation for walleye, musky, bass and perch fishing within a short distance from the Grayhaven Marina. There are many sources for where the best fishing is and they can obtain that information and make a decision on where they want to go fishing.

MARINA STUDY

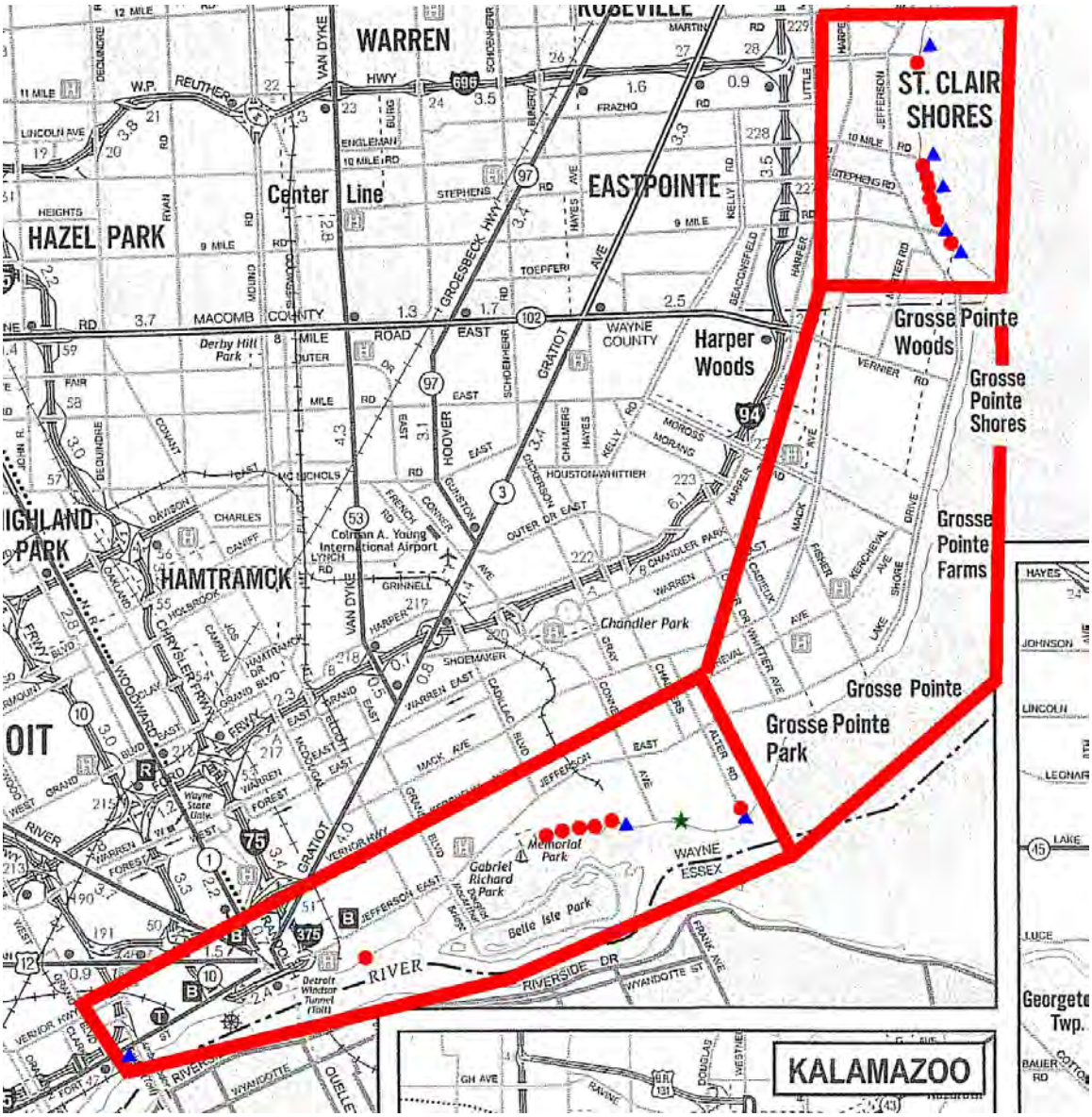


Figure 3 - Overall Study Area Along the Water

Marinas visited or included in the study:

1. William G. Milliken State Harbor
2. Erma Henderson Park Marina
3. Gregory Marina
4. Sinbad's Restaurant & Marina
5. Kean's Marina
6. Harbor Hill Marina
7. Fisherman's Marina
8. Shore Club Marina
9. Harbor 9 Marina
10. Island Harbor Marina
11. Emerald City Marina
12. Jefferson Beach Marina
13. Michigan Boat Harbor
14. Miller Marina
15. Lac St. Clair Boating Facility

Boating Access Sites included in the Study

1. Riverside Park
2. Vaughn Reid Ramp
3. Foot of Alter Road
4. Lakefront Park
5. Nine Mile Road Ramp
6. Jefferson Beach Marina
7. Blossom Heath Park
8. Lac St. Clair Boating Facility

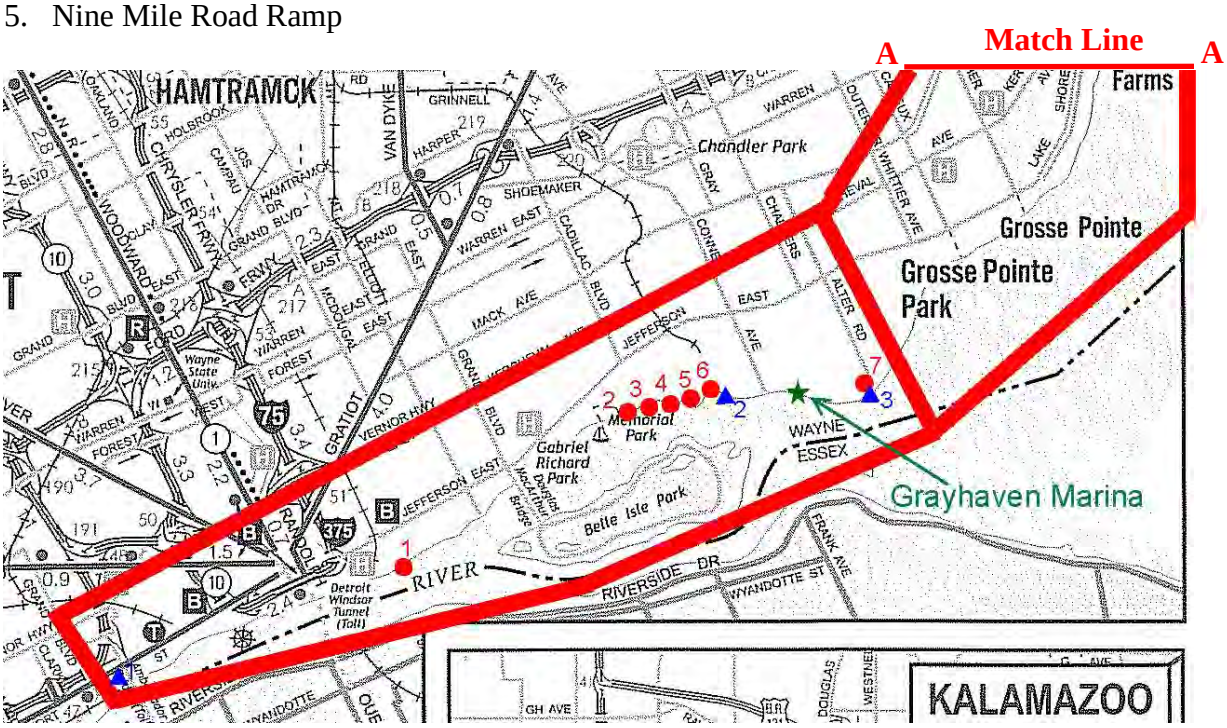


FIGURE 3 - DETROIT RIVER FACILITY LOCATIONS:

LEGEND

● **= Marina Facility**

▲ = Boating Access Site

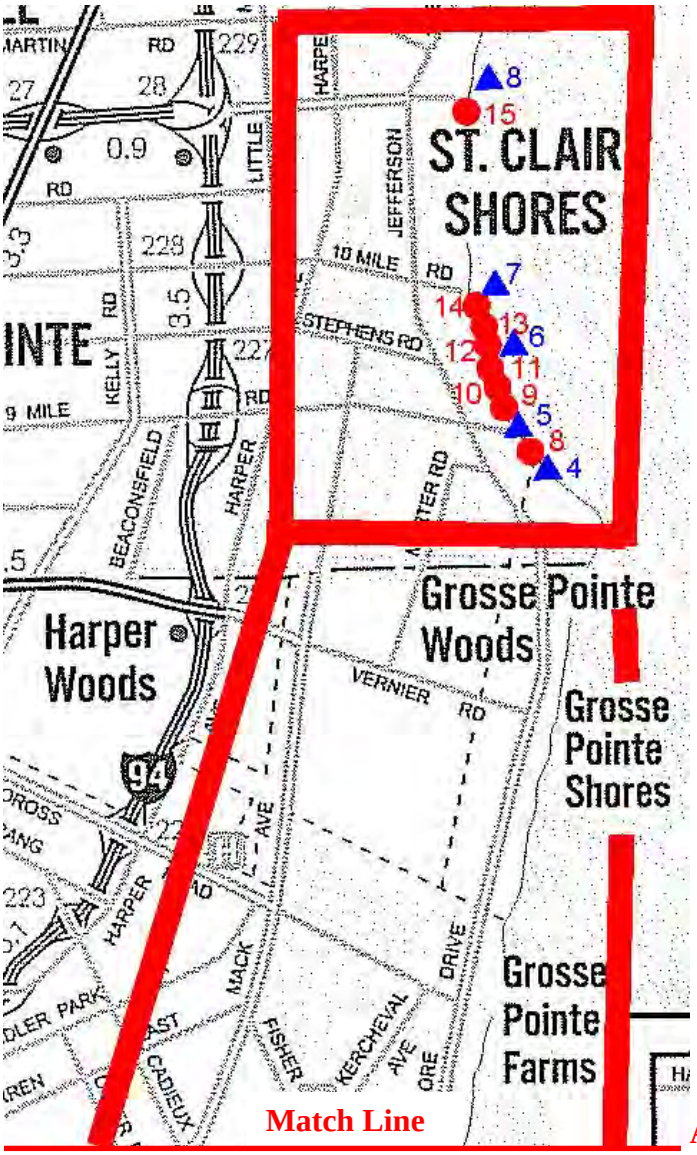


FIGURE 4 - LAKE ST. CLAIR FACILITY LOCATIONS:

The information gathered regarding these marinas is tabularized on the following pages but some of the characteristics of the marinas along Jefferson Ave. from Nine Mile Road to Ten Mile Road (The Nautical Mile Area) are:

- Although many of them have a portion of the slips as drive up slips, the roads are asphalt and the pavement extends to the seawall.
- All the docks are fixed height docks that can pose a problem a safety concern when boarding a boat, depending on the water levels.

- Many of the finger docks are in the 24" to 30" width range and these can also provide an access issue.
- Most of the marinas utilize steel piling and have no covers on the piling to protect the boats.
- Many of the fairways are shared with adjacent marinas and can be busy at times.
- The waterway in this area is extremely congested on a summer weekend with favorable weather.
- The general area has a reputation as a "party place" although this would not necessarily apply to all the marinas in the Nautical Mile Area.

Some of the assets that Grayhaven has:

- It is on the Detroit River and provides good access for fishing to the upper river area and Lake St. Clair.
- A park setting with grass and landscaping located in a residential neighborhood will appeal to a great number of boaters.
- Floating docks that afford an easy, consistent level access to boarding the boats.
- Low traffic area that will limit wake disturbance in the harbor.
- Good protection from the wind.
- Popular events on the Detroit River i.e. hydroplane races and fireworks display.
- Great view of the Detroit River and all of the boating traffic including the freighters making passage.

Some of the concerns regarding Grayhaven Marina are:

- Potential security issues
- Docks are limited to a maximum 26' to 27' boat so the boat would not extend past the end of the finger docks.
- Residential area with no organized land based events.
- No restaurants in the immediate area available by walking.
- No place to purchase snacks or pre-prepared food.
- No cable TV at slips.

MARINA REPORTS

General Information				Physical Data	
Marina:	1M William G. Milliken State Park & Harbor			Reported Harbor Depth	6' to 10'
Address	1900 Atwater			Dock Conditions	Floating - good
Cross Streets	St. Aubin & Atwater			Access to Waterways	Detroit River
City	Detroit			Other	DNRE Owned & Operated
Boat Slips	Length	No.	Rate		
	45'	10	3,701.00		
	35'	27	2,810.00		
	30'	17	2,005.00		
Total Boat Slips		54			
Reported Occupancy Rate		32%			
Special Notes					
Marina Features					
Recreational Features					
Retail Facilities		n			
Repair Facilities		n			
Launch/Haul Out Facilities		n			
Fuel		n			
Pump Out		y			
Slip Services					
Electric		y			
Water		y			
Cable TV		n			
Survey Date		Apr-09			
Comments/Notes					
Distance to Grayhaven by water 3.9 Nautical Miles Transient Dockage Occupancy was 15.25% for the 2008 season					

General Information				Physical Data	
Marina:	2M Erma Henderson Park			Reported Harbor Depth	
Address	8800 E. Jefferson			Dock Conditions	Some fixed, some floating
Cross Streets				Access to Waterways	Detroit River
City	Detroit			Other	Detroit Owned & Operated
Boat Slips	Length	No.	Rate		
	25' & under		1,554.00		
	over 25'		2,752.00		
Total Boat Slips		243			
Reported Occupancy Rate		60% Estimated			
Special Notes					
Marina Features					
Recreational Features					
Retail Facilities		n			
Repair Facilities		n			
Launch/Haul Out Facilities		n			
Fuel		n			
Pump Out		y			
Slip Services					
Electric		y			
Water		y			
Cable TV		n			
Survey Date		Apr-09			
Comments/Notes					
Distance to Grayhaven by water 1.8 Nautical Miles Transient Dockage Occupancy was 2.67% for the 2008 season *The Transient rate was computed based on 40 reported boat days for 10 slips available for 150 days*					

General Information				Physical Data	
Marina:	3M Gregory Marina Co.			Reported Harbor Depth	
Address	9666 E. Jefferson			Dock Conditions	Fixed - good
Cross Streets	Jefferson & Water Works Park			Access to Waterways	Detroit River
City	Detroit			Other	Privately Owned
Boat Slips	Length	No.	Rate		
	35' 45'		1,500.00 2,100.00		
Total Boat Slips		100			
Reported Occupancy Rate		80%			
Special Notes					
Marina Features					
Recreational Features		n			
Retail Facilities		n			
Repair Facilities		y			
Launch/Haul Out Facilities		y			
Fuel		y			
Pump Out		y			
Slip Services					
Electric		y			
Water		y			
Cable TV					
Survey Date		Mar-09			
Comments/Notes					
Distance to Grayhaven by water 1.75 Nautical Miles					

General Information				Physical Data	
Marina:	4M Sinbads Restaurant & Marina			Reported Harbor Depth	
Address	100 St. Clair Ave.			Dock Conditions	Steel - fair
Cross Streets	Jefferson & Water Works Park			Access to Waterways	Detroit River
City	Deroit			Other	Privately Owned
Boat Slips	Length	No.	Rate		
	25' 28'		1,350.00 1,425.00		
Total Boat Slips		76			
Reported Occupancy Rate		60%	estimated		
Special Notes					
Marina Features					
Recreational Features		n			
Retail Facilities		n			
Repair Facilities		n			
Launch/Haul Out Facilities		n			
Fuel		n			
Pump Out		n			
Slip Services		y			
Electric		y			
Water		y			
Cable TV		n			
Survey Date		Mar-09			
Comments/Notes					
Restaurant on site Distance to Grayhaven by water 1.6 Nautical Miles					

General Information				Physical Data	
Marina:	6M Harbor Hill Marina			Reported Harbor Depth	
Address	11000 Freud Street			Dock Conditions	Wood - good
Cross Streets	Jefferson & St. Jean			Access to Waterways	Detroit River
City	Detroit			Other	Privately Owned
Boat Slips	Length	No.	Rate		
	< 30'	60	2,085.00		
	35'	154	2,350.00		
	45'	170	2,900.00		
Total Boat Slips		370			
Reported Occupancy Rate		80%			
Special Notes	One of the nicest marinas in the survey (all amenities considered)				
Marina Features					
Recreational Features		y			
Retail Facilities		n			
Repair Facilities		y			
Launch/Haul Out Facilities		y			
Fuel		y			
Pump Out		y			
Slip Services					
Electric		y			
Water		y			
Cable TV		y			
Survey Date		Mar-09			
Comments/Notes					
Pool, jacuzzi, volley ball, club house Laundry Repair and Storage Facilities Distance to Grayhaven by water 1.4 Nautical Miles					

General Information				Physical Data	
Marina:	5M Kean's Marina			Reported Harbor Depth	
Address	100 Meadowbrook St.			Dock Conditions	Concrete good
Cross Streets	Jefferson & St. Jean			Access to Waterways	Detroit River
City	Detroit			Other	Privately Owned
Boat Slips	Length	No.	Rate		
	<23'	18	1,700.00		
	24' - 27'	207	2,185.00		
	28' - 32'	105	2,300.00		
	35'		3,260.00		
Total Boat Slips		330			
Reported Occupancy Rate		87.40%			
Special Notes	One of the nicest marinas in the survey (all amenities considered)				
Marina Features					
Recreational Features		y			
Retail Facilities		n			
Repair Facilities		y			
Launch/Haul Out Facilities		y			
Fuel		y			
Pump Out		y			
Slip Services					
Electric		y			
Water		y			
Cable TV		y			
Survey Date		Mar-09			
Comments/Notes					
Pool, playscape, clubhouse Laundry Repair and Storage Facilities Distance to Grayhaven by water 1.5 Nautical Miles					

General Information		Physical Data	
Marina:	7M Fisherman's Marina	Reported Harbor Depth	
Address	14601 Riverside Blvd	Dock Conditions	Wood poor
Cross Streets	Alter Rd & Jefferson	Access to Waterways	Detroit River
City	Detroit	Other	Privately Owned

Boat Slips	Length	No.	Rate

Total Boat Slips	
Reported Occupancy Rate	
Special Notes	
Marina Features	
Recreational Features	**CLOSED**
Retail Facilities	
Repair Facilities	
Launch/Haul Out Facilities	
Fuel	
Pump Out	
Slip Services	
Electric	
Water	
Cable TV	
Survey Date	Mar-09

Comments/Notes

Small capacity was targeting fisherman for upper river area.
Fire in building and has been abandon for some time.
Now Owned by Mike Parsons who owns ramp and parking to east.
Previously known as Tommy's.
Distance to Grayhaven by water 1.0 Nautical Miles

General Information		Physical Data	
Marina:	8M Shore Club Marina	Reported Harbor Depth	
Address	1 Shore Club Drive	Dock Conditions	Fixed - good
Cross Streets	9 Mile Road and Jefferson	Access to Waterways	Lake St. Clair
City	St. Clair Shores	Other	Privately Owned

Boat Slips	Length	No.	Rate
	23'		1,260.00
	27'		1,260.00
	30'		1,980.00

Total Boat Slips	284
Reported Occupancy Rate	60%
Special Notes	
Marina Features	
Recreational Features	y
Retail Facilities	n
Repair Facilities	n
Launch/Haul Out Facilities	n
Fuel	n
Pump Out	n
Slip Services	
Electric	y
Water	y
Cable TV	y
Survey Date	Mar-09

Comments/Notes

Pool and spa on-site.
Apartment marina but renting to non-residents.
Distance to Grayhaven by water 8.5 Nautical Miles

General Information		Physical Data	
Marina:	9M Harbor 9 Marina	Reported Harbor Depth	
Address	24030 E. Jefferson	Dock Conditions	Fixed - fair
Cross Streets	Jefferson & Ridgeway	Access to Waterways	Lake St. Clair
City	St. Clair Shores	Other	Privately Owned

Boat Slips	Length	No.	Rate
	information unavailable		

Total Boat Slips	100
Reported Occupancy Rate	80%
Special Notes	
Marina Features	
Recreational Features	n
Retail Facilities	n
Repair Facilities	y
Launch/Haul Out Facilities	y
Fuel	n
Pump Out	n
Slip Services	
Electric	y
Water	y
Cable TV	n
Survey Date	Mar-09

Comments/Notes

Distance to Grayhaven by water 8.7 Nautical Miles

General Information		Physical Data	
Marina:	10M Island Harbor Marina	Reported Harbor Depth	
Address	24102 E. Jefferson	Dock Conditions	Fixed - fair
Cross Streets	Jefferson & Windwood Pointe Drive	Access to Waterways	Lake St. Clair
City	St. Clair Shores	Other	Privately Owned

Boat Slips	Length	No.	Rate
	information unavailable		

Total Boat Slips	108
Reported Occupancy Rate	70%
Special Notes	
Marina Features	
Recreational Features	n
Retail Facilities	n
Repair Facilities	y
Launch/Haul Out Facilities	y
Fuel	n
Pump Out	n
Slip Services	
Electric	y
Water	y
Cable TV	n
Survey Date	Mar-09

Comments/Notes

Distance to Grayhaven by water 8.7 Nautical Miles

General Information				Physical Data			
Marina:	11M Emerald City Marina			Reported Harbor Depth			
Address	24200 E. Jefferson			Dock Conditions	Fixed - good		
Cross Streets	Jefferson & Blackburn Street			Access to Waterways	Lake St. Clair		
City	St. Clair Shores			Other	Privately Owned		
Boat Slips	Length	No.	Rate				
	40'		2,100.00				
Total Boat Slips		600					
Reported Occupancy Rate		70%					
Special Notes							
Marina Features							
Recreational Features		limited					
Retail Facilities		n					
Repair Facilities		y					
Launch/Haul Out Facilities		y					
Fuel		y					
Pump Out		y					
Slip Services							
Electric		y					
Water		y					
Cable TV		n					
Survey Date		Mar-09					
Comments/Notes							
Restaurant on site Laundry Distance to Grayhaven by water 8.8 Nautical Miles							

General Information				Physical Data			
Marina:	12M Jefferson Beach Marina			Reported Harbor Depth			
Address	24400 E. Jefferson			Dock Conditions	Fixed - good		
Cross Streets	Jefferson & Harry Stahl Blvd			Access to Waterways	Lake St. Clair		
City	St. Clair Shores			Other	Privately Owned		
Boat Slips	Length	No.	Rate				
	30' 40'		1,400.00 2,100.00				
Total Boat Slips		800					
Reported Occupancy Rate		75%					
Special Notes		Fitness Club on-site					
Marina Features							
Recreational Features		y					
Retail Facilities		n					
Repair Facilities		y					
Launch/Haul Out Facilities		y					
Fuel		y					
Pump Out		y					
Slip Services							
Electric		y					
Water		y					
Cable TV		n					
Survey Date		Mar-09					
Comments/Notes							
Restaurant on site Laundry Grass area at the lake access area with some recreational opportunities Distance to Grayhaven by water 8.9 Nautical Miles							

General Information				Physical Data	
Marina:	13M Michigan Harbor Marina			Reported Harbor Depth	
Address	24600 E. Jefferson			Dock Conditions	Fixed - good
Cross Streets	Jefferson at Colony Marine			Access to Waterways	Lake St. Clair
City	St. Clair Shores			Other	Privately Owned
Boat Slips	Length	No.	Rate		
	40'		2,100.00		
	45'		2,600.00		
Total Boat Slips		450			
Reported Occupancy Rate		70%			
Special Notes					
Marina Features					
Recreational Features		n			
Retail Facilities		n			
Repair Facilities		y			
Launch/Haul Out Facilities		y			
Fuel		y			
Pump Out		y			
Slip Services					
Electric		y			
Water		y			
Cable TV					
Survey Date		Mar-09			
Comments/Notes					
Grass area at the lake access area Distance to Grayhaven by water 9.0 Nautical Miles					

General Information				Physical Data	
Marina:	14M Miller Marina			Reported Harbor Depth	
Address	24770 E. Jefferson			Dock Conditions	Fixed - good
Cross Streets	Jefferson & Blossom Heath Blvd			Access to Waterways	Lake St. Clair
City	St. Clair Shores			Other	Privately Owned
Boat Slips	Length	No.	Rate		
	30'		1,775.00		
	40'		2,100.00		
	50'		2,500.00		
Total Boat Slips		350			
Reported Occupancy Rate		70%			
Special Notes					
Marina Features					
Recreational Features		n			
Retail Facilities		n			
Repair Facilities		y			
Launch/Haul Out Facilities		y			
Fuel		y			
Pump Out		y			
Slip Services					
Electric		y			
Water		y			
Cable TV		y			
Survey Date		Mar-09			
Comments/Notes					
Distance to Grayhaven by water 9.1 Nautical Miles					

General Information				Physical Data			
Marina:	15M Lac St. Clair Boating Facility			Reported Harbor Depth			
Address	27600 Jefferson Ave			Dock Conditions	Fixed - good		
Cross Streets	11 Mile Rd & Jefferson			Access to Waterways	Lake St. Clair		
City	St. Clair Shores			Other	St. Clair Shores Owned		
Boat Slips	Length	No.	Rate				
	24' 28' 35'		1,335.00 1,565.00 2,095.00				
Total Boat Slips		236					
Reported Occupancy Rate		90%					
Special Notes							
Marina Features							
Recreational Features		y					
Retail Facilities		n					
Repair Facilities		n					
Launch/Haul Out Facilities		y					
Fuel		n					
Pump Out		y					
Slip Services							
Electric		y					
Water		y					
Cable TV		n					
Survey Date		Mar-09					
Comments/Notes							
Swimming Pool with Water Slide Public Park Distance to Grayhaven by water 10.5 Nautical Miles							

NOTES:

1. The marinas studied only had one Boating Access Site and that was at Jefferson Beach Marina.
2. The notation Launch Haul-out Facilities refers to the marinas ability to launch and retrieve a boat by use of a marina forklift or a travel lift.
3. A Nautical Mile is equal to 115% of a Statute Mile.
4. For Transient Occupancy Rates Please refer to Page 28.

OCCUPANCY ANALYSIS

The following table is a summary of the data collect regarding slips and occupancy rates at the various marinas in the study area.

Existing Marina Occupancy Data

	Marina	Slips Available	Occupancy Rate	Occupied Slips	Vacant Slips
1M	William G. Milliken	52	32.0%	7	45
2M	Erma Henderson	243	60.0% *	150	93
3M	Gregory Marina	100	80.0%	80	20
4M	Sinbad's	76	60.0%	50	26
5M	Kean's	330	87.4%	290	40
6M	Harbor Hill	370	80.0%	300	70
7M	Fisherman's Marina	0	0.0%	0	0
8M	Shore Club	284	60.0%	180	104
9M	Harbor 9 Marina	100	70.0% *	70	30
10M	Island Harbor Marina	108	70.0% *	80	28
11M	Emerald City Marina	600	70.0%	420	180
12M	Jefferson Beach Marina	800	75.0%	600	200
13M	Michigan Boat Harbor	450	70.0%	320	130
14M	Miller Marina	350	70.0%	250	100
15M	Lac St. Clair Boating Facility	236	90.0%	220	16
	Total	4099	73.6% **	3017	1082

Data is 2007 data. The commercial marinas are not providing occupancy data regarding the occupancy of their marinas
* = Estimated Occupancy Rate
** = Study Area Average Occupancy Rate

The above figures indicate that for the slips available to the general public there are 1082 slips vacant which represents 26.4% of the total inventory.

COMPETITIVE BOAT MARKET SLIP SUMMARY

The summary of facilities in the entire competitive market area, including the Grosse Pointes' resident-only municipal slips, private club slips, slips available to the general public and slips not available for rent is presented in the following table. The type of slip referenced as "Other" includes those that do not have seasonal rentals, are closed, or otherwise do not fit into the typical marina definition.

TOTAL MARKET SUPPLY		
	Slips	**%**
Detroit Public Marinas	1,171	16.85%
St. Clair Shores Public Marinas	2,928	42.13%
Private Clubs	1,202	17.29%
Grosse Pointe Municipal Parks	1,249	17.97%
Other	400	5.76%
Total Slips in Market	6,950	

PROPOSED PUBLIC MARINAS

This report was unable to identify any proposed public marinas facilities. The lack of available waterfront property in the market area, coupled with the economics of developing a marina makes future additions to the slip supply unlikely at this time. One of the more recent additions to this market was Harbor Hill Marina, which was reportedly subsidized by the City of Detroit.

PRIVATE CLUBS

Private clubs make up a substantial portion of the slip rental market. Many of these clubs are exclusive and provide high quality amenities to member or specialized services like sailboat racing. People are attracted to these clubs because they provide access to a "boating lifestyle" that regular public marinas do not offer. The following chart provides a summary of private clubs in the area. Due to the amenities offered at these private clubs, the rental rates of these slips is not comparable to those charged at the public marinas.

PRIVATE CLUB MARINAS			
Name	City	Slips	Remarks
Detroit Yacht Club	Detroit, MI	350	Full amenity exclusive club
Edison Boat Club	Detroit, MI	100	Located next to DTE power plant
Bayview Yacht Club	Detroit, MI	112	Predominantly racing sailboats
The Grosse Pointe Club	Grosse Pointe, MI	70	Mostly 45'+ wells. Exclusive private club
Crescent Sail Club	Grosse Pointe, MI	120	Sailboats only
Grosse Pointe Yacht Club	Grosse Pointe, MI	300	Mostly larger slips, full amenities, private club
Great Lakes Yacht Club	St Clair Shores	150	Small private club, mostly sailboats
Total		1202	

BOAT REGISTRATION

Number of Registered Boats in Michigan by Length & Year							
Year	0 - 16'	16 - 26'	26 - 40'	40 - 65'	+65'		TOTAL
2002	535,073	422,245	38,908	4,145	179		1,000,550
2003	530,500	425,345	39,028	4,189	175		999,237
2004	521,690	432,279	38,906	4,198	182		997,255
2005	512,749	435,728	38,759	4,229	194		991,659
2006	505,975	439,345	38,753	4,216	191		988,480
2007	499,606	441,627	38,675	4,235	185		984,328
2008	489,544	439,207	37,774	4,201	181		970,907
2009	483,684	437,069	37,071	4,110	175		962,109
2010	466,011	427,143	35,743	3,964	167		933,028
Registrations shown are from December each year except 2010 where the data is from June.							

The total boat registrations in the State of Michigan have been declining since 2002. The overall decline of the total registrations has been 6.75%. The largest decline has been in the 0 – 16 foot size, 12.91%. The 16 foot – 26 foot length experienced an increase from 2002 through 2007 before it started to decline and the 2010 registration number is still 1.16% more than the 2002 registrations. The 26 foot to 40 foot length has experienced a decline of 8.14%. The 40 foot to 65 foot length and over 65 foot length have experience declines of 4.37% and 6.71% respectively.

Boats Registrations by County in Study Area										
	2010		2009	2008	2007	2006	2005	2004	2003	2002
	% of State Registrations	Number Registered	Number Registered	Number Registered	Number Registered	Number Registered	Number Registered	Number Registered	Number Registered	Number Registered
Wayne	7.38%	68,885	71,872	73,837	76,101	77,556	78,876	80,467	81,957	82,430
Oakland	9.66%	90,098	93,302	94,979	96,560	97,423	97,927	98,342	98,408	98,329
Macomb	5.73%	53,457	55,352	56,435	57,322	57,590	57,712	57,907	58,116	58,147
Total Reg.		212,440	220,526	225,251	229,983	232,569	234,515	236,716	238,481	238,906
% of Total Reg.		22.77%	22.92%	23.20%	23.36%	23.53%	23.65%	23.74%	23.87%	23.88%

Estimated Size of Registered Boats in Wayne, Oakland and Macomb, 2010						
County	0 - 16'	16 - 26'		26 - 40'	40 - 65'	+65'
Wayne	34,405	31,536		2,639	293	12
Oakland	45,000	41,247		3,452	383	16
Macomb	26,700	24,473		2,048	227	10

Boating registrations in the Tri-County Area (Wayne, Oakland and Macomb) have shown a steady decline since 2002. The overall decline during this period has been 11.1% which is more than the State total registration decline of 6.75%. While some of the 2010 decline may be attributable to the time of the data sampling being mid-year, it is safe to assume that the overall trend has continued. The economy in Michigan is the prime reason for the boat registration decline with the high unemployment rate that the State is currently experiencing. This unemployment rate does not take into account the relocation of people in the workforce to other states in search of employment.

The Tri-County Registrations shown are for a geographic area that is larger than the Study Area shown for this report. It should be noted that while the number of boats in the Tri-County Area is significant, not all of these boats are used in the Tri-County Area or in the Study Area. To a lesser extent, it also holds true that boaters from outside the Tri-County Area have their boats in facilities in the Tri-County Area and possibly in the Study Area.

GROSSE POINTE'S WAITING LIST ASSESSMENT

The Grosse Pointe Municipal Marinas are open to residents in their respective communities only. These marinas are different than the other public marinas in the study area because they offer many high end amenities that are very attractive to their residents as a whole and the marina only represents one type of recreational activity. Each municipality normally maintains a waiting list for the slips within their marina. Not all the slip sizes have waiting lists and generally the waiting lists are for the smaller slips, 30' or less. In Grosse Pointe Shores there are 12 people on the waiting list. In Grosse Pointe Farms there is a small list for all sizes except there are 8 - 30' slips vacant. These two communities have current occupancy rates of approximately 85.7% and 97.6% respectively. The longest wait in the Grosse Pointes is for the largest slips.

It should also be noted that the rates for the slips in the Grosse Pointes are priced below the rates for similar size slips for the marinas that are open to the general public. This is a factor in the higher occupancy rates and part of the reason for the waiting lists. Residents of the Grosse Pointe's have been known to put their name on the waiting list when they do not own a boat as of that time with the expectation of purchasing a boat when their name comes up for rental of a slip.

While the fact that the Grosse Pointe Marinas have waiting lists appears to be a potential source for Grayhaven boaters, there are several factors that may not work in Grayhaven's favor.

1. If the people on this list already own a boat, they probably are renting a seasonal slip from one of the marinas in the Study Area.
2. Some of the people on the list are renting at the Grosse Pointe Yacht Club and would move to their respective municipal marina if a slip becomes available for their size boat.
3. Some of the people on the waiting list are accommodated by moving into larger slips, when available, until their requested size becomes available.
4. Some people on the list do not currently own a boat.

TRANSIENT SLIPS

The Transient Boater is the type of boater that the DNRE tries to attract to their marinas.

Transient Slips are provided in most marinas to accommodate boaters that are traveling from one destination to another and need a place to stay for the night. Clubs and other organized groups also plan rendezvous at marinas away from their home marina so they have a place to go for a weekend outing.

The Harbors of Refuge along the Michigan Shore are a prime example of the DNRE's efforts to serve the boating public. They were installed so a boater always had a harbor reasonably close if the weather deteriorates to a point where they needed to find shelter. With the abundance of marinas in the Study Area there is no need for a Harbor of Refuge. Even the Grosse Pointe Marinas and private clubs will find a space if someone comes in during bad weather looking for a place to stay until the weather improves.

Transient slips are available at the private marinas but are not necessarily dedicated like the DNRE does. Management at these marinas realizes that they will not be renting 100% of their slips and even in the best of times, the occupancy rates might be 85% of the total slips which would leave a 400 slip marina with 60 slips available. The seasonal rentals can be managed so there are clusters of the vacant slips available that are reserved for transients or the management would just reserve groups of slips for transients until they needed to rent them for seasonal boaters if the demand required. Transients in the private marinas can also be accommodated by the marina staff by utilizing the slips for seasonal residents that may be away on a boating vacation. Many marinas that have specific events that draw large number of transients for the events will require the seasonal boaters to notify them when they will be away so they know what slips are available. This acts as a safety net for the private marinas so they do not have to keep a large number of slips reserved for transients.

BOATING ACCESS SITE REPORT

Boating Access Sites Ambassador Bridge to 11 Mile Road						
	Site Name	Ownership	Skid Piers	Ramp Positions	Convenient Parking	Restricted Use
1B	Riverside Park	City of Detroit	2	4	yes	no
	West Grand Blvd at Detroit River				94 Trailer & car	
	Detroit, MI		SITE CLOSED		34 Car	
2B	Vaughn Reid Ramp	City of Detroit	5	14	yes	no
	St. Jean at Detroit River				75 Trailer & car	
	Detroit, MI					
3B	Foot of Alter Road	Private	1	2	yes	no
	14651 Riverside Blvd				20 Trailer & car	
	Detroit, MI					
4B	Grosse Pointe Wood - Lakefront Park	City of Grosse	0	2	yes	yes
	Marter Road & E. Jefferson	Pointe Woods			21 Trailer & car	residents
	St. Clair Shores, MI				17 Car	
5B	9 Mile Ramp	City of St.	1	4	no	yes
	9 Mile at Lake St. Clair	Clair Shores			55 Trailer & car	residents
	St. Clair Shores, MI				55 more	
					possible	
6B	Jefferson Beach Marina	Private	3	4	yes	no
	24400 E. Jefferson				17 Trailer & car	
	St. Clair Shores, MI				20 Car	
7B	Blossom Heath Park	City of St.	2	4	yes	yes
	24800 E. Jefferson	Clair Shores			32 Trailer & car	residents
	St. Clair Shores, MI				6 Car	
8B	Lac St. Clair Boating Facility	City of St.	2	4	yes	yes
	27600 E. Jefferson	Clair Shores			19 Trailer & car	residents
	St. Clair Shores, MI				163 Car	

The Michigan DNRE operates many Boating Access Sites in the State. In general these Boating Access Sites attract trailer boats to 26' in length. While there are larger boats that are trailered, they are very few and do not make up the typical Boating Access Site user. Based on this definition of the typical Boating Access Site user, more than 95.7% of the total state boating registrations meet the criteria and represent potential users of a future Grayhaven Boating Access Site.

There were eight existing Boating Access Sites identified in the study area. These Boating Access Sites were both public and private and allowed for 38 launch/retrieval positions total. Four of these ramps had no residency restrictions on them and four ramps had residency restrictions. Three of the restricted ramps are operated by the City of St. Clair Shores and the fourth is operated by the City of Grosse Pointe Woods.

The parking at the Boating Access Sites was investigated and is shown in the Boating Access Site Report above. Convenient parking is defined as parking within a reasonable distance of the actual ramp area so the user can gain access to their vehicle without a major walk. Where there was convenient parking, to the ramp, remote parking was not included in the counted as available spaces

Three of the ramps with no restrictions were located along the Detroit River and the fourth ramp is located at the Jefferson Beach Marina.

- The one ramp with no restrictions is at the foot of Alter Road and has two launch/retrieval positions and is in disrepair. The parking is unimproved and in need of repair. The Alter Road ramp is privately owned.
- The Riverside Park Ramp is owned by the City of Detroit and has been technically closed since 2001 because the City lacked funds to keep it in operation. The Boating Access Site and part of the park were secured during the fall of 2008 and posted to Keep Out – Homeland Security. This is part of securing the border at the adjacent Ambassador Bridge facility. The opportunity for that ramp to reopen would appear to be non-existent. Prior to the area being secured the gates were open and the ramp could be used but the main use was the sheriff and other law enforcement.
- The Vaughn Reid ramp is the largest facility in the area and is extremely busy and crowded on the weekends. This ramp is owned by the City of Detroit and operated by Harbor Hill Marina that is located on the adjacent property. The ramp is staffed by Harbor Hill personnel. It has been reported that the ramp is not always supervised. The docks at Vaughn Reid are in poor condition although there are five units

available for use. The parking is ample and there is an overflow lot available on the west side for extremely busy times.

- The Jefferson Beach Marina Ramp does have one restriction and that is that the boater must purchase a seasonal pass for $180.00 to use the ramp. The ramp user also has an option of leaving the boat on the trailer at the marina for an additional $500.00 per year storage fee.

It is clear that there is a lack of available Boating Access Sites on the portion of the Detroit River in the Study Area. This affords the DNRE an opportunity to provide additional Boating Access facilities along this portion of the River.

An interesting observation made during the site visit to the Vaughn Reid Ramp was that, although it was the middle of the morning, of a weekday, there were probably 15 vehicles with trailers parked at the ramp. The Ramp Attendant indicated that probably 75% of people using the ramp that morning were laid off from their jobs. The indication is that trailer boating is always a viable option. All of the vehicles were fisherman out on the river.

GRAYHAVEN SAFETY AND SECURITY

Grayhaven is located next to Maheras Memorial Park. During conversations with some of the local people, they volunteered information regarding activities in Maheras Memorial Park without prompting. Comments were “anything you can imagine happens in that park at night” and this would pose a safety/security concern for the average boater if he was using the Grayhaven Facility in the late afternoon or evening.

It was noted during the study that almost universally the marinas in the study area are under closed circuit TV (CCTV) surveillance. The two closest marinas, Harbor Hill and Kean’s both have gatehouses with guards to check incoming traffic.

The consensus opinion is that the safety/security issues would probably move to another area if the Facility created more activity, has better lighting and there is Closed Circuit TV cameras to monitor activity.

COST TO RENOVATE AND RECOMMISSION GRAYHAVEN

Grayhaven Marina Facilities were not maintained by the City of Detroit in the last several years prior to closing and it has been allowed to further deteriorate over the last eight years. The existing condition has been previously discussed in this report.

The cost to get the marina back into service and give the building a facelift with all systems working and accessibility requirements addressed is estimated to be $384,000 including a contingency of 25% because of potential unknowns and the preliminary nature of the estimate. This work would include new fence and gate along the west side of the marina site with landscaping attention to the grounds and trimming of the trees. An Allowance of $20,000.00 was included for CCTV's that would cover 6 cameras.

There is some question regarding who owns the transformers at the site because there is no electrical service meter. It is possible that the transformers belong to Detroit Public Lighting Department and would need to be purchased.

The above costs include repairing the existing docks so they are all serviceable but did not replace the wood in total. Based on a limited water depth survey, no dredging would be anticipated to get the marina back in operations.

The other possibility for renovating Grayhaven is to give the building a facelift and replace the dated electrical lighting panel. The marina docks, electrical system and water system would be replaced in total with new equipment meeting all the current standards. This option would give the marina a very attractive appearance for boaters and reduce maintenance for the foreseeable future. The cost for the building renovation and complete marina replacement renovation would be approximately $1,890,000.00.

No environmental surveys were done to the Grayhaven Facility at this time and considering the age, these should be done as the results may impact costs.

COST TO ADD BOATING ACCESS SITE TO GRAYHAVEN

The cost of putting in a Boating Access Site at Grayhaven was evaluated. The site would have parking for approximately 70 vehicles. There would be a minimum of six ramp lanes with three skid piers. It was determined that a new Boating Access Site Facility would require approximately 4.6 acres of the land north of the marina basin and the cost for the new facility would be $1,200,000.00. Included in these costs are the complete site development costs for new paved roads, site drainage, site lighting, ramp installation costs, skid piers, new paved parking areas, concrete walks, site landscaping, north access road gate, etc. Also included is a 15% contingency.

Permitting of this new facility by the Michigan Department of Natural Resource and Environment and by the United States Army Corp of Engineers has not been addressed but it is felt that it would be safe to assume that approvals would be forthcoming once all requirements are met.

No environmental surveys were done to the Grayhaven Facility at this time. There was no history of the site available for its use prior to the Grayhaven Facility being constructed. These surveys should be completed as the results may impact site development costs.

GRAYHAVEN PRELIMINARY COST SUMMARY

		Item	Cost	Remarks
Marina Options	1	Recommission Grayhaven Renovate Building Renovate Marina	$ 384,000.00	 Fix all items listed in report Replace minimum necessary to put back into service
		or		
	2	Recommission Grayhaven Renovate Building Replace Marina Docks Replace Electrical System Replace Water System	$ 1,890,000.00	 Fix all items listed in report All new floating docks New Power Pedestals on Docks Outlets in Pedestals
Boating Access Site	3	Boating Access Site Car & Trailer Parking Area Skid Ramps Launch Area Site Drainage Lighting	~~$ 1,200,000.00~~	Increase 3% for 8 years per MDNR request: $1,520,000 (OHM Advisors, 10-02-2018)

POTENTIAL FEES AT GRAYHAVEN RELATIVE TO MARKET CONDITIONS

DNRE has a schedule of fees that it would use at the Grayhaven Facilities. These fees are set by the Michigan State Waterways Commission and variance from these fees requires approval of the Commission. The Grayhaven Facility falls within Rate Area 1 for seasonal dockage. Transient dockage fees are also set by the Michigan Waterways Commission.

RECOMMENDATIONS

No attempt was made in this report to compare costs to possible revenues generated through fees to the boating public. With the high cost to renovate or install there is no way to economically justify the expenses. Rather the report focused on whether there is a demand for the potential services that Grayhaven could offer and what would be the best way for the DNRE to serve the residents of Michigan based on data collected in the Study Area.

Marina

Based on the current occupancy conditions in the marinas in the Study Area, renovation and/or recommissioning of the Grayhaven Marina is not recommended. There are more than 26% of the available slips in the Study Area that are currently vacant. This represents over 1,080 vacant slips. The decline in the boating registrations is a concern because the overall decline started in 2002 and the economy and high unemployment over the last year has not helped slow or stop the decline. Assuming the economy and the Boating Registrations were to recover to some extent, the supply of slips in the Study Area appears to be sufficient to cover an increase.

Transient dockage which is a primary concern to DNRE does not appear to need any additional capacity. Except for two or three events on the river that would fill the available transient dockage, there is an abundant supply of slips available. William G. Milliken State Harbor had 30 transient slips available for transient boaters last year and only had a total of 686 boat days for the season. In looking at the size of the boats, only 43% of the boats that were at William G. Milliken would be able to dock at Grayhaven because of the size limitation.

There are several negative aspects with regard to the facility and they would be difficult to overcome. The marina can only accommodate boats to 26 feet, there is no restaurant nearby, there are no other amenities like swimming, cable TV, wireless internet, retail, repair, land based events, etc.

One concept that would have interest to the trailer boaters who would use the Boating Access Site would be for the marina to be partially recommissioned to service the trailer boater. They would have an option of leaving their boat in the water for a period of time in a slip. There are many people who work in the downtown Detroit area that trailer their boat and may want to have an opportunity to go out on the river to fish or boat in the evening. The big deterrent to these boaters is that they need to go home to get the boat and then return with the boat, and that takes away from the available time. If three of the four main docks were put into service with possibly electrical on only the south dock, these slips could be available for rent by the day, week, month or if the boater decided, the season. This would allow the trailer boater to have more immediate access to the water without necessarily sacrificing the mobility the trailer affords them.

This option would limit the scale of the renovation of the marina to what is necessary to get the docks into service and to provide the marina building with the upgrades necessary to be re-opened with restrooms, showers and the marina office. All the facilities would be made barrier free in accordance with the latest guidelines and requirements of the U.S. Access Board and the State of Michigan. The costs for this recommendation would be Item 1 in the Grayhaven Cost Summary Table.

Boating Access Site

A Boating Access Site could be added to Grayhaven on the north side of the existing marina basin. The launch area would be on the north side of the marina basin. This would keep the launch area from facing the residential community to the east.

An alternate entrance from the north was evaluated. The DNRE was unable to secure all of the Grayhaven land from the City of Detroit so the access from the north is not an option at this time.

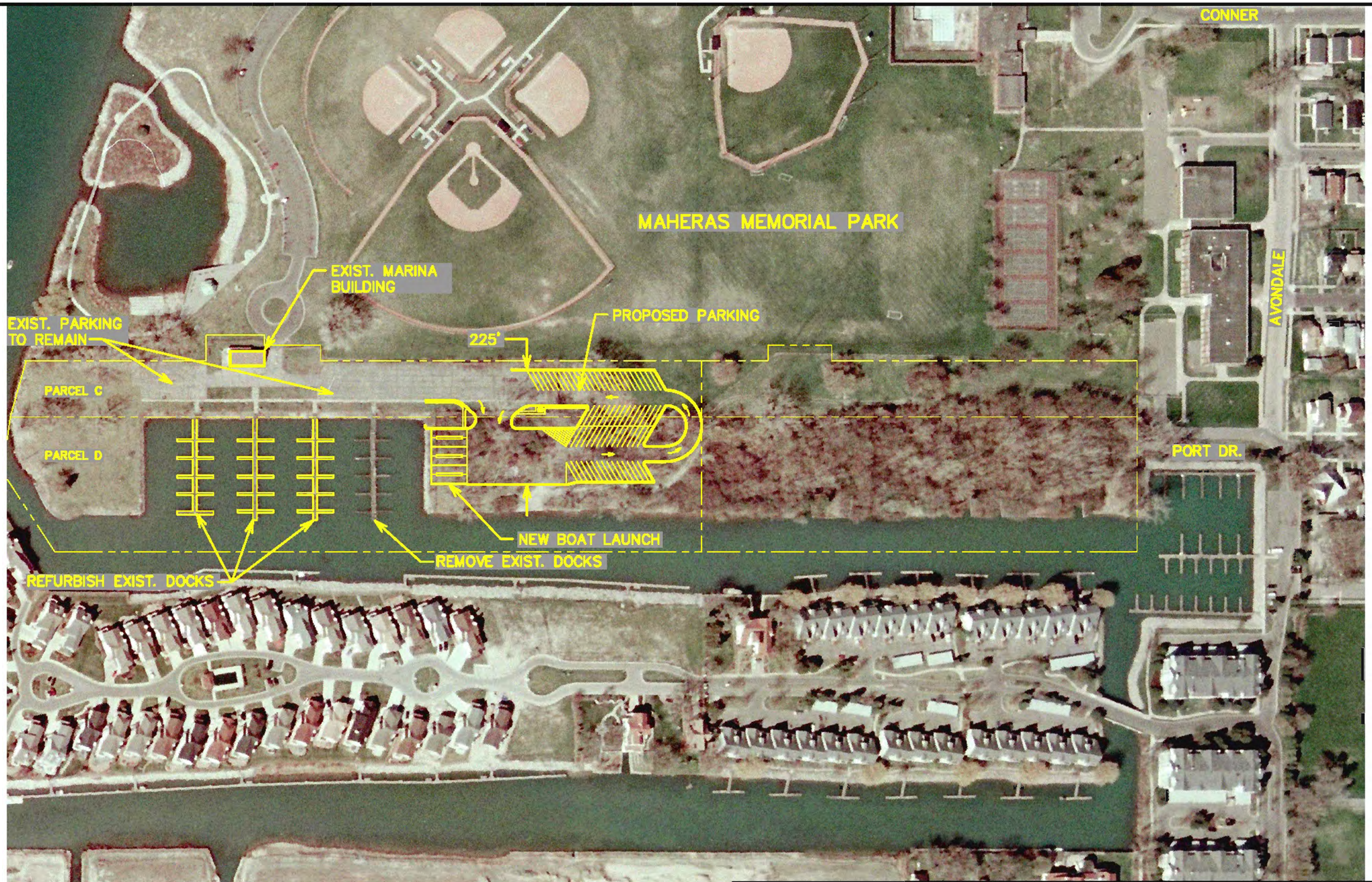
The Boating Access Site would follow DNRE prescribed standards for parking and traffic flow. The basic Grayhaven site north of the marina basin is approximately 300 feet east to west dimension which would allow an elongated north to south parking arrangement. The new Boating Access Site could include three skid piers which would allow for six ramp lanes for launch and retrieval. The parking would be located around the perimeter of the access roadway on the site. The Boating Access Site would have lighting for late evening and early morning use activities and for security. The costs for this recommendation would be Item 1 in the Grayhaven Cost Summary Table.

It is the recommendation of this report to add a boating access site to the Grayhaven Marina Facility to serve the boaters of Southeast Michigan. This report does not see the need for a traditional type marina on the Detroit River. A modified marina catering to the fisherman and day boater should be a consideration, but would require modification to the DNRE rules on how marina operations are conducted.

The figure on the following page is an aerial view of the Grayhaven Marina site with a new Boating Access Site and the renovated Marina shown. The Boating Access Site is north of the existing marina basin between the waterway to the east and the Maheras Park to the west. The Boating Access Site indicates an arrangement of the parking, vehicle circulation, launch area that fits the available space on the property. The existing marina is indicated to provide three main docks, existing parking and existing marina building as described in the recommendation.

8/16/2010 3:52:27 PM

CONCEPTUAL SITE PLAN



N

SCALE: 1"=200'

0 100 200 400

GRAYHAVEN MARINA

REV	DATE

JOB NO. 20080722

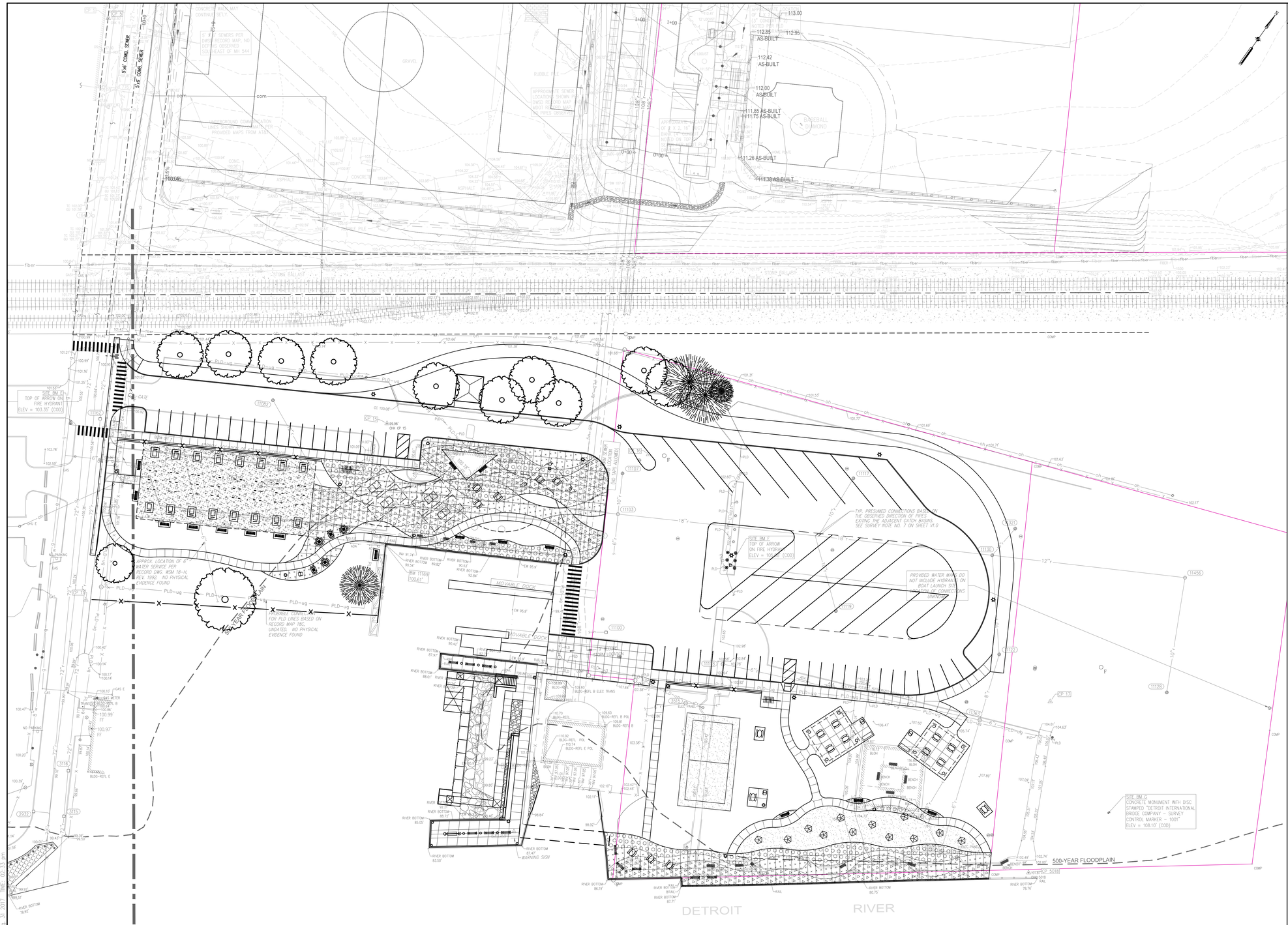
DATE SEPT. 2010

HUBBELL, ROTH & CLARK, INC
Consulting Engineers

SHEET NO. 1 OF 1

V:\20080\20080722\A\01_Grayhaven_Exhibit.dwg

APPENDIX G – RIVERSIDE PARK



SHEET NOTES

1. SEE SHEET G1.1 - GENERAL NOTES SHEET FOR NOTES.

LEGEND

- ASPHALT PAVEMENT — 4 L2.0
- 4-INCH CONCRETE (NO COLOR) — 1 L2.0
- COLOR STAINED CONCRETE, TYPE 1 (BROWN) — # L2.0, 2 L2.0
- COLOR STAINED CONCRETE, TYPE 2 (TAN) — # L2.0, 2 L2.0
- COLOR STAINED CONCRETE, TYPE 3 (BLUE) — # L2.0, 2 L2.0
- SAND — 6 L2.0
- TURF GRASS SEED MIX
- PICNIC TABLE — 1 L2.1
- GAME-STYLE TABLE — 5 L2.1
- PREP TABLE — 6 L2.1
- GRILL — 7 L2.1
- UMBRELLA
- BIKE RACK — 9 L2.1
- BACKED BENCH — 3 L2.1
- BACKLESS BENCH — 4 L2.1
- LITTER RECEPTACLE — 2 L2.1
- PING PONG TABLE — 10 L2.1
- LIGHT FIXTURE
- 8' BLACK VINYL CHAIN LINK FENCE — 4 L2.3
- 4' ORNAMENTAL FENCE — 3 L2.3
- RAILING AT BOAT LAUNCH — 1 L2.3
- RAILING AT RIVER, TYPE 1-3, SEE PLANS — 1 L2.2, 2 L2.2, 3 L2.2
- CONTROL JOINT — 8 L2.0
- SEALED EXPANSION JOINT — 9 L2.0
- CHAMFERED CONTROL JOINT — 10 L2.0
- TIED COLD (CONSTRUCTION) JOINT — 11 L2.0
- METAL EDGING
- BOLLARD — 5 L2.3

RIVERSIDE PARK PHASE II

DETROIT, MICHIGAN

Owner:

CITY OF DETROIT

SMITHGROUPJJR

201 DEPOT STREET
SECOND FLOOR
ANN ARBOR, MI 48104
734.662.4457
www.smithgroupjjr.com

ISSUED FOR	REV	DATE
OWNER REVIEW		05MAY2017

SEALS AND SIGNATURES

DRAFT
NOT FOR DISTRIBUTION

DRAWING TITLE

LAYOUT & MATERIALS PLAN - OVERALL

0' 15' 30' 60'

SCALE:

SCALE 21398.000

PROJECT NUMBER L1.0

DRAWING NUMBER

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 1-800-482-7171

APPENDIX H – FISHERIES INFORMATION

On Mar 8, 2019, at 4:26 PM, Francis, James (DNR) <FRANCISJ@michigan.gov> wrote:

Amanda-
Attached are the reports relating to the Detroit River fishery that we discussed. The first is a report that focused on boat fishing effort during the walleye run in Spring 2000. During that approximately 9-week survey, we documented just under 68,000 angler trips, representing 344,741 angler hours. I think table 5 in the report illustrates the problems with boating access on the Detroit River. About 75% of the fishing effort was generated by the three most downstream access sites. The other sites upriver do not have nearly the effort due to a combination of smaller sized access sites and/or safety concerns. Just as much fishing effort takes place from the outlet of Lake St Clair down to the Ren Cen as there is in the lower river, but anglers have to launch at other locations to be able to access the fishery upriver.

The second attached report was more comprehensive and included angler survey data throughout the season. For the 7 month season from April through October, boat anglers averaged just under 850,000 angler hours annually from 2002-2004. A similar survey was conducted in 2015 and documented about 625,000 angler hours by boaters on the Detroit River. While the spring walleye run gets a lot of attention, the fishery in the Detroit River is very diverse. Generally, there are more white bass harvested each year than walleye. But with that being said, the fishery that draws the most attention is the spring walleye run.

The walleye caught in the Detroit River originate from Lake Erie. Once they are done spawning in the western basin in spring, about 10-15% of the Lake Erie walleye head up the Detroit River. Considering that our Lake Erie walleye population estimate last year was about 49 million fish – that means that over 7 million walleye headed up the Detroit River. Those fish will continue north and support a walleye fishery in Lake St Clair, the St Clair River, and even in Saginaw Bay. A recent study found that 25% of the walleye harvested in Saginaw Bay originated from Lake Erie. The Lake Erie management agencies conduct various surveys annually to assess the walleye population. We have a long-term survey which measures the relative year class strength of walleye spawning. We had a strong walleye year class in 2015 which contributed significantly to this past seasons fishery. The 2018 walleye year class is the best year class on record. This one year class will contribute well over 100 million walleye to the fishery - and it could go as high as 150 million. Walleye fishing has been excellent the past few years, but as the word gets out about this record setting year class – it is definitely going to increase interest in this fishery. These fish should start showing up in catches in 2020, and will be legal to harvest in 2021.

Because the walleye fishery only lasts a couple of months, it is a very intense fishery and can overwhelm the current boat access sites. Knowing that this excellent fishery is about to get even better is definitely going to create bottlenecks as anglers try and launch their boats. I know you have already done an analysis on where existing launches are available, but it is very evident that there are limited locations in the upper river.

Please let me know if you have any questions or if I can provide anything further.

Jim

Jim Francis
Lake Erie Basin Coordinator
Michigan DNR – Fisheries
7806 Gale Rd
Waterford, MI 48327
248-666-9157

<St Clair System Creel 2002-05.pdf>
<The_Walleye_Fishery_of_the_Detroit_River_Spring_2000.pdf>

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES

TR2011-1

April 2011

Summary of Creel Survey Results for the St. Clair River, Lake St. Clair, and the Detroit River, 2002–05

Michael V. Thomas
and
Gary L. Towns

www.michigan.gov/dnr/

FISHERIES DIVISION

TECHNICAL REPORT 2011-1

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES
FISHERIES DIVISION

Fisheries Technical Report 2011-1
April 2011

Summary of Creel Survey Results for the St. Clair River, Lake St. Clair, and the Detroit River, 2002–05

Michael V. Thomas and Gary L. Towns

Suggested Citation Format

Thomas, M. V., and G. L. Towns. 2011. Summary of creel survey results for the St. Clair River, Lake St. Clair, and the Detroit River, 2002–05. Michigan Department of Natural Resources, Fisheries Technical Report 2011-1, Lansing.

Michigan Department of Natural Resources
Fisheries Technical Report 2011-1, 2011

Summary of Creel Survey Results for the St. Clair River, Lake St. Clair, and the Detroit River, 2002–05

Michael V. Thomas

Michigan Department of Natural Resources, Lake St. Clair Fisheries Research Station, 33135 S. River Road, Harrison Township, Michigan 48045

Gary L. Towns[1]

Michigan Department of Natural Resources, Southfield Operations Service Center, 26000 West Eight Mile Road, Southfield, Michigan 48034-5916

Abstract.–For decades, the St. Clair River, Lake St. Clair, and the Detroit River (collectively referred to in this report as the St. Clair System) have supported recreational fisheries based on self-sustaining populations of muskellunge, smallmouth bass, walleye, white bass, and yellow perch. These waters were last creel surveyed in 1983–85. Since that time, extensive ecological changes have taken place and the fish community has changed in response. An on-site creel survey was conducted from April 2002 to February 2005 to document the fishing effort, catch, and harvest for boat anglers on the Michigan portions of the St. Clair System and for the ice fishery on Lake St. Clair. We found that overall annual fishing effort across the St. Clair System from April 2002 to March 2003 (the time period with the most complete data) exceeded 3.0 million angler hours, a decline of 13% from the 3.4 million angler hours estimated by creel survey for the same waters 20 years earlier. This decline was minor in comparison with drastic declines in fishing effort documented by angler surveys at other areas on Michigan waters of the Great Lakes. Numerically, white bass dominated the harvest in the Detroit River, yellow perch dominated the harvest in Lake St. Clair, and walleye dominated the harvest in the St. Clair River. Large numbers of smallmouth and largemouth bass were caught, but few were harvested. A high proportion of the muskellunge that were caught were also released. When compared with the harvest 20 years earlier, walleye, smallmouth bass, and white bass harvests declined 31%, 46%, and 78%, respectively. Declines in population abundance were identified as likely factors in the reduced harvests for walleye and white bass. Reductions in smallmouth bass harvests were attributed to increased voluntary practice of catch-and-release by bass anglers. The costs for conducting this creel survey were substantial ($316,964 annually) and included six seasonal creel clerks (fisheries assistants) and a private aviation business for aerial boat counts. However, the estimated annual economic activity generated by just the boat and ice fisheries on the St. Clair system, exceeded $36.4 million. This estimate was a minimal or conservative estimate because the creel survey did not cover all aspects of the fishery in the St. Clair System (for example, shore fishing and night fishing were not included). If the shore fishery and night fishery had been monitored with the creel survey, we expect that the total annual fishing effort expended by anglers on the system from 2002 to 2005 would have approached 40% of the total effort expended on all of Michigan's Great Lakes waters combined. We submit that a fishery supporting this level of participation, affecting fish populations shared with other jurisdictions, and generating substantial economic activity should be creel surveyed regularly, and more frequently than every 20 years.

1 Retired

Introduction

Sound fisheries management requires knowledge of both the response of fish stocks to fishing and the contributions of various fish stocks to the fisheries. Angler or "creel" surveys are vital to this task because they provide site-specific estimates of angling effort, fishing mortality and species-specific biological information (length, weight, age, hatchery origins, etc.). Additionally, creel surveys collect a wealth of other information on angler demography, fishing behavior, site fidelity, and knowledge of and compliance with fishing regulations.

Since 1986, Michigan's Department of Natural Resources (DNR) has conducted a statewide and continual creel survey of the boat, shore, and pier and ice fisheries in lakes Michigan, Huron, Superior, and Erie. However, the fisheries of the St. Clair System (St. Clair River, Lake St. Clair, and the Detroit River) have not been continuously monitored in this way. Prior to the present study, intensive creel surveys of the St. Clair System were done only twice; once in 1942 and 1943 (Krumholz and Carbine 1943 and 1945), and once from April 1983 through March 1985 (Haas et al. 1985). The Detroit River fishery alone was also surveyed in the spring of 2000 (Francis 2005).

In 2000, approximately 4.2 million of a total Michigan human population of 9.9 million resided within a one hour drive of the St. Clair System (SEMCOG 2002). In addition, over 50% of all Michigan registered boats kept in marinas, and 41% of all registered boats kept at private waterfront residences, were found in the four counties bordering the St. Clair System and Lake Erie (Stynes et al.1998). The reasons most often cited for not conducting a creel survey on the St. Clair System is the multiple access points and the complexity of the fisheries, which necessitate a large and expensive creel effort. For an effective access-site creel survey of the numerous boating and shoreline access locations, the costs of multiple creel clerks and an aerial survey must be supported. Another reason is that the vast majority of the system's fisheries are supported by self-sustaining sport fish populations, with little or no dependence on stocked fish. This is in contrast to many other locations in Great Lakes waters where large numbers of fish are stocked to support fisheries, and creel surveys are used to assess the survival and success of those stocking efforts.

The St. Clair System underwent major ecological changes during the late 1980s. Zebra mussels colonized, round gobies were introduced, pollution controls reduced nutrient inputs, water levels peaked and then declined, and aquatic macrophytes increased in densities and distribution (MacIsaac 1996). The fish community responded to these changes in habitat. The growing volume of aquatic macrophytes provided smallmouth bass and muskellunge (common and scientific names of fishes mentioned in this report are in Appendix A) with increased spawning and nursery habitat and they became more abundant and widely distributed (MacLennan 1996). Walleye recruitment from the Thames River stock declined, possibly due to reduced larval food availability caused by mussel filtering of algae and zooplankton, or increased predation on juveniles by smallmouth bass and muskellunge. As water clarity increased due to mussel filtering, a preference for low light conditions drove walleye to deeper water and places with higher turbidity, such as the shipping channels or the water masses from tributaries such as the Thames or Sydenham Rivers (Figure 1), which caused them to become less widely distributed.

In light of these extensive changes in the ecology of the St. Clair System, DNR Fisheries Division scheduled a three-year creel survey to begin in April 2002. The primary objective of this creel survey was to measure angler effort, harvest, and catch for the boat fishery throughout the St. Clair System and the ice fishery on Lake St. Clair. Unfortunately, due to limited resources, the creel survey excluded the shore and night fisheries, both of which are known to be quite extensive (DNR Fisheries, unpublished data).

Study Area

The St. Clair System is comprised of the St. Clair River, which to the north connects to Lake Huron, Lake St. Clair, and the Detroit River, which to the south, connects to Lake Erie. The St. Clair River is approximately 70 kilometers (43.5 miles) in length, has a maximum natural depth of 30.5 m (100 ft), a mean depth of 11 m (36.1 ft) and a surface area of 37.7 km² (14.6 mi²). The watershed encompasses a total of 3,290 km² (1,270 mi²) and contains three major sub-watersheds, including those of the Black, Belle and Pine Rivers. As the St. Clair River enters Lake St. Clair it divides into a number of channels to form a large delta marsh. The historical mean discharge of the river is approximately 5,100 m^3/s (181,870 ft^3/s) with current velocities exceeding 1.4 m/s (4.6 ft/s) (Derecki 1984a; Griffiths et al. 1991). The DNR operates three public access sites from Port Huron to Algonac for anglers to launch their boats. There are municipal boat launch sites and dozens of marinas and private access sites anglers use also, including private residential docks and boat wells. Fishing activity is widespread along the length of the river, with much of the pressure focused on walleye. Cold water species, including both trout and salmon, are present during the fall, winter, and spring and attract anglers seasonally.

Lake St. Clair is 38.6 km (24 miles) wide and 41.8 km (26 miles) long with a surface area of 1,100 km^2 (425 mi^2) (Bolsenga and Herdendorf 1993). Approximately one-third of its surface area is Michigan waters, and two-thirds Ontario waters. Lake St. Clair is shallow with an average depth of 3.0 m (9.8 ft), maximum natural depth of 6.4 m (21 ft), and maximum dredged depth of 8.0 m (26.2 ft) within the shipping channel measured from Low Water Datum for Lake St. Clair (NOAA 1997). The lake receives the majority of its inflow from the St. Clair River (97%). Other major rivers which discharge to the lake include the Clinton (listed as a federal area of concern), Sydenham and Thames (Figure 1). Average hydraulic retention time of the lake is approximately seven days (Bolsenga and Herdendorf 1993).

The Lake St. Clair fishery is rather unique as it is a much smaller lake than any of the Great Lakes which surround Michigan, and has multiple access points, including five DNR operated boat launch sites, and a configuration which allows smaller boats to use the water under a wider variety of weather scenarios. The fishery is more typical of fisheries in large embayments of the upper Great Lakes such as Saginaw Bay of Lake Huron and the Bays De Noc of northern Lake Michigan. The anglers in Lake St. Clair are focused on self-sustaining populations of yellow perch, walleye, muskellunge and smallmouth bass.

The Detroit River is approximately 50 kilometers (31 miles) in length, and is dredged to maintain a depth of 8.2 m (27 ft) in the shipping channels. Before the completion of the navigation system in 1969, natural water depths averaged 6.0 to 7.6 m (19.7 to 25 ft) (Manny et al. 1988). The Detroit River watershed covers approximately 1,976 km² (763 mi²). Current velocities in the Detroit River exceed 1.7 m/s (5.6 ft/s) (Quinn and Kelley 1983), the average flushing time is 20 hours and mean discharge is 5,200 m^3/s (183,643 ft^3/s) (Derecki 1984b). The upper river consists of a single, well-defined channel about 700 to 1,000 m (2,297 to 3,281 ft) wide (Derecki 1984b), while a number of islands divide the lower river into distinct channels, which have been dredged for navigational purposes. There are numerous municipal boat launch sites and dozens of marinas and private access sites anglers use, and fishing activity is widely distributed, along the length of the river. While walleye have long been a primary focus of much of the fishing activity on the Detroit River, other species such as white bass, yellow perch, and smallmouth bass have also been important components of the fishery.

Methods

An on-site creel survey was conducted from March 2002 through February 2005 along the US side of the St. Clair River, Lake St. Clair, and the Detroit River. The entire system was divided into 20 grids, loosely based on a 10’ latitude by 10’ longitude grid system. For the purposes of this survey, the St. Clair River was defined as the waters encompassed by grids 515 to 519, Lake St. Clair was defined as the

waters included in grids 506 to 514, and the Detroit River included the waters encompassed by grids 500 to 505 (Figure 2).

A “two-area” sampling design is typical for a DNR fisheries creel survey. Therefore, each river was divided into two areas; an upper section and a lower section. One clerk was hired to creel each river, alternating their time between the two sections. Lake St. Clair was divided into three areas (southern, central, and northern) with a single creel clerk assigned to each area. Further details on the schedules, areas, and access locations surveyed within those areas are presented in Appendix B.

The creel survey was based on a stratified design using three-stage sampling (i.e., the stages are days, shifts and count times) within strata. Strata included grid fished by month, by day-type (weekday-weekend/holiday), and by mode of fishing. Catch and effort estimates were made for each stratum and then combined to give monthly and seasonal figures.

Both weekend days and three randomly selected weekdays were sampled each week. The entire angling day from dawn to dusk was covered in each month. This was accomplished by breaking each day into two 8-hour work shifts, then randomly selecting one shift to be worked. The first shift began at daylight and ended in the afternoon; the second shift began in mid-morning and ended at sunset. Monthly shift lengths varied due to varying length of daylight among months.

When an individual was responsible for sampling more than one area, the site for interviewing for each clerk was also randomly selected for each day. Two types of data were collected for each area sampled: angler party interviews for catch rates and angler (or boat) counts for effort. An angler party was defined as one or more anglers who fished together.

The clerk interviewed each boat that returned to the access site during the scheduled shift. Angler party interview data were recorded on a Scantron® bubble form (Appendix C). Date, time and interview site were recorded for all interviews. If the boater did not fish, that was recorded on the form as a non-fishing party and the interview was ended. If fishing did take place, anglers were queried as to their mode of fishing (i.e., boat, open ice, or shanty ice), where they fished, how long they fished, what they fished for, the numbers (by species) of fish they caught and numbers kept, and the number of fishing trips they made or intended to make that day. Additional data were collected for one member of each party such as age and sex, zip code or county of residence, and the types of angling method used (casting, still fishing, trolling, etc.). If fishing took place in Canadian waters or outside the survey area (for example, Lake Erie or Lake Huron), the data were recorded, but these interviews were excluded from analysis. No effort was made to survey shore anglers.

Fishing effort was determined through instantaneous counts of boats made from airplanes. Local flight service companies were contracted to make the aerial counts. Five flights were made each week at randomly selected starting times. The days aerial counts took place corresponded to the days clerks interviewed anglers at the access sites. All boat counts were recorded on count data forms by contract pilots. The proportion of boaters interviewed by creel clerks, who indicated they were not fishing was used to adjust the aerial counts for non-fishing effort.

Newly hired, seasonal creel clerks were trained on-site by permanent fisheries technicians at the beginning of the field season. Count and interview data forms, completed by creel clerks were reviewed throughout the field season at Charlevoix Fisheries Research Station prior to computer entry. The software used for data entry employed range checks on various data fields for each count or interview record that was keyed. In addition, a module of the creel catch estimation software performed a final check of the data before estimates were made.

Effort estimates were made for each grid by month. Three measures of fishing effort were calculated: angler hours, angler trips and angler days. An angler trip is one completed fishing excursion. An angler day is composed of one or more fishing excursions during a 24-hour period. Harvest estimates were made for each grid by month for all fish species observed in the harvest by creel clerks. Catch estimates, which are numbers of harvested and legal-sized released fish, were made for each grid by month for certain fish

species, including largemouth bass, muskellunge, northern pike, smallmouth bass, walleye, and white bass.

Standard mathematical formulas for creel survey (Lockwood et al. 1999) were used to calculate all estimates. Uncertainty estimates for all catch and effort estimates in this report are defined as two standard errors of their mean estimates (2 times the square root of the variance for an estimate). Error bounds for all mean length and weight data are 95% confidence limits. Statistical significance in the analysis comparing lake-wide or port estimates between years is based on two standard errors.

Creel clerks also collected biological data from harvested fish encountered during on-site interviews. Biological data collected included total length and weight for muskellunge, northern pike, smallmouth bass, walleye, and yellow perch. Dorsal fin spines or rays were also collected from walleye, smallmouth bass, muskellunge and northern pike for age estimation. We used these structures because we thought they provided the best combination of ease of collection in the field and accuracy and precision of age estimates (Clark et al. 2004). Monthly target sample sizes for age analysis were based on a minimum number needed to provide a reasonable representation of the age structure of the harvest each month, balanced with the logistical feasibility of the creel clerk to collect biological data samples without negatively affecting angler interview numbers.

Samples were sectioned using a table-mounted Dremel® rotary cutting tool. Sections approximately 0.5 mm thick were cut as close to the proximal end of the spine or ray as possible. Sections were examined at 40x-80x with transmitted light, and were photographed with a digital camera. The digital image was archived for multiple reads. We tested for differences in mean lengths at age using a two-way analysis of variance, controlling for age as a covariate. Statistical significance was set at $\alpha = 0.05$.

There were two portions of this creel survey which were compromised by creel clerk fabrication of data. As a result, we did not include any estimates for the Detroit River creel survey in 2003 and the St. Clair River creel survey in 2004. Furthermore, the 2002 creel survey schedule started in April, so it did not record the winter ice fishery on Lake St. Clair during that year. In addition, the 2005 schedule only included creel survey of the ice fishery on Lake St. Clair during January and February, but the actual ice fishery continued through March. These gaps confounded efforts to compile system-wide estimates of annual effort, harvest, and catch. So, to allow comparisons of the fishery on the St. Clair System from 2002–05, with earlier creel surveys on the St. Clair System, or with creel surveys on other portions of the Great Lakes, it was necessary to summarize the data in an alternative manner.

For example, to allow direct comparisons of the system-wide estimates of effort and harvest with the creel survey in 1983–85 (Haas et al. 1985), we summarized the estimates for the St. Clair System from April 2002 to March 2003 and compared them with estimates for the St. Clair System for the period from April 1983 to March 1984. Likewise, to make comparisons between St. Clair System effort estimates and other areas of the Great Lakes, we used the average from the adjoining two years for the same water body in cases where effort was either not measured or compromised, to fill in gaps and allow valid comparisons across all waters.

Results

St. Clair River

Harvest and effort were estimated for April to October 2002 (Table 1), and April to October 2003 (Table 2). Estimates for April to October, 2004 were possible, but were deemed unreliable due to documented creel clerk data falsification. July was the month for peak effort on the St. Clair River in both 2002 and 2003, followed by June and August. The average boat fishing effort was 194,000 hours, with an increase from 172,303 hrs in 2002 to 215,926 hrs in 2003, or by about 21%. Averaged effort during this survey was approximately 59% of the earlier periods. During the 1942-43 fishing seasons in the St. Clair

River effort averaged 329,975 angler hours (Krumholz and Carbine 1943 and 1945). Haas et al. (1985) reported that fishing effort by boat anglers averaged 365,108 hours during the creel survey in 1983 and 84.

Twelve fish species were observed in the St. Clair River harvest. Numerically, walleye dominated the harvest both years, with yellow perch second in numbers harvested. Some salmonids, including brown trout, Chinook salmon, coho salmon, and rainbow trout were observed in the harvest each year, mainly during the spring months. Between 2002 and 2003, harvest totals increased for walleye, yellow perch, smallmouth bass, and largemouth bass by 52%, 22%, 448%, and 221% respectively (Table 3).

Despite the increase in effort, harvest rates for walleye, smallmouth bass, northern pike, muskellunge and largemouth bass also improved, further contributing to increased harvest totals. When catch estimates were compared with harvest estimates, noted differences in percentage of fish released were apparent (Table 4). Walleye were rarely caught and released, while smallmouth bass were rarely caught and kept.

Lake St. Clair

Harvest and effort were estimated for March to October 2002 (Table 5), January to October, 2003 (Table 6), January to October 2004 (Table 7), and January and February, 2005 (Table 8). For open water months, fishing effort was low in April and May on Lake St. Clair, with peak effort taking place in June or July. Ice fishing effort was substantial, accounting for about 34% of the total effort in 2003, and about 37% of the total effort in 2004.

Twenty-two fish species were observed in the Lake St. Clair harvest across all years. Numerically, yellow perch heavily dominated the harvest during all years and during both the open water and ice fishing seasons. Walleye and bluegill were second and third in the harvest across all years of the survey. A few salmonids, including brown trout, Chinook salmon, coho salmon, and rainbow trout were observed in the harvest each year, mainly during the spring months. Although annual estimates for total harvest and effort are presented in Table 9, it is important to recognize that the 2002 survey only included the open-water fishery, while the 2005 survey only included part of the winter ice fishery.

Comparisons of 2003 and 2004 results can be made because both covered January through October. When compared with 2003, harvest increased slightly in 2004 for yellow perch (2%), but declined drastically for walleye (-65%), yet fishing effort changed very little between 2003 and 2004, with only a 5% decline. As in the earlier studies (Krumholz and Carbine 1943; Krumholz and Carbine 1945: Haas et al. 1985), yellow perch dominated the harvest from 2002 to 2005. This was especially true for the ice fishery, where well over 90% of the fish harvested over the three ice fishing periods in 2003, 2004 and 2005 were yellow perch.

The large decline in walleye harvest from 2003 to 2004 was primarily a result of a 63% decline in the harvest rate for anglers. Walleye catch rates declined similarly (Table 10) indicating that anglers were not releasing more walleye in 2004. When catch estimates were compared with harvest estimates, large differences in percentage of fish released were apparent (Table 11). For largemouth bass, at least 96% of the fish caught were released each year from 2002 to 2004. Similarly, at least 91% of the smallmouth bass caught were released each year. Conversely, the percentage of walleye caught and released ranged from only 10% in 2003 to 18% in 2004. Clearly, harvest was the objective with the majority of walleye anglers, while harvest was rarely practiced by bass anglers. In general, muskellunge and northern pike were also rarely harvested, with at least 60% or more of those fish caught, subsequently released by anglers.

Detroit River

Harvest and effort were estimated for March to October 2002 (Table 12), and March to October 2004 (Table 13). Estimates for April to October, 2003 were possible, but were deemed unreliable due to suspected creel clerk data falsification. Fishing effort in 2002 was highest in April, followed by June, July and May. In 2004, June was the peak month for effort, followed by July, April and May. Angling effort on the Detroit River in 2002 and 2004 averaged over 849,000 angler hours. This was well above the average angler effort in 1983 and 1984 (Haas et al. 1985) and is possibly the only substantial fishery in the Great Lakes waters of Michigan which increased between the early 1980s and early 2000s.

Sixteen fish species were observed in the Detroit River harvest. Numerically, white bass dominated the harvest during both years, followed by walleye and yellow perch. The catch and harvest of white bass exceeded that of all other species in both 2002 and 2004, with an average of 206,959 fish harvested annually. When compared with 2002, harvest declined in 2004 for most species (Table 14). This decline was at least partially a function of a 6% decline in fishing effort in 2004. Despite lower effort, harvest for some species increased substantially in 2004, including pumpkinseed (68%), smallmouth bass (215%), white perch (214%), and yellow perch (99%). These increases were a result of substantially higher harvest rates for those species.

When catch estimates were compared with harvest estimates, noted differences in percentage of fish released were apparent (Table 15). Walleye was the species with the lowest percentage released, followed by white bass. In contrast, over 90% of the smallmouth and largemouth bass caught each year were released. Similarly, over 90% of the muskellunge and 83% of the northern pike caught each year were reportedly released.

Biological Data of Harvested Fish from the St. Clair System

Creel clerks collected biological samples from over 8,900 fish during on-site sampling from 2002 to 2004. Samples were collected from 11 different fish species, but yellow perch (46%), walleye (43%), and smallmouth bass (10%) combined to account for 99% of the samples (Table 16). Lake St. Clair accounted for 78% of the samples, while the Detroit and St. Clair Rivers accounted for 15% and 6% respectively.

Yellow perch sampled by creel clerks ranged from 104 mm (4.1 in) to 358 mm (14.1 in) in total length, with a mean total length of 231 mm (9.1 in). Mean lengths for yellow perch across water bodies was nearly identical (Table 17). In all three years, more than 70% of the yellow perch harvested exceeded 203 mm (8 in) in total length (Figure 3). There was no difference in the length frequency distribution of yellow perch between the three years.

Walleye ranged from 315 mm (12.4 in) to 780 mm (30.7 in) in total length, with a mean total length of 475 mm (18.7 in). The mean length for Detroit River walleye was significantly higher than for Lake St. Clair or St. Clair River walleye (Table 17), but the longest walleye measured came from the St. Clair River. Ages for walleye sampled ranged from 1 to 18 years, with a mean age of 4.4 years (Table 18). The mean age for Detroit River walleye was significantly higher than for Lake St. Clair or the St. Clair River. The 1999 year-class dominated the harvest as age-3 fish in 2002 and age-4 fish in 2003 (Figure 4). In 2004, the 2001 year-class was most abundant in the harvest, with the 1999 year-class also an important component.

Smallmouth bass ranged from 317 mm (12.5 in) to 559 mm (22.0 in) in total length, with a mean total length of 404 mm (15.9 in). The longest smallmouth bass measured came from Lake St. Clair, but there were no significant differences in mean lengths between the three water bodies (Table 17). Ages for smallmouth bass sampled ranged from 3 to 12 years, with a mean age of 5.1 years (Table 18). The 1998 year-class dominated the harvest as age-4 fish in 2002 and age-5 fish in 2003 (Figure 5). In 2004, the 1999 year-class was most abundant in the harvest, with the 1998 year-class also an important component.

Angler Demographics from the St. Clair System

Creel clerks conducted over 50,000 interviews from 2002 through 2005 at sites along the connecting waters. Over 23,000 of those interviews were for parties that reported recreational fishing activity. The average party size was two anglers and Michigan resident anglers accounted for 96% of the interviews (Table 19). Creel clerks interviewed non-resident anglers that resided in 29 states spread across the United States from California to North Dakota and from Texas to Virginia. Indiana and Ohio accounted for the most non-resident interviews at 1.2% and 1.5% respectively.

Michigan resident anglers came from 70 counties across the state. For the St. Clair River, the most common Michigan counties of residence for interviewed anglers (Table 20) were St. Clair (47%), Macomb (22%), and Oakland (8.4%). The most common Michigan counties of residence for anglers interviewed at Lake St. Clair sites were Macomb (58%), Oakland (14%), Saint Clair (10%), and Wayne (6%). Over 53% of the resident anglers interviewed at Detroit River sites originated from Wayne County, while Oakland and Macomb Counties accounted for 10% and 9% respectively. The average trip length was around 4.5 hours.

Over 76% of the anglers interviewed at St. Clair River sites reported walleye as their target species (Table 21). Smallmouth bass, salmon and trout, and yellow perch were the other major target species for the St. Clair River.

For Lake St. Clair, 52% of the anglers interviewed were targeting yellow perch (Table 21). However, the Lake St. Clair creel survey included both open-water fishery and the winter ice fishery, which differed markedly (Table 22). Boat anglers interviewed at Lake St. Clair sites targeted walleye (28%), yellow perch (23%), smallmouth bass (17%), and anything (14%). In contrast, almost 98% of the ice fishing anglers interviewed sought yellow perch.

Over 70% of the anglers interviewed at Detroit River sites reported walleye as their target species (Table 21). Yellow perch, anything and smallmouth bass were the other major target species reported by Detroit River anglers. However, the catch and harvest of white bass exceeded that of all other species in both 2002 and 2004, but interestingly, no anglers reported white bass as a target species (Table 21). In fact, 35% of the interviewed anglers who harvested white bass reported that they were fishing for “anything”, 42% reported they were fishing for “walleye”, and 14% reported they were fishing for panfish. So, although it appeared that few anglers were actively targeting white bass, it was clear that many anglers who were interested in harvesting fish for food considered white bass to be acceptable table fare.

Jigging was the most frequently used method of fishing for all anglers interviewed during the creel survey when the data were pooled across water bodies and species targeted (Table 23). By species, the most popular method of fishing varied greatly. For salmon and trout, 91% of the anglers interviewed reported trolling as their method of fishing. Casting was the most popular method of fishing for largemouth and smallmouth bass anglers, but drifting was also an important method for smallmouth bass fishing. Walleye fishing was fairly evenly split between drifting, jigging, and trolling. About 78% of muskellunge fishing was accounted for by trolling, but casting was a substantial part of the muskellunge fishery at 19%. For yellow perch fishing, jigging and still fishing combined to account for 89% of the fishery.

Discussion

When boat, open ice and shanty ice fishing effort from April 2002 to March 2003, were combined for the St. Clair System, it totaled over three million angler hours (Table 24) or 625,568 angler days. Over the past 20 years, large declines in sport fishing effort have been apparent across all the Great Lakes with estimated numbers of anglers fishing Michigan waters of the Great Lakes dropping from 1.3 million in

1985 (United States Department of the Interior, Fish and Wildlife Service and United States Department of Commerce, Bureau of Census 1989) to 461,000 in 2006 (United States Department of the Interior, Fish and Wildlife Service and United States Department of Commerce, Bureau of Census 2008). Surprisingly, fishing effort on the St. Clair System as a whole has remained relatively stable when compared with other areas of the Great Lakes. For example, Rakoczy (1992) reported a near steady decrease of boat angler effort in Lake Michigan in the late 1980s and early 1990s where effort in 1991 was approximately 50% of what it had been in 1985-86. Fishing effort measured during this survey represented only a 14% decline from the total of 3.5 million angler hours estimated for the survey period 20 years earlier (Table 24). Factors contributing to the relative stability of the fishing effort in the St. Clair System are unclear.

In addition to a system-wide decrease in effort, harvest of walleye was lower during the recent survey period by 31% (Table 24). We attribute the decline in the walleye harvest in the St. Clair System to lower abundances during the recent survey period. Walleye dispersing from, and returning to, spawning locations in Lake Erie are known to contribute heavily to the walleye harvest in the St. Clair System and even further north into Lake Huron, based on tag recoveries and genetic analyses (Haas et al. 1988; McParland et al. 1999; Belore et al. 2010). Recent population modeling estimated that Lake Erie walleye abundance exceeded 54 million age-2 and older fish in 1983, but had declined to about 16 million fish by 2002 (Thomas et al. 2007). Additionally, the walleye stock in the Thames River, the largest Ontario tributary to Lake St. Clair, and an important contributor to the sport fishery in the St. Clair River during the 1980s, also declined greatly during this same time period.

Decreases in walleye harvest measured by a daytime creel survey can also be explained by changes in the behavior of foraging walleye and by the introduction of round gobies. Over this 20-year time period, water clarity has increased as a result of both pollution abatement and bio-filtering by exotic dreissenid mussels. Walleye preference for low light conditions during feeding has contributed to less productive daytime fishing, as the fish have shifted to foraging more extensively at night. Drift fishing for walleye using earthworms on crawler harnesses has long been a popular walleye fishing technique on the St. Clair River. However, after the round goby invasion, this technique became impractical because the round gobies quickly removed the earthworms from the hooks. Some walleye anglers likely stopped fishing for walleye in the St. Clair River or switched to fishing after dark when gobies are inactive. Ultimately, walleye harvest occurring after dark may well have increased, but went unmeasured in the creel survey.

While walleye were the principal species targeted by anglers on the St. Clair River, and lower walleye abundances in recent years probably contributed to lower angler effort there, the Detroit River spring walleye fishery has grown in popularity over the past 20 years. Media exposure has played an important role in increasing the fishing effort in the Detroit River during this latest creel survey as the popularity of this fishery has been increasingly documented by numerous written articles and television fishing shows recording walleye fishing trips on the Detroit River during March and April. This spring fishery, which overlaps with walleye spawning, has been associated with some controversy. There has been public concern that too many “spawners” are taken from the Detroit River each spring during the intensive fishery from March through May.

In order to address that concern, tagging studies were used to provide evidence of substantial movement of walleye from spawning locations in Lake Erie northward through the Detroit River, Lake St. Clair, the St. Clair River, and further into Lake Huron (Thomas and Haas 2005). Tagged walleye recoveries and catch locations have allowed crude estimates to be made of the number of Lake Erie walleye migrating into the Detroit River on an annual basis. Based on the geographical distributions of tag recoveries from various tagging sites in Lake Erie, the number of migrants leaving Lake Erie and migrating north into the St. Clair System is roughly 10% of the adult population abundance of walleye in Lake Erie (Robert Haas, DNR, personal communication). For example, when the Lake Erie adult walleye population was near 60 million in 1984 (Thomas et al. 2007), there were likely six million walleye migrating through the St. Clair System. Similarly, when the Lake Erie adult walleye population declined

to near 14 million fish in 2004, the estimated number of walleye migrating through the St. Clair System was probably around 1.5 million fish.

Creel survey estimates for the walleye harvest during the spawning run (March through May) in Michigan waters of the Detroit River were only 105,427 in 2002 and 51,899 in 2004. The walleye harvest in the Detroit River was also estimated in 2000 with a 9-week creel survey from March 11 to May 16 (Francis 2005), which resulted in an estimated harvest of 97,292 walleyes. The average of these three harvest estimates (84,873) is only 6% of the lowest estimate of the Detroit River walleye run of 1.4 million for the time period. So, even in the years of the lowest walleye runs in recent times, we estimate that 95% of the walleye "spawners" migrating north from Lake Erie escape Michigan Detroit River anglers.

There are additional walleye caught on the Canadian side of the river, which were not included in these creel surveys. However, limited access sites in Ontario and much lower human population densities, combined with anecdotal information from anglers, leads us to believe that fewer walleye are taken on the Canadian side (compared to the Michigan side) of the Detroit River each spring. In summary, the combined Michigan and Ontario catch of spawning adult walleye each spring is very likely less than 10% of the entire walleye run.

When compared with the 1980s creel survey results, system-wide harvest of yellow perch was 17% lower during the recent survey period, closely matching the decline in effort (Table 24). Despite this, the popularity of the Lake St. Clair ice fishery for yellow perch appears to have expanded over the last 20 years. In the two winters of 1983-84 and 1984-85 ice anglers fished an average of just over 467,000 hours (Haas et al. 1985). However, in Jan-March of 2003 and 2004 the average ice angling effort was over 632,000 hours on Lake St. Clair. However, when climatic conditions result in no ice, or unsafe ice, the winter fishery effort is much reduced, such as occurred in January and February of 2005, when the ice angling effort was less than half of the same period in the two previous years (Tables 6, 7 and 8). Technological advances in ice fishing gear, such as portable shanties, portable fish locators, underwater video cameras, light-weight winter fishing apparel, and small off-road vehicles all have likely contributed to increased angler comfort and participation in this winter sport on Lake St. Clair.

Smallmouth bass harvest was 33% lower during the period from April 2002 to March 2003, than during the creel survey 20 years earlier on the St. Clair System (Table 24). We attribute this large decline in harvest primarily to a shift in angler behavior. While the estimated smallmouth bass harvest in 2002 was only 13,710, the estimated catch was over 186,000 for the same period. This suggests that few anglers are interested in harvesting smallmouth bass, and now they practice catch-and-release fishing. Angler behavior was similar for largemouth bass. During earlier creel surveys, harvest was measured, but no data on released fish was recorded, so it is not possible to quantitatively evaluate differences in practice of catch-and-release between the earlier creel surveys and the most recent creel survey. However, we are confident that anglers harvested a much higher proportion of the smallmouth bass, largemouth bass and muskellunge caught in the early 1980s. The increased practice of catch-and-release reflects changing attitudes among anglers to preserve and help manage fish populations for higher catch rates and larger individual fish.

White bass experienced the largest decline in harvest, with a 75% reduction in total number harvested from the St. Clair System in 2002-03, when compared with 1983-84 (Table 24). During both time periods, nearly all of the white bass harvest occurred in the Detroit River and mostly during the spawning run in May and June. Lake Erie white bass populations also declined during the early 1980s, and remained depressed through the 1990s. This decline was attributed to the white perch invasion which resulted in reduced survival of white bass during its early life history (Madenjian et al. 2000). We suspect that this trend in lower abundance of white bass was an important factor in the large decline in white bass harvest indicated by the 2002-03 creel survey.

For various reasons, some segments of the sport fishery in the St. Clair System were not well represented in the creel survey results for 2002 to 2005. For example, a small but growing lake sturgeon

fishery exists in the St. Clair River, but nearly all of the effort in the fishery occurs after dark, so it was not detected by the creel survey. Mooneye, a state-listed endangered species, are often caught by walleye anglers fishing in the St. Clair River delta channels. Mooneye harvest is not legal anywhere in the State, and none were observed in the harvest during the creel survey. Unfortunately, the creel survey data recording forms did not include a space for recording released mooneye, so their presence in the system remained undocumented by the survey.

In the St. Clair River, some species harvested in large numbers in the earlier time period (Haas et al. 1985), such as redhorse suckers, white bass, and freshwater drum, were nearly absent in the harvest during 2002 and 2003. These data may reflect changes in the fish community, but likely were related to changes in angler preference or attitude. Fish consumption advisories which warned anglers about contaminants in Great Lakes fish had been published in this time period. Consumption advisories can affect angler behavior, reducing or redirecting fishing activity and harvest (Jakus et al. 1997; Burger 2004). The Michigan Department of Community Health has advised restricted consumption for a variety of fish species from St. Clair System waters. Some fisheries biologists have speculated that media reports of chemical contaminants in Great Lakes fish, along with consumption advisories, have convinced some anglers that consuming any fish from any Great Lake or connecting water is a health risk.

Although muskellunge was the fourth most sought-after species among Lake St. Clair boat anglers, very few were harvested and therefore practically no biological data on the harvest was acquired during the creel survey. In fact, only eight muskellunge were sampled for length, weight, and age by the creel clerks during the three years of survey on the system. Similarly, the sturgeon fishery in the St. Clair River was not measured by this creel survey as most of the effort occurs after dark. To measure or monitor these types of specialized segments of the fishery, managers can not rely on the standard creel survey, but must use alternative strategies. A cooperative angler diary program has been in place for monitoring the sport fishery of the St. Clair System since 1986. This program, supported by both the DNR and Ontario Ministry of Natural Resources, has proven successful in monitoring trends in catch rates for muskellunge, catches of rare species such as mooneye, and has provided biological samples from released fish (Thomas and Haas 2004). A mail survey has recently been completed of Michigan sturgeon anglers fishing the St. Clair System and this survey has provided valuable data on participation, effort, and catch for that unique fishery (Towns and Thomas 2011).

From 1993 to 2002, the DNR stocked the St. Clair River with an average of 43,628 yearling brown trout in an effort to develop a coldwater fishery. While anecdotal reports of angler catches seemed to support this stocking effort, the creel survey documented very few catches. All recorded brown trout catches occurred in April of both years (Tables 12 and 13), but it is possible that this fishery peaked in months which were not surveyed (March, November or December) or that shore anglers were more actively involved than boat anglers in the fishery. This is supported by anecdotal angler reports (Towns, unpublished) suggesting that targeted effort for brown trout occurred mainly from shore in the Port Huron area and that fishing success was best during the winter months, dependent on ice conditions in the river.

Comparison of the results of this creel survey with published results from earlier creel surveys of the Michigan waters of the St. Clair System (Krumholz and Carbine 1943; Krumholz and Carbine 1945: Haas et al. 1985) can provide some insight into possible changes in the sport fishery through time. However, it should be noted that there were differences in survey methodology, including differences in calculations used to estimate catch rates (Lockwood 1997), between the surveys conducted in these different time periods. These differences could contribute to differences in results. Similarly, comparisons with creel survey results from other water bodies may also be complicated by differences in creel survey method or design. Therefore, direct comparisons of results between creel surveys can be challenging.

Furthermore, while estimates of fishing effort, harvest and catch produced by the creel survey on the St. Clair System from 2002 to 2005 were substantial, they were incomplete estimates of the fishery on these waters, because shore fishing from the multiple public access points, private and public marinas, numerous channels and islands and private residential and industrial sites was excluded from the survey.

Fishing activity that occurred after dark, when waters are generally calmer, recreational boat traffic is minimal, and when certain species are more vulnerable to angling (walleye and lake sturgeon) was excluded. Boat fishing activity in Michigan waters of the St. Clair System during November and December was excluded. Shore fishing was excluded. Haas et al. (1985) estimated that shore anglers harvested over 140,000 white bass from the lower Detroit River during 1983, and during this survey we noted that many shore anglers continued to fish for and harvest white bass along the lower Detroit River, but none of their catch is included with the estimates presented here. As a result, we expect that the estimates of fishing effort, harvest and catch produced by the creel survey on the St. Clair System from 2002 to 2005 may actually represent only a fraction of the total fishing activity supported by those waters during that time period.

By itself, the Lake St. Clair boat fishery (non-charter) averaged over 1.225 million angler hours (Table 25) for the three-year period from 2002 to 2004, which was greater than the estimated open water effort for Lake Superior (0.169 million angler hours) and more than 50% of Lake Huron effort (2.415 million angler hours) during the same time period. Interestingly, the St. Clair System comprises less than 1% of the total surface area of Michigan's Great Lakes waters. Yet, during the period from 2002 to 2004, nearly 30% of the annual fishing effort occurring in Michigan waters of the Great Lakes was recorded during this creel survey on the St. Clair System (Table 25). When Lake Erie data are combined with the St. Clair System estimates, an average of over 35% of the annual fishing effort in Michigan's waters of the Great Lakes took place in boats, or on the ice, along the shoreline of Southeast Michigan, between Port Huron and the Ohio border. Clearly these were the most heavily fished waters along Michigan's Great Lakes shorelines from 2002 to 2004.

The costs of conducting the boat and ice fishery creel survey on the St. Clair System from spring 2002 to spring 2005 were substantial. Total estimated salary and wages for this period were $791,339. Total travel, vehicle rental, and aerial counts were estimated at $159,552. Combined, overall costs to Fisheries Division to conduct this survey were approximately $317,000 annually for the three-year period. Efforts to better measure the other components of the fishery in these waters, such as shore fishing, night fishing, or the November and December boat fishing activity, would result in additional survey expenses. However, the annual fishing effort from boats and on the ice for the Michigan waters of the St. Clair System averaged 2.9 million angler hours (Table 25) or approximately 617,000 angler days (average 4.7 hours per angler day), generating at least $36.4 million dollars of economic activity annually (based on $59.00 per angler day: United States Department of the Interior, Fish and Wildlife Service and United States Department of Commerce, Bureau of Census 2006). So the annual costs of the creel survey represented less than 1% of the economic benefits generated by the boat and ice fishery in Michigan waters of the St. Clair System during the creel survey, and we view that expense as a wise investment in monitoring the use of this very valuable resource.

Summary

The St. Clair System is within a one-hour drive of nearly half of Michigan's population, and it provides summer and winter fishing opportunities for many self-sustaining species. Anglers fish the St. Clair System waters for recreation and subsistence. The creel survey on the St. Clair System from April 2002 to February 2005 documented that the Michigan waters of the St. Clair River, Lake St. Clair, and Detroit River (in combination accounting for only 1% of the area of Michigan's Great Lakes and connecting waters), collectively supported 29% of the annual fishing effort occurring in Michigan's Great Lakes waters during that time period. This was clearly the most intensive recreational fishery found in Michigan's Great Lakes waters. If the shore fishery and night fishery had been monitored with the creel survey, we expect that the total annual fishing effort expended by anglers on the system from 2002 to 2005 would have approached 40% of the total effort expended on all of the Michigan Great Lakes waters combined. The costs for conducting this creel survey were substantial ($316,964 annually) and included

six seasonal creel clerks (fisheries assistants) and a private aviation business for aerial boat counts. However, the estimated annual economic activity generated by just the boat and ice fisheries on the St. Clair system, exceeded $36.4 million. We suggest that while it may not be financially feasible to creel survey the entire St. Clair System annually, a fishery supporting this level of participation, affecting fish populations shared with other jurisdictions, and producing substantial economic benefits should be creel surveyed much more frequently than every 20 years.

Acknowledgments

The following DNR employees were creel clerks during the survey: John Blakey, Dawn Borsos, Justin Chiotti, Matt Currie, Mike Ferguson, Gina Gittings, Cleyo Harris, Marcy Knoll, Vic Kustokoff, Cory Kovacs, Jeremy Maranowski, Jason Pauken, Eric Plant, Heidi Purkiss, and Chuck Typinski. DNR employees of the Lake Erie Management Unit provided supervision and training for creel clerks and also filled in when clerk positions were vacant or during vacations. DNR Charlevoix Research Station staff, including David Clapp, Gerald Rakoczy, Sarah Thayer, and Donna Wesander, were instrumental in survey data entry, data quality control, and producing estimates. Zhenming Su and Tracy Kolb both provided technical assistance with the creel survey data and critical reviews of the manuscript. The creel survey on the St. Clair System was partially funded by Fish Restoration Act F-81-R Study 427, Michigan.

Figure 1.– Water flows south from Lake Huron, through the St. Clair River, Lake St. Clair, and the Detroit River, which drains to western Lake Erie.

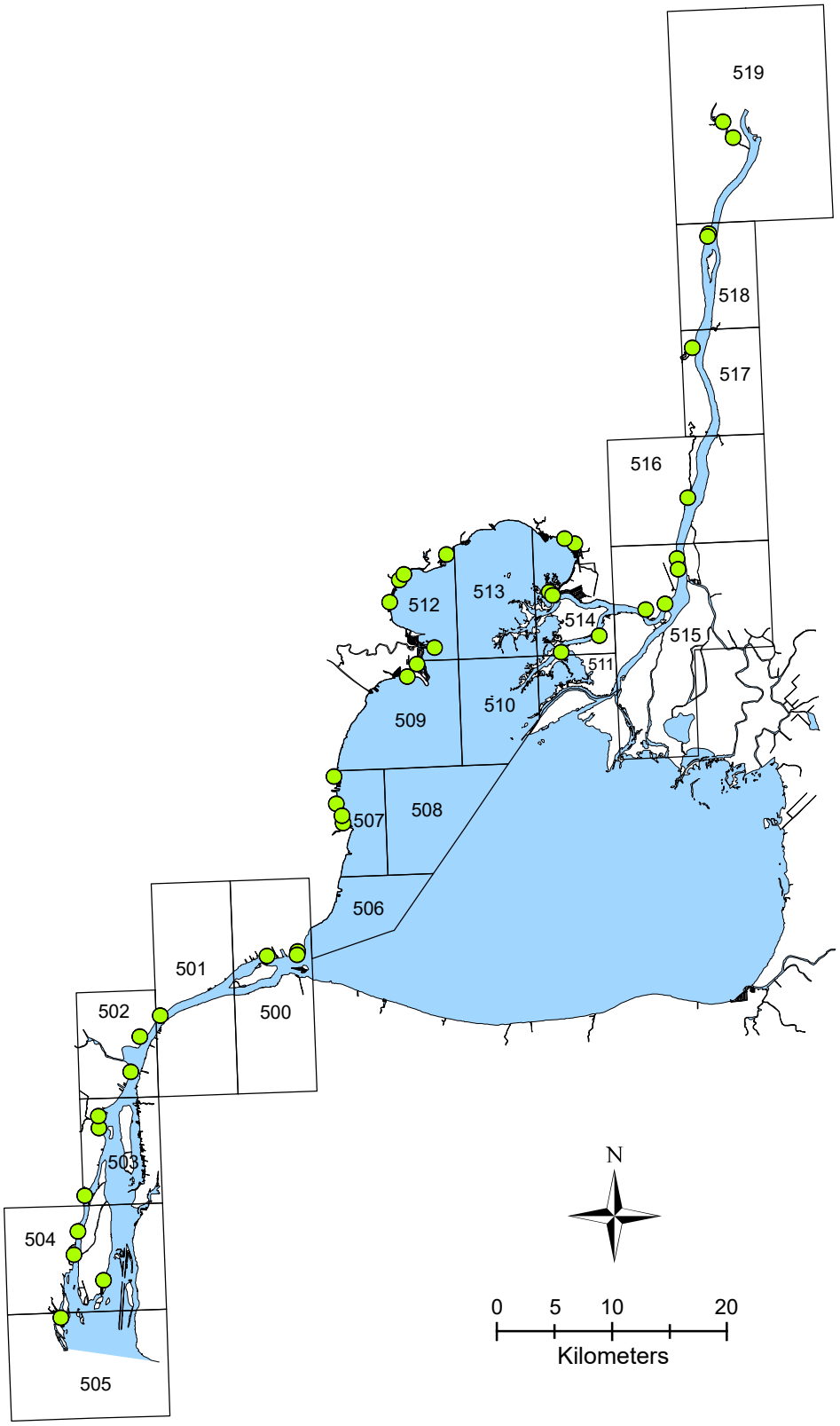

Figure 2.– Spatial grid system used for creel survey on the Detroit River, Lake St. Clair, and the St. Clair River from 2002 to 2005. Dots represent boating access points where creel clerks interviewed anglers and ice access points on Lake St. Clair.

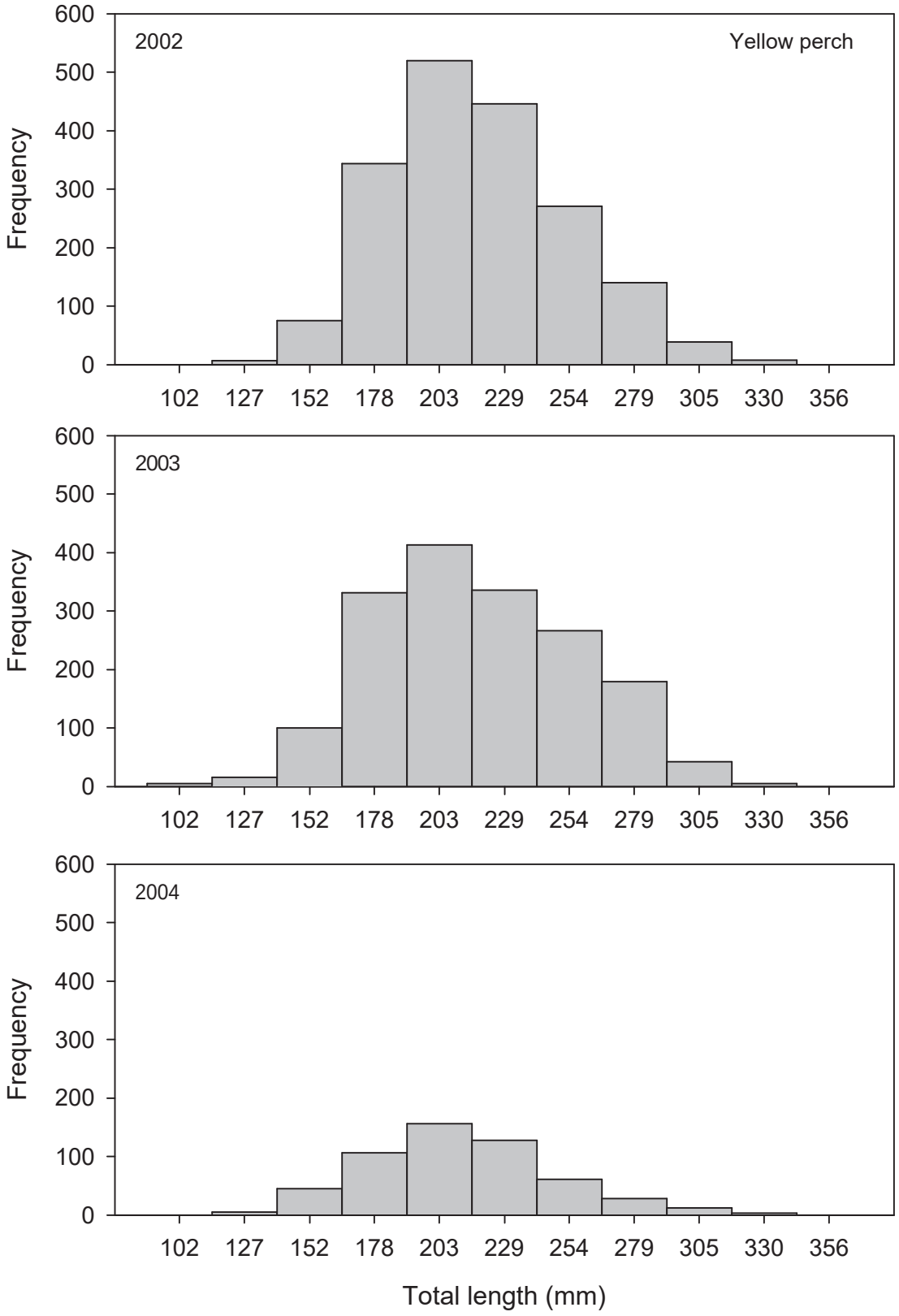

Figure 3.– Length frequency distributions for all yellow perch sampled during creel survey on the Detroit River, Lake St. Clair, and the St. Clair River by year, from 2002 through 2004.

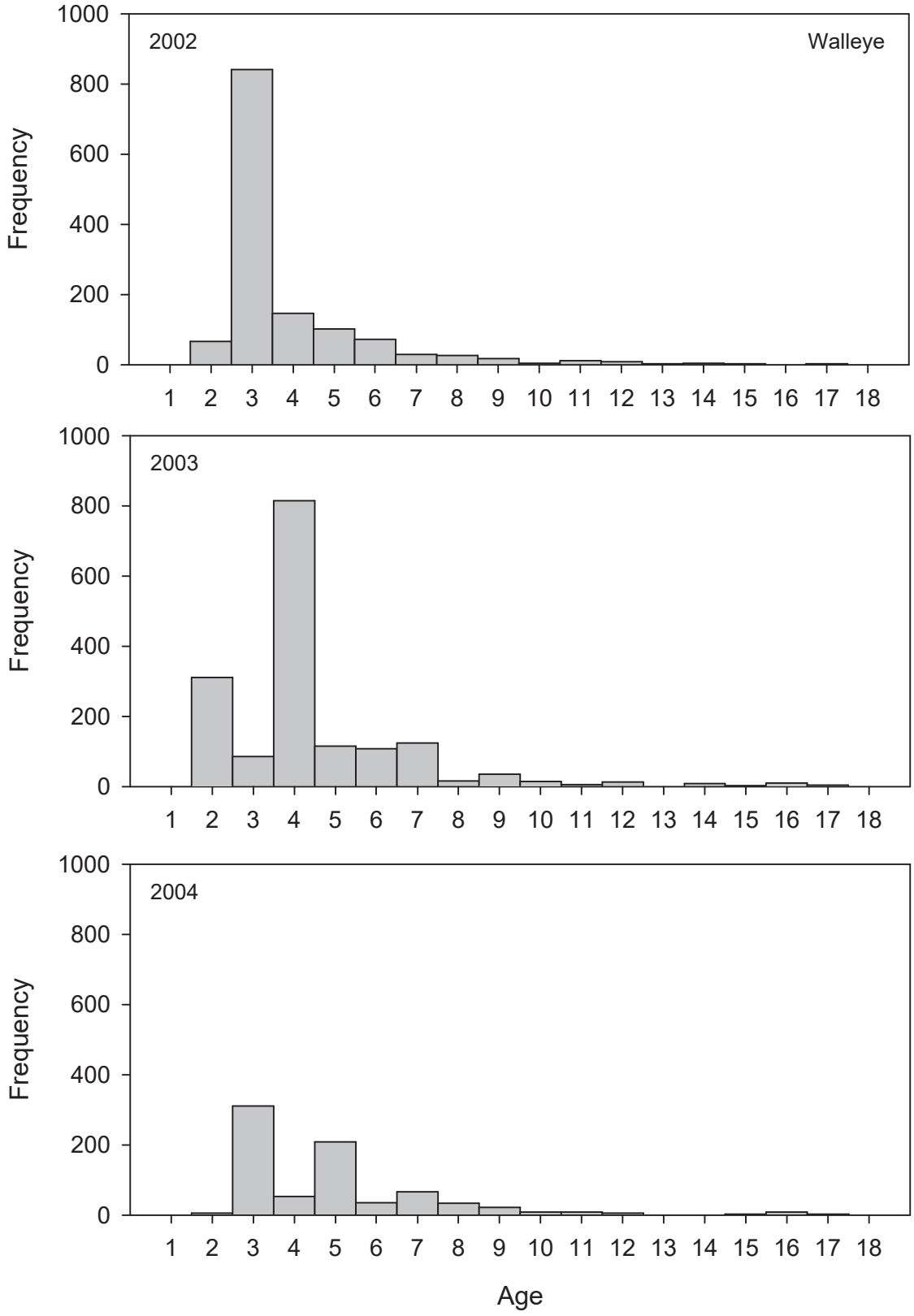

Figure 4.– Age distribution for all walleye sampled during creel survey on the Detroit River, Lake St. Clair, and the St. Clair River by year, from 2002 through 2004.

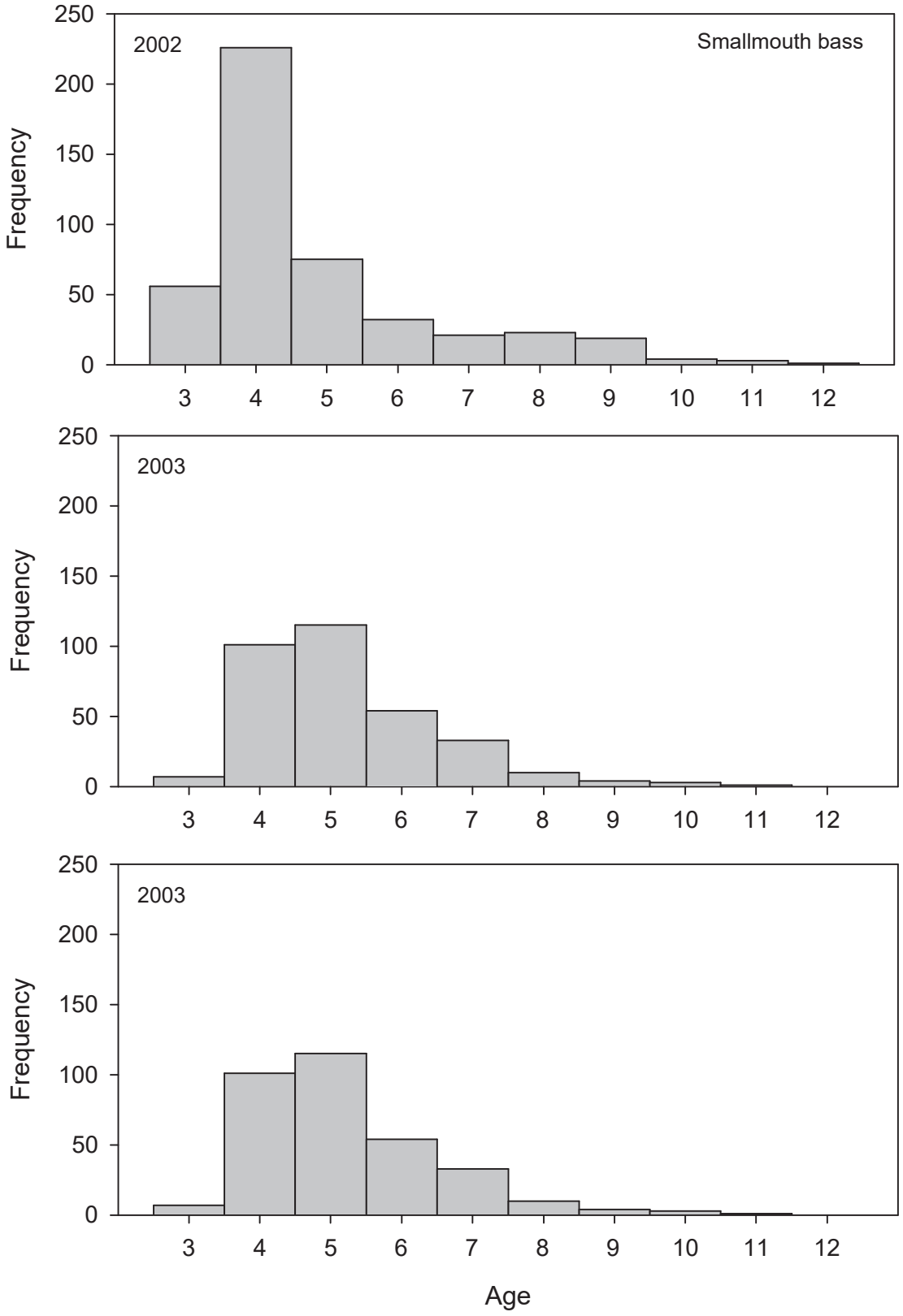

Figure 5.– Age distribution for all smallmouth bass sampled during creel survey on the Detroit River, Lake St. Clair, and the St. Clair River by year, from 2002 through 2004.

Table 1.–Estimated monthly harvest per hour, number harvested, and effort (angler hours, trips, and days) for all species from the St. Clair River, by sport fishing from boats (non-charter), 2002 (H=harvest). Estimated total released per hour and number released is also presented for selected species (R=released).

Species	Harvest (H) or Released (R)	Fish per hour	Month							Grand Total
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Bluegill	H	0.0070	0	0	0	1,210	0	0	0	1,210
Brown trout	H	0.0001	18	0	0	0	0	0	0	18
Chinook salmon	H	0.0003	0	58	0	0	0	0	0	58
Coho salmon	H	0.0002	27	15	0	0	0	0	0	43
Lake trout	H	0.0000	0	0	0	0	0	0	0	0
Lake trout	R	0.0009	106	0	0	0	0	0	0	106
Largemouth bass	H	0.0007	0	0	0	121	0	0	0	121
Largemouth bass	R	0.0025	0	0	238	61	290	72	0	660
Muskellunge	H	0.0001	0	0	0	0	23	0	0	23
Muskellunge	R	0.0006	0	78	0	0	21	0	0	99
Northern pike	H	0.0000	0	0	0	0	0	0	0	0
Northern pike	R	0.0021	12	15	169	0	163	0	0	359
Pumpkinseed	H	0.0014	0	0	0	0	240	0	0	240
Rainbow trout	H	0.0002	28	0	0	0	0	0	0	28
Rock bass	H	0.0002	0	0	0	42	0	0	0	42
Smallmouth bass	H	0.0013	0	0	0	85	42	95	0	222
Smallmouth bass	R	0.0546	0	0	473	3,985	2,340	2,616	0	9,414
Walleye	H	0.1784	315	4,461	4,886	8,810	8,598	3,658	16	30,744
Walleye	R	0.0091	0	31	1,019	109	355	55	0	1,569
Yellow perch	H	0.0444	0	256	3,844	1,320	327	341	1,566	7,653
Angler hours			6,446	19,851	33,171	53,978	37,400	19,262	2,198	172,305
Angler trips			1,539	5,006	8,970	14,106	9,130	4,305	520	43,576
Angler days			1,482	4,800	8,844	13,483	9,071	4,305	520	42,505

Table 2.–Estimated monthly harvest per hour, number harvested, and effort (angler hours, trips, and days) for all species from the St. Clair River, by sport fishing from boats (non-charter), 2003 (H=harvest). Estimated total released per hour and number released is also presented for selected species (R=released).

Species	Harvest (H) or Released (R)	Fish per hour	Month Apr	May	Jun	Jul	Aug	Sep	Oct	Grand Total
Bluegill	H	0.0034	0	0	0	0	726	0	0	726
Brown trout	H	0.0003	75	0	0	0	0	0	0	75
Chinook salmon	H	0.0028	463	152	0	0	0	0	0	615
Chinook salmon	R	0.002	38	0	0	0	0	0	0	38
Coho salmon	H	0.0000	0	0	0	0	0	0	0	0
Coho salmon	R	0.0003	62	0	0	0	0	0	0	62
Lake trout	H	0.0000	0	0	0	0	0	0	0	0
Lake trout	R	0.0003	0	0	0	0	0	0	68	68
Largemouth bass	H	0.0018	0	0	0	0	389	0	0	389
Largemouth bass	R	0.0026	0	0	0	48	196	319	0	563
Muskellunge	H	0.0003	0	0	57	0	0	0	0	57
Muskellunge	R	0.0003	0	0	57	0	0	0	0	57
Northern pike	H	0.0009	0	0	185	0	0	0	0	185
Northern pike	R	0.0004	0	0	0	0	72	22	0	95
Rainbow trout	H	0.0001	26	0	0	0	0	0	0	26
Rock bass	H	0.0002	0	0	40	0	0	0	0	40
Smallmouth bass	H	0.0056	0	0	0	54	936	227	0	1,217
Smallmouth bass	R	0.0715	0	0	290	2,386	3,658	8,681	428	15,445
Walleye	H	0.2166	26	4,552	14,969	19,998	5,757	1,221	243	46,767
Walleye	R	0.0050	0	0	71	61	630	327	0	1,088
Yellow perch	H	0.0433	0	463	1,219	1,702	2,497	2,289	1,189	9,359
Angler hours			6,365	17,204	56,759	66,082	42,917	22,772	3,827	215,926
Angler trips			1,663	5,693	14,315	17,395	11,166	4,619	879	55,731
Angler days			1,608	5,693	14,235	17,200	11,166	4,619	857	55,378

Table 3.–Estimated harvest per hour, number harvested, and effort (angler hours, trips, and days) from the St. Clair River (grids 515, 516, 517, 518, 519) for sport fishing from boats (non-charter) 2002 and 2003. Two standard errors of the point estimate in parentheses.

	Harvest rate per hour		Total harvest	
Species	2002	2003	2002	2003
Bluegill	0.0070 (0.0129)	0.0034 (0.0069)	1,210 (2,225)	726 (1,481)
Brown trout	0.0001 (0.0001)	0.0003 (0.0004)	18 (23)	75 (95)
Chinook salmon	0.0003 (0.0005)	0.0028 (0.0027)	58 (86)	615 (573)
Coho salmon	0.0002 (0.0002)	0.0000 (0.0000)	43 (40)	0 –
Largemouth bass	0.0007 (0.0014)	0.0018 (0.0024)	121 (240)	389 (524)
Muskellunge	0.0001 (0.0003)	0.0003 (0.0006)	23 (49)	57 (120)
Northern pike	0.0000 (0.0000)	0.0009 (0.0014)	0 –	185 (302)
Pumpkinseed	0.0014 (0.0031)	0.0000 (0.0000)	240 (538)	0 –
Rainbow trout	0.0002 (0.0002)	0.0001 (0.0001)	28 (37)	26 (30)
Rock bass	0.0002 (0.0005)	0.0002 (0.0004)	42 (85)	40 (83)
Smallmouth bass	0.0013 (0.0013)	0.0056 (0.0052)	222 (219)	1,217 (1,115)
Walleye	0.1784 (0.0359)	0.2166 (0.0445)	30,744 (5,645)	46,767 (8,656)
Yellow perch	0.0444 (0.0340)	0.0433 (0.0225)	7,653 (5,833)	9,359 (4,797)
Angler hours			172,305 (14,063)	215,926 (19,195)
Angler trips			43,576 (4,540)	55,731 (6,049)
Angler days			42,505 (4,466)	55,378 (6,024)

Table 4.–Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for selected species from the St. Clair River (grids 515, 516, 517, 518, 519) for sport fishing from boats (non-charter) 2002 and 2003.

	2002	2003	2002			2003		
	Catch rate per hour		Total	Total	%	Total	Total	%
Species			catch	harvest	released	catch	harvest	released
Chinook salmon	0.0000	0.0030	0	0	–	653	615	6
Coho salmon	0.0005	0.0000	87	43	51	0	0	–
Lake trout	0.0006	0.0000	106	0	100	0	0	–
Largemouth bass	0.0045	0.0044	782	121	85	952	389	59
Muskellunge	0.0007	0.0005	122	23	81	114	57	50
Northern pike	0.0021	0.0013	359	0	100	279	185	34
Rainbow trout	0.0010	0.0001	173	28	84	26	26	0
Smallmouth bass	0.0559	0.0772	9,636	222	98	16,660	1,217	93
Walleye	0.1875	0.2216	32,313	30,744	5	47,855	46,767	2
Angler hours			172,305			215,926		
Angler trips			43,576			55,731		
Angler days			42,505			55,378		

Table 5.–Estimated monthly harvest per hour, number harvested, and effort (angler hours, trips, and days) for all species from Lake St. Clair, by sport fishing from boats (non-charter), 2002 (H=harvest). Estimated total released per hour and number released is also presented for selected species (R=released).

Species	Harvest (H) or Released (R)	Fish per hour	Month								Grand Total
			Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
Black crappie	H	0.0014	59	331	697	344	0	16	421	103	1,969
Bluegill	H	0.0082	38	849	1,131	3,256	2,165	1,379	1,383	1,038	11,241
Brown trout	H	0.0000	11	0	0	0	0	0	0	0	11
Channel catfish	H	0.0007	0	0	64	639	42	73	78	9	905
White sucker	H	0.0000	0	0	0	0	0	0	26	0	26
Freshwater drum	H	0.0008	0	0	6	99	631	129	266	37	1,168
Largemouth bass	H	0.0005	0	0	0	242	380	27	9	56	714
Largemouth bass	R	0.0253	23	1,124	3,830	12,177	7,154	8,509	1,381	725	34,923
Muskellunge	H	0.0001	0	0	0	87	0	0	50	21	158
Muskellunge	R	0.0013	0	16	15	385	524	231	610	51	1,831
Northern pike	H	0.0013	0	10	170	444	982	180	68	0	1,854
Northern pike	R	0.0058	32	273	600	2,848	1,959	1,269	775	192	7,948
Pumpkinseed	H	0.0019	0	205	245	1,184	396	356	145	33	2,565
Rock bass	H	0.0066	0	123	307	4,143	1,572	1,629	1,086	195	9,056
Smallmouth bass	H	0.0104	0	0	0	1,287	4,237	3,699	4,952	229	14,404
Smallmouth bass	R	0.1396	139	806	5,871	69,544	57,294	38,462	17,411	2,945	192,474
Walleye	H	0.0354	163	522	1,341	8,288	12,760	17,652	7,207	908	48,841
Walleye	R	0.0052	8	6	275	3,898	44	1,532	1,059	333	7,154
White bass	H	0.0005	0	4	0	86	436	140	47	0	713
White bass	R	0.0029	0	9	341	1,088	727	1,044	844	9	4,063
White perch	H	0.0001	0	0	12	0	41	0	66	0	119
Yellow perch	H	0.4064	486	7,296	6,366	83,203	137,250	82,608	198,393	44,586	560,189
Other	H	0.0002	0	147	0	85	0	0	0	10	242
Angler hours			2,748	16,990	65,665	368,348	396,657	251,320	219,056	57,693	1,378,477
Angler trips			976	4,036	13,787	70,134	76,294	43,951	41,249	12,092	262,519
Angler days			950	3,820	12,854	67,825	74,662	43,592	40,342	11,869	255,913

Table 6.–Estimated monthly harvest per hour, number harvested, and effort (angler hours, trips, and days) for all species from Lake St. Clair, by sport fishing from boats (non-charter) and ice fishing, 2003 (H=harvest). Estimated total released per hour and number released is also presented for selected species (R=released).

Species	Harvest (H) or Released (R)	Fish per hour	Month										Grand total
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
Black crappie	H	0.0022	816	227	0	655	628	1,263	0	264	77	93	4,024
Bluegill	H	0.0084	4,639	2,662	0	43	532	455	146	1,848	1,022	4,035	15,381
Brown trout	H	0.0000	0	0	0	0	24	0	0	0	0	0	24
Channel catfish	H	0.0003	0	0	0	0	34	353	67	116	28	0	598
Chinook salmon	H	0.0001	0	0	0	117	5	0	0	0	0	0	121
Chinook salmon	R	0.0000	0	0	0	26	48	0	0	0	0	0	55
Coho salmon	H	0.0000	0	0	0	0	0	33	0	0	0	0	33
White sucker	H	0.0000	0	0	15	0	0	0	0	0	0	0	15
Freshwater drum	H	0.0017	0	0	0	0	24	2,221	517	291	59	27	3,138
Lake trout	H	0.0000	0	0	0	0	0	0	0	0	0	18	18
Largemouth bass	H	0.0006	0	0	0	22	369	79	218	429	0	27	1,144
Largemouth bass	R	0.0161	0	0	15	240	6,000	6,942	4,246	8,423	1,657	1,743	29,268
Lake whitefish	H	0.0000	0	0	0	0	0	6	0	0	0	0	6
Muskellunge	H	0.0003	0	0	0	0	0	482	152	0	0	0	634
Muskellunge	R	0.0005	0	0	0	18	66	366	191	202	13	141	998
Northern pike	H	0.0011	787	222	0	0	199	425	195	174	70	0	2,072
Northern pike	R	0.0057	44	0	0	264	1,003	5,704	915	1,396	669	349	10,343
Pink salmon	H	0.0004	0	0	0	173	576	0	0	0	0	0	749
Pumpkinseed	H	0.0065	878	736	164	167	1,545	5,030	332	1,194	1,074	744	11,863
Rainbow trout	H	0.0001	0	0	0	60	73	0	0	0	0	0	133
Rainbow trout	R	0.0000	0	0	0	0	88	0	0	0	0	0	88
Rock bass	H	0.0026	0	344	33	5	777	1,261	991	929	454	8	4,801
Smallmouth bass	H	0.0093	0	0	0	7	47	2,805	3,964	7,970	2,108	148	17,048
Smallmouth bass	R	0.0968	0	0	0	1,077	13,890	44,370	24,293	62,308	28,056	2,438	176,431
Walleye	H	0.0511	0	0	19	97	5,175	23,443	35,572	21,311	5,995	1,543	93,155
Walleye	R	0.0058	0	0	0	205	2,708	2,856	1,208	1,287	791	1,434	10,490
White bass	H	0.0007	93	78	0	0	0	419	169	402	39	0	1,201
White bass	R	0.0025	0	0	0	0	0	212	720	446	3,104	0	4,482
White perch	H	0.0002	0	62	84	0	0	33	17	90	0	0	285

Table 6.–Continued.

Species	Harvest (H) or Released (R)	Fish per hour	Month										Grand total
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
Yellow perch	H	0.5250	290,145	221,316	119,795	271	6,881	36,131	88,091	85,118	52,006	57,557	957,310
Other	H	0.0168	0	0	0	0	0	30,367	0	90	0	95	30,551
Angler hours			287,408	236,053	103,129	17,355	68,295	323,280	256,429	292,980	168,627	69,950	1,823,505
Angler trips			79,946	66,563	25,286	4,256	15,498	58,077	51,778	57,703	34,517	15,322	408,945
Angler days			69,313	57,860	23,259	4,077	14,941	56,994	51,116	57,317	34,288	15,288	384,453

Table 7.–Estimated monthly harvest per hour, number harvested, and effort (angler hours, trips, and days) for all species from Lake St. Clair, by sport fishing from boats (non-charter) and ice fishing, 2004 (H=harvest). Estimated total released per hour and number released is also presented for selected species (R=released).

Species	Harvest (H) or Released (R)	Fish per hour	Month Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Grand Total
Black crappie	H	0.0016	35	63	26	85	1,029	64	0	0	943	481	2,727
Bluegill	H	0.0106	697	6,883	0	331	1,192	254	80	738	4,688	3,666	18,530
Channel catfish	H	0.0003	0	0	0	0	0	0	256	135	104	0	495
Chinook salmon	H	0.0006	0	0	0	46	0	0	1,069	0	0	0	1,115
Coho salmon	H	0.0000	0	0	11	0	0	0	0	0	0	0	11
Coho salmon	R	0.0000	0	0	0	4	0	0	0	0	0	0	4
Freshwater drum	H	0.0016	0	0	0	0	0	0	15	2,459	376	0	2,851
Largemouth bass	H	0.0005	0	0	7	7	0	17	23	236	660	0	950
Largemouth bass	R	0.0166	12	157	22	1,181	3,479	7,807	7,202	4,335	1,833	2,898	28,925
Muskellunge	H	0.0001	0	0	0	0	0	82	0	0	81	0	164
Muskellunge	R	0.0062	0	0	9	57	402	1,839	6,081	1,244	1,032	82	10,744
Northern pike	H	0.0009	66	623	33	0	492	25	225	75	48	7	1,593
Northern pike	R	0.0058	0	47	22	299	1,039	3,103	2,399	1,624	1,413	110	10,056
Pumpkinseed	H	0.0020	474	1,316	12	88	1,182	127	63	39	93	2	3,396
Rainbow trout	H	0.0000	0	0	0	10	0	0	0	0	0	0	10
Rainbow trout	R	0.0000	0	0	0	4	0	0	0	0	0	0	4
Rock bass	H	0.0017	3	172	8	68	1,625	371	221	170	356	21	3,015
Smallmouth bass	H	0.0032	0	0	0	0	0	998	1,181	2,109	1,216	17	5,521
Smallmouth bass	R	0.0603	38	0	1	3,242	9,906	27,251	29,764	23,984	10,051	786	105,022
Walleye	H	0.0189	36	63	44	312	4,035	7,377	8,798	8,250	3,461	446	32,822
Walleye	R	0.0040	0	0	0	75	1,123	1,215	819	895	1,115	1,766	7,006
White bass	H	0.0002	0	0	0	0	14	0	32	333	0	0	379
White bass	R	0.0007	0	0	0	9	174	175	581	0	349	0	1,288
White perch	H	0.0002	0	0	0	0	0	0	0	150	143	0	293

Table 7.–Continued.

Species	Harvest (H) or Released (R)	Fish per hour	Month Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Grand Total
Yellow perch	H	0.5629	280,738	509,595	12,999	586	3,490	33,368	33,078	59,147	26,850	20,282	980,133
Angler hours			217,297	413,511	8,098	11,744	72,174	245,476	296,023	263,201	163,366	50,279	1,741,169
Angler trips			64,405	100,090	2,579	3,336	15,822	45,590	59,624	49,670	32,001	12,237	385,354
Angler days			56,591	93,866	2,473	3,209	15,729	45,360	59,444	49,561	31,824	12,237	370,293

Table 8.–Estimated monthly harvest per hour, number harvested, and effort (angler hours, trips, and days) for all species from Lake St. Clair, by ice fishing, January through February, 2005 (H=harvest). Estimated released per hour and number released is also presented for selected species (R=released). Survey was terminated at the end of February due to funding constraints, although ice angling continued through the end of March.

Species	Harvest (H) or Released (R)	Fish per hour	Month		Grand Total
			Jan	Feb	
Black crappie	H	0.0005	14	125	139
Bluegill	H	0.0132	1,834	1,599	3,433
Largemouth bass	H	0.0000	0	0	0
Largemouth bass	R	0.0006	14	129	143
Northern pike	H	0.0003	0	88	88
Northern pike	R	0.0001	0	13	13
Pumpkinseed	H	0.0072	1,100	763	1,863
Rock bass	H	0.0002	0	62	62
Smallmouth bass	H	0.0000	0	0	0
Smallmouth bass	R	0.0004	0	114	114
Walleye	H	0.0001	22	0	22
Walleye	R	0.0000	0	12	12
White bass	H	0.0004	0	105	105
White bass	R	0.0001	16	0	16
Yellow perch	H	0.5139	60,223	73,277	133,500
Angler hours			143,024	116,766	259,790
Angler trips			37,572	27,291	64,864
Angler days			37,527	26,684	64,211

Table 9.–Estimated harvest per hour, number harvested, and effort (angler hours, trips, and days) from Lake St. Clair for boat (non-charter) and ice sport fishing, 2002 (March to October), 2003 (January to October), 2004 (January to October), and 2005 (January and February). Two standard errors of the point estimate in parentheses.

	Harvest rate per hour				Total harvest			
Species	2002	2003	2004	2005	2002	2003	2004	2005
Black crappie	0.0014	0.0022	0.0016	0.0005	1,969	4,024	2,727	139
	(0.0009)	(0.0014)	(0.0013)	(0.0004)	(1,195)	(2,478)	(2,299)	(110)
Bluegill	0.0082	0.0084	0.0106	0.0132	11,241	15,381	18,530	3,433
	(0.0029)	(0.0032)	(0.0047)	(0.0081)	(3,872)	(5,725)	(8,144)	(2,114)
Brown trout	0.0000	0.0000	0.0000	0.0000	11	0	0	0
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(22)	–	–	–
Channel catfish	0.0007	0.0003	0.0003	0.0000	905	598	495	0
	(0.0008)	(0.0002)	(0.0002)	(0.0000)	(1,088)	(409)	(403)	–
Chinook salmon	0.0000	0.0001	0.0006	0.0000	0	121	1,115	0
	(0.0000)	(0.0001)	(0.0011)	(0.0000)	–	(165)	(1,956)	–
Coho salmon	0.0000	0.0000	0.0000	0.0000	0	33	11	0
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	–	(67)	(21)	–
White sucker	0.0000	0.0000	0.0000	0.0000	26	15	0	0
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(52)	(29)	–	–
Freshwater drum	0.0008	0.0017	0.0016	0.0000	1,168	3,138	2,851	0
	(0.0005)	(0.0010)	(0.0023)	(0.0000)	(722)	(1,837)	(4,064)	–
Largemouth bass	0.0005	0.0006	0.0005	0.0000	714	1,144	950	0
	(0.0003)	(0.0005)	(0.0007)	(0.0000)	(456)	(890)	(1,303)	–
Muskellunge	0.0001	0.0003	0.0001	0.0000	158	634	164	0
	(0.0001)	(0.0005)	(0.0001)	(0.0000)	(156)	(948)	(162)	–
Northern pike	0.0013	0.0011	0.0009	0.0003	1,854	2,072	1,593	88
	(0.0013)	(0.0005)	(0.0005)	(0.0004)	(1,841)	(895)	(952)	(106)
Other	0.0002	0.0168	0.0000	0.0000	242	30,551	0	0
	(0.0002)	(0.0120)	(0.0000)	(0.0000)	(340)	(21,752)	–	–
Pumpkinseed	0.0019	0.0065	0.0020	0.0072	2,565	11,863	3,396	1,863
	(0.0006)	(0.0025)	(0.0009)	(0.0056)	(755)	(4,428)	(1,581)	(1,456)
Rainbow trout	0.0000	0.0001	0.0000	0.0000	0	133	10	0
	(0.0000)	(0.0001)	(0.0000)	(0.0000)	–	(137)	(17)	–
Rock bass	0.0066	0.0026	0.0017	0.0002	9,056	4,801	3,015	62
	(0.0025)	(0.0008)	(0.0009)	(0.0002)	(3,418)	(1,457)	(1,514)	(53)
Smallmouth bass	0.0104	0.0093	0.0032	0.0000	14,404	17,048	5,521	0
	(0.0040)	(0.0022)	(0.0013)	(0.0000)	(5,322)	(3,849)	(2,164)	–
Walleye	0.0354	0.0511	0.0189	0.0001	48,841	93,155	32,822	22
	(0.0067)	(0.0089)	(0.0052)	(0.0002)	(8,180)	(15,183)	(8,833)	(45)
White bass	0.0005	0.0007	0.0002	0.0004	713	1,201	379	105
	(0.0005)	(0.0005)	(0.0003)	(0.0007)	(711)	(828)	(536)	(178)
White perch	0.0001	0.0002	0.0002	0.0000	119	285	293	0
	(0.0001)	(0.0001)	(0.0002)	(0.0000)	(124)	(212)	(365)	–

Table 9.–Continued.

Species	Harvest rate per hour				Total harvest			
	2002	2003	2004	2005	2002	2003	2004	2005
Yellow perch	0.4064	0.5250	0.5629	0.5139	560,189	957,310	980,133	133,500
	(0.0929)	(0.0616)	(0.0879)	(0.1114)	(118,470)	(95,110)	(143,239)	(28,927)
Angler hours					1,378,477	1,823,505	1,741,169	259,790
					(119,576)	(113,645)	(95,735)	(52,936)
Angler trips					262,519	408,945	385,354	64,864
					(24,220)	(24,418)	(21,553)	(3,785)
Angler days					255,913	384,453	370,293	64,211
					(23,867)	(23,277)	(21,140)	

Table 10.–Estimated catch per hour for selected species from Lake St. Clair for boat (non-charter) and ice fishing, 2002 (March to October), 2003 (January to October), 2004 (January to October), and 2005 (January and February).

	Catch rate per hour			
Species	2002	2003	2004	2005
Largemouth bass	0.0259	0.0167	0.0245	0.0006
Muskellunge	0.0014	0.0009	0.0090	0.0000
Northern pike	0.0071	0.0068	0.0096	0.0004
Smallmouth bass	0.1501	0.1061	0.0908	0.0004
Walleye	0.0406	0.0568	0.0327	0.0001
White bass	0.0035	0.0031	0.0014	0.0005

Table 11.–Estimated catch (number caught), and effort (angler hours, trips, and days) for selected species from Lake St. Clair for sport fishing from boats and ice angling, 2002 (March to October), 2003 (January to October), 2004 (January to October), and 2005 (January and February). Annual harvest estimates and percentage of reported catch released are also included for comparison.

	2002			2003			2004			2005		
Species	Total catch	Total harvest	% released	Total catch	Total harvest	% released	Total catch	Total harvest	% released	Total catch	Total harvest	% released
Largemouth bass	35,637	714	98	30,410	1,144	96	29,876	950	97	151	0	100
Muskellunge	1,990	158	92	1,631	634	61	10,909	164	98	0	0	–
Northern pike	9,802	1,854	81	12,416	2,072	83	11,650	1,593	86	101	88	13
Smallmouth bass	206,876	14,404	93	193,481	17,048	91	110,544	5,521	95	114	0	100
Walleye	55,996	48,841	13	103,644	93,155	10	39,830	32,822	18	34	22	35
White bass	4,775	713	85	5,682	1,201	79	1,667	379	77	121	105	13

Table 12.–Estimated monthly harvest per hour, number harvested, and effort (angler hours, trips, and days) for all species from the Detroit River, by sport fishing from boats (non-charter), 2002 (H=harvest). Estimated total released per hour and number released is also presented for selected species (R=released).

Species	Harvest (H) or Released (R)	Fish per hour	Month								Grand Total
			Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
Black crappie	H	0.0007	0	0	650	0	0	0	0	0	650
Bluegill	H	0.0059	8	138	377	3,022	1,625	33	0	0	5,202
Channel catfish	H	0.0007	0	0	0	0	500	33	68	0	601
White sucker	H	0.0002	0	0	0	0	145	0	0	0	145
Freshwater drum	H	0.0024	0	0	40	438	1,601	0	0	0	2,079
Largemouth bass	H	0.0008	0	0	0	367	0	0	309	0	676
Largemouth bass	R	0.0124	0	0	1,265	2,517	1,033	1,220	4,008	863	10,906
Muskellunge	H	0.0002	0	0	0	94	0	0	68	0	162
Muskellunge	R	0.0017	94	162	22	100	534	316	103	166	1,498
Northern pike	H	0.0007	0	48	0	377	160	0	71	0	657
Northern pike	R	0.0036	39	180	1,050	555	701	416	216	0	3,157
Pumpkinseed	H	0.0011	0	0	0	0	250	753	0	0	1,003
Rock bass	H	0.0090	0	0	888	2,181	4,530	305	0	0	7,905
Smallmouth bass	H	0.0027	0	0	0	800	467	840	274	0	2,380
Smallmouth bass	R	0.0460	0	2,350	6,849	15,185	9,285	3,989	1,254	1,459	40,371
Walleye	H	0.2272	6,839	61,944	36,644	35,926	38,017	18,895	953	0	199,219
Walleye	R	0.0098	86	1,457	1,048	1,013	2,102	1,172	1,446	249	5,377
White bass	H	0.2777	0	0	17,588	211,627	14,306	0	0	0	243,521
White bass	R	0.0919	0	0	4,659	73,992	1,443	0	464	0	80,558
White perch	H	0.0056	0	0	81	3,793	1,080	0	0	0	4,955
Yellow perch	H	0.0629	510	2,655	2,638	15,387	7,113	19,027	6,038	1,785	55,153
Angler hours			44,898	218,942	135,918	208,745	148,470	85,480	29,873	4,622	876,948
Angler trips			9,912	44,245	29,701	46,904	32,657	17,732	6,507	987	188,645
Angler days			9,368	42,794	28,075	45,236	31,640	17,640	6,503	987	182,246

Table 13.–Estimated monthly harvest per hour, number harvested, and effort (angler hours, trips, and days) for all species from the Detroit River, by sport fishing from boats (non-charter), 2004 (H=harvest). Estimated total released per hour and number released is also presented for selected species (R=released).

Species	Harvest (H) or Released (R)	Fish per hour	Month								Grand total
			Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
Bluegill	H	0.0022	0	0	56	67	59	816	826	0	1,825
Channel catfish	H	0.0009	0	0	0	134	0	418	226	0	778
Freshwater drum	H	0.0022	0	0	41	1,534	188	63	0	0	1,827
Largemouth bass	H	0.0008	0	0	0	191	345	84	0	24	643
Largemouth bass	R	0.0266	0	0	5,669	4,159	2,526	5,783	2,039	1,654	21,828
Muskellunge	H	0.0000	0	0	0	0	39	0	0	0	39
Muskellunge	R	0.0069	7	76	0	539	3,392	99	1,447	108	5,669
Northern pike	H	0.0008	0	27	284	67	0	141	101	46	665
Northern pike	R	0.0090	105	501	2,520	1,114	945	601	1,297	306	7,389
Pumpkinseed	H	0.0021	0	0	0	1,459	0	127	103	0	1,688
Rainbow trout	H	0.0000	0	0	0	0	39	0	0	0	39
Rock bass	H	0.0066	0	0	1,808	1,927	0	923	727	0	5,385
Smallmouth bass	H	0.0091	0	0	0	1,015	1,635	2,482	2,321	56	7,509
Smallmouth bass	R	0.0793	0	3,975	4,263	6,391	16,996	10,856	19,399	3,258	65,137
Walleye	H	0.1643	185	30,439	21,275	32,504	33,532	13,322	3,382	327	134,967
Walleye	R	0.0251	72	1,748	1,117	2,534	5,753	4,429	3,884	1,061	20,596
White bass	H	0.2074	0	0	85,462	76,520	8,416	0	0	0	170,397
White bass	R	0.1373	0	196	29,114	74,132	8,214	1,107	0	0	112,764
White perch	H	0.0190	0	0	4,548	10,763	270	0	0	0	15,581
Yellow perch	H	0.1334	2,278	6,446	9,633	14,532	6,924	29,779	25,003	14,982	109,576
Angler hours			9,694	151,750	118,728	167,762	155,954	109,238	80,240	28,152	821,518
Angler trips			2,446	30,717	27,164	37,536	35,991	26,589	18,895	6,183	185,521
Angler days			2,389	30,662	27,070	37,338	35,627	26,516	18,895	6,142	185,640

Table 14.–Estimated harvest per hour, number harvested, and effort (angler hours, trips, and days) from the Detroit River, by boat anglers (non-charter), 2002 and 2004. Two standard errors of the point estimate in parentheses.

	Harvest rate per hour		Total harvest	
Species	2002	2004	2002	2004
Black crappie	0.0007	0.0000	650	0
	(0.0015)	(0.0000)	(1,300)	–
Bluegill	0.0059	0.0022	5,202	1,825
	(0.0063)	(0.0021)	(5,482)	(1,704)
Channel catfish	0.0007	0.0009	601	778
	(0.0008)	(0.0007)	(740)	(611)
White sucker	0.0002	0.0000	145	0
	(0.0003)	(0.0000)	(289)	–
Freshwater drum	0.0024	0.0022	2,079	1,827
	(0.0020)	(0.0021)	(1,715)	(1,684)
Largemouth bass	0.0008	0.0008	676	643
	(0.0011)	(0.0007)	(939)	(609)
Muskellunge	0.0002	0.0000	162	39
	(0.0003)	(0.0001)	(233)	(74)
Northern pike	0.0007	0.0008	657	665
	(0.0006)	(0.0007)	(556)	(546)
Pumpkinseed	0.0011	0.0021	1,003	1,688
	(0.0017)	(0.0021)	(1,458)	(1,685)
Rainbow trout	0.0000	0.0000	0	39
	(0.0000)	(0.0001)	–	(74)
Rock bass	0.0090	0.0066	7,905	5,385
	(0.0061)	(0.0040)	(5,325)	(3,274)
Smallmouth bass	0.0027	0.0091	2,380	7,509
	(0.0015)	(0.0032)	(1,289)	(2,589)
Walleye	0.2272	0.1643	199,219	134,967
	(0.0308)	(0.0249)	(23,039)	(17,774)
White bass	0.2777	0.2074	243,521	170,397
	(0.0742)	(0.0587)	(62,740)	(46,530)
White perch	0.0056	0.0190	4,955	15,581
	(0.0033)	(0.0143)	(2,897)	(11,731)
Yellow perch	0.0629	0.1334	55,153	109,576
	(0.0244)	(0.0322)	(21,041)	(25,118)
Angler hours			876,948	821,518
			(62,048)	(61,232)
Angler trips			188,645	185,521
			(13,753)	(13,890)
Angler days			182,246	184,640
			(13,375)	(13,848)

Table 15.–Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for selected species from the Detroit River, by boat anglers (non-charter), 2002 and 2004. Annual harvest estimates and percentage of reported catch released for 2002 and 2004 are also included for comparison.

	Catch rate per hour		Total catch	Total harvest	% released	Total catch	Total harvest	% released
Species	2002	2004	2002			2004		
Largemouth bass	0.0132	0.0274	11,582	676	94	22,474	643	97
Muskellunge	0.0019	0.0076	1,659	162	90	5,707	39	99
Northern pike	0.0043	0.0098	3,813	657	83	8,055	665	92
Smallmouth bass	0.0488	0.0884	42,752	2,380	94	72,647	7,509	90
Walleye	0.2369	0.1894	207,791	199,219	4	155,564	134,967	13
White bass	0.3696	0.3447	324,079	243,521	25	283,161	170,397	40
Angler hours			876,948			821,518		
Angler trips			188,645			185,521		
Angler days			182,246			184,640		

Table 16.–Numbers of biological samples collected by creel survey clerks during on-site interviews on the Detroit River, Lake St. Clair, and the St. Clair River from 2002 through 2004.

Species	Water body			Total	% of total
	Detroit River	Lake St. Clair	St. Clair River		
Brown trout	0	1	1	2	0
Chinook salmon	0	2	8	10	0
Coho salmon	0	0	5	5	0
Largemouth bass	0	6	0	6	0
Muskellunge	1	6	1	8	0
Northern pike	8	63	1	72	1
Rainbow trout	0	0	1	1	0
Rock bass	0	2	0	2	0
Smallmouth bass	55	800	24	879	10
Walleye	1,084	2,294	461	3,839	43
Yellow perch	230	3,810	49	4,089	46
Total	1,378	6,984	551	8,913	100
% of total	15	78	6	100	

Table 17.–Mean, minimum (Min), and maximum (Max) lengths (mm) recorded for yellow perch, walleye, and smallmouth bass sampled by creel clerks during on-site creel surveys on the Detroit River, Lake St. Clair, and the St. Clair River from 2002 through 2004. 2SE = Standard error of the mean X 2.

	Yellow perch					Walleye					Smallmouth bass				
Water body	Mean	2SE	Min	Max	N	Mean	2SE	Min	Max	N	Mean	2SE	Min	Max	N
Detroit River	232	5.2	104	348	230	507	5.1	315	777	1,083	408	11.6	318	521	55
Lake St. Clair	231	1.2	107	358	3,810	459	2.8	318	754	2,294	403	2.7	330	559	800
St. Clair River	236	9.1	185	310	49	468	6.4	330	780	461	400	13.8	356	460	24
All water bodies	232	1.2	104	358	4,089	474	2.5	315	780	3,838	403	2.6	318	559	879

Table 18.–Mean, minimum (Min), and maximum (Max) ages recorded for walleye, and smallmouth bass sampled by creel clerks during on-site creel surveys on the Detroit River (DR), Lake St. Clair (LSC), and the St. Clair River (SCR) from 2002 through 2004. 2SE = Standard error of the mean X 2.

	Walleye					Smallmouth bass				
Water body	Mean age	2SE	Minimum age	Maximum age	N	Mean age	2SE	Minimum age	Maximum age	N
DR	5.1	0.2	1	18	1,083	5.5	0.6	3	12	54
LSC	4.0	0.1	1	18	2,245	5.0	0.1	3	11	795
SCR	4.2	0.2	2	17	459	5.0	0.8	3	10	23
Total	4.4	0.1	1	18	3,787	5.1	0.1	3	12	872

Table 19.–State of residence of anglers interviewed at sites on the Detroit River (DR), Lake St. Clair (LSC), and the St. Clair River (SCR) during creel surveys, 2002–05.

	DR		LSC		SCR		All water bodies	
State	Number	%	Number	%	Number	%	Number	%
Alabama	2	0.1	1	0.0	0	0.0	3	0.0
Arizona	1	0.0	0	0.0	0	0.0	1	0.0
California	0	0.0	2	0.0	0	0.0	2	0.0
Colorado	0	0.0	1	0.0	0	0.0	1	0.0
Connecticut	1	0.0	1	0.0	0	0.0	2	0.0
Florida	1	0.0	7	0.0	1	0.1	9	0.0
Georgia	1	0.0	1	0.0	0	0.0	2	0.0
Illinois	23	0.7	14	0.1	0	0.0	37	0.2
Indiana	40	1.2	221	1.2	16	1.6	277	1.2
Iowa	3	0.1	1	0.0	0	0.0	4	0.0
Kentucky	5	0.1	19	0.1	5	0.5	29	0.1
Louisiana	0	0.0	1	0.0	0	0.0	1	0.0
Michigan	3,235	94.0	18,510	96.8	947	92.5	22,692	96.2
Minnesota	1	0.0	2	0.0	0	0.0	3	0.0
Mississippi	4	0.1	3	0.0	0	0.0	7	0.0
Missouri	1	0.0	3	0.0	2	0.2	6	0.0
New Jersey	1	0.0	0	0.0	0	0.0	1	0.0
New York	0	0.0	1	0.0	0	0.0	1	0.0
North Carolina	1	0.0	2	0.0	0	0.0	3	0.0
North Dakota	1	0.0	3	0.0	0	0.0	4	0.0
Oklahoma	1	0.0	0	0.0	0	0.0	1	0.0
Ohio	77	2.2	249	1.3	36	3.5	362	1.5
Pennsylvania	2	0.1	6	0.0	1	0.1	9	0.0
South Carolina	1	0.0	0	0.0	0	0.0	1	0.0
Tennessee	2	0.1	4	0.0	2	0.2	8	0.0
Texas	0	0.0	7	0.0	0	0.0	7	0.0
Virginia	1	0.0	9	0.0	0	0.0	10	0.0
West Virginia	2	0.1	0	0.0	0	0.0	2	0.0
Wisconsin	5	0.1	2	0.0	1	0.1	8	0.0
Wyoming	0	0.0	1	0.0	0	0.0	1	0.0
Total	3,442		19,124		1,024		23,590	

Table 20.–County of residence for Michigan resident anglers interviewed during creel survey on the Detroit River (DR), Lake St. Clair (LSC) and St. Clair River (SCR) from 2002 through 2005, expressed as a percentage of the total number of residence interviews by water body.

	Water body (%)		
County	DR	LSC	SCR
Alcona	0.0	0.0	0.2
Alger	0.0	0.0	0.0
Allegan	0.2	0.0	0.0
Alpena	0.0	0.0	0.0
Antrim	0.1	0.0	0.0
Arenac	0.0	0.0	0.0
Barry	0.1	0.0	0.0
Bay	0.1	0.1	0.0
Benzie	0.0	0.0	0.0
Berrien	0.1	0.1	0.0
Branch	0.1	0.0	0.0
Calhoun	0.4	0.1	0.0
Cass	0.1	0.0	0.0
Charlevoix	0.0	0.0	0.0
Chippewa	0.0	0.0	0.0
Clare	0.1	0.0	0.0
Clinton	0.1	0.1	0.4
Crawford	0.0	0.0	0.1
Delta	0.0	0.0	0.0
Eaton	0.9	0.1	0.4
Emmet	0.0	0.0	0.0
Genesee	0.8	1.2	2.1
Gladwin	0.0	0.0	0.3
Grand Traverse	0.1	0.0	0.0
Gratiot	0.1	0.0	0.0
Hillsdale	0.1	0.0	0.0
Huron	0.0	0.1	0.1
Ingham	0.8	0.2	0.3
Ionia	0.2	0.0	0.0
Iosco	0.0	0.0	0.1
Isabella	0.0	0.0	0.0
Jackson	1.0	0.1	0.2
Kalamazoo	0.4	0.1	0.1
Kalkaska	0.1	0.0	0.0
Kent	0.5	0.1	0.3
Lake	0.1	0.0	0.0
Lapeer	0.3	1.4	2.7
Lenawee	0.5	0.1	0.1
Livingston	1.4	0.5	0.3
Luce	0.1	0.0	0.0
Macomb	9.2	57.5	21.7

Table 20.–Continued.

County	Water body (%)		
	DR	LSC	SCR
Manistee	0.1	0.0	0.0
Mason	0.1	0.0	0.0
Mecosta	0.1	0.0	0.0
Midland	0.1	0.0	0.0
Missaukee	0.0	0.0	0.0
Monroe	4.3	0.2	0.0
Montcalm	0.3	0.0	0.1
Montmorency	0.0	0.0	0.0
Muskegon	0.5	0.0	0.0
Newaygo	0.0	0.0	0.2
Oakland	10.5	14.3	8.4
Oceana	0.0	0.0	0.0
Ogemaw	0.0	0.0	0.0
Osceola	0.0	0.0	0.0
Oscoda	0.0	0.0	0.2
Otsego	0.1	0.0	0.0
Ottawa	0.6	0.1	0.0
Presque Isle	0.0	0.0	0.0
Roscommon	0.1	0.0	0.0
Saginaw	0.2	0.1	0.0
Saint Clair	0.7	10.3	47.3
Saint Joseph	0.1	0.1	0.0
Sanilac	0.0	0.4	1.1
Shiawassee	0.1	0.1	0.5
Tuscola	0.1	0.1	0.3
Unknown	7.1	5.7	9.1
Van Buren	0.1	0.0	0.0
Washtenaw	3.3	0.4	0.6
Wayne	53.7	6.0	2.9
Wexford	0.0	0.0	0.0
Total Number	3,442	19,124	1,024

Table 21.–Species sought by anglers interviewed during creel survey on the Detroit River (DR), Lake St. Clair (LSC) and St. Clair River (SCR) from 2002 through 2005, expressed as a percentage of the total number of residence interviews by water body.

	DR		LSC		SCR		Total	
Target species	Number	%	Number	%	Number	%	Number	%
Anything	244	7.1	1,635	8.5	33	3.2	1,912	8.1
Salmon and trout	0	0.0	53	0.3	56	5.5	109	0.5
Largemouth bass	46	1.3	169	0.9	4	0.4	219	0.9
Muskellunge	58	1.7	610	3.2	0	0.0	668	2.8
Northern pike	50	1.5	392	2.0	1	0.1	443	1.9
Panfish	58	1.7	424	2.2	5	0.5	487	2.1
Smallmouth bass	209	6.1	1,941	10.2	93	9.1	2,243	9.5
Suckers	0	0.0	1	0.0	0	0.0	1	0.0
Walleye	2,448	71.1	3,254	17.0	778	76.0	6,480	27.5
Walleye and perch	72	2.1	646	3.4	10	1.0	728	3.1
Yellow perch	257	7.5	9,998	52.3	44	4.3	10,299	43.7
Total	3,442		19,123		1,024		23,589	

Table 22.–Species sought by anglers interviewed during creel survey at Lake St. Clair sites during open water (boat fishery) and winter (ice fishery) seasons from 2002 through 2005.

	Boat fishery		Ice fishery		Total fishery	
Target species	Number	%	Number	%	Number	%
Anything	1,603	13.8	32	0.4	1,635	8.5
Salmon and trout	53	0.5	0	0.0	53	0.3
Largemouth bass	169	1.5	0	0.0	169	0.9
Muskellunge	610	5.2	0	0.0	610	3.2
Northern pike	337	2.9	55	0.7	392	2.0
Panfish	360	3.1	64	0.9	424	2.2
Smallmouth bass	1,941	16.7	0	0.0	1,941	10.2
Suckers	1	0.0	0	0.0	1	0.0
Walleye	3,250	27.9	4	0.1	3,254	17.0
Walleye and perch	642	5.5	4	0.1	646	3.4
Yellow perch	2,684	23.0	7,314	97.9	9,998	52.3
Total	11,650		7,473		19,123	

Table 23.–Fishing method used by anglers targeting various species based on interviews at sites on the Detroit River, Lake St. Clair, and the St. Clair River from 2002 through 2005, including the ice fishery on Lake St. Clair.

	Casting		Drifting		Fly fishing		Jigging		Spearing		Still fishing		Trolling		Total
Species sought	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Anything	430	22.5	873	45.7	5	0.3	39	2.0	17	0.9	328	17.2	217	11.4	1,910
Salmon and trout	2	1.8	4	3.7	0	0.0	2	1.8	0	0.0	2	1.8	99	90.8	109
Largemouth bass	203	92.7	11	5.0	0	0.0	2	0.9	0	0.0	2	0.9	1	0.5	219
Muskellunge	127	19.0	15	2.2	3	0.4	0	0.0	0	0.0	3	0.4	520	77.8	668
Northern pike	279	62.8	14	3.2	13	2.9	5	1.1	43	9.7	14	3.2	75	16.9	444
Panfish	86	17.7	69	14.2	0	0.0	51	10.5	0	0.0	274	56.4	6	1.2	486
Smallmouth bass	1,680	74.9	385	17.2	6	0.3	42	1.9	0	0.0	43	1.9	87	3.9	2,244
Walleye	227	3.5	2,126	32.8	1	0.0	1,786	27.6	1	0.0	99	1.5	2,236	34.5	6,477
Walleye and perch	17	2.3	448	61.5	0	0.0	22	3.0	0	0.0	98	13.5	143	19.6	728
Yellow perch	35	0.3	1,013	9.8	0	0.0	4,978	48.3	21	0.2	4,196	40.7	55	0.5	10,300
All species	3,086	13.1	4,958	21.0	28	0.1	6,927	29.4	82	0.3	5,059	21.5	3,439	14.6	23,579

Table 24.–Comparison of fishing effort and harvest for the boat and ice fisheries combined across the Detroit River, Lake St. Clair, and the St. Clair River, for the periods from April 1983–March 1984 (data from Haas et al. 1985), and April 2002–March 2003.

Effort and harvest	1983–84	2002–03	Change	% change
Fishing effort (angler hours)	3,495,908	3,006,675	-489,233	-14
Walleye harvest	320,778	271,820	-48,958	-15
Yellow perch harvest	1,238,977	1,253,255	14,278	1
Smallmouth bass harvest	25,320	17,007	-8,313	-33
White bass harvest	994,499	244,405	-750,094	-75

Table 25.–Comparison of estimated fishing effort (expressed as angler hours) for Michigan waters of the Great Lakes during 2002, 2003, and 2004. Italicized values are averaged from the other two years to fill in gaps in creel survey coverage. Data from Lake Michigan, Huron, and Superior are from T. Kolb, Charlevoix Research Station (personal communication).

Location	Category	2002	2003	2004	Mean
St. Clair River	boat	172,305	215,926	194,116	205,021
Lk. St. Clair	Ice	632,749	626,590	638,907	632,749
	boat	1,378,477	1,196,915	1,102,262	1,225,885
Detroit River	boat	876,948	849,233	821,518	849,233
Subtotal St. Clair System		3,060,479	2,888,664	2,756,803	2,901,982
Percent of statewide total		28%	29%	29%	29%
Lake Erie	boat	884,514	525,660	731,740	628,700
St. Clair Sys + Lk Erie		3,944,993	3,414,324	3,488,543	3,615,953
Percent of statewide total		37%	34%	37%	36%
Lake Michigan	ice	177,495	184,642	170,347	177,495
	boat and pier	3,391,186	3,032,894	3,253,423	3,225,834
Lake Huron	ice	463,329	537,497	389,161	463,329
	boat and pier	2,626,432	2,601,797	2,017,376	2,415,202
Lake Superior	ice	28,987	44,463	45,757	45,110
	boat and pier	158,999	170,091	178,678	169,256
Upper Lakes total		6,846,427	6,571,384	6,054,743	6,490,851
Percent of statewide total		63%	66%	63%	65
Statewide total		10,791,420	9,985,708	9,543,286	10,106,805

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Appendix A.–Common and scientific names of fishes included in this report.

Common name	Scientific name
Lake sturgeon	*Acipenser fulvescens*
Rock bass	*Ambloplites rupestris*
Freshwater drum	*Aplodinotus grunniens*
White sucker	*Catostomus commersonii*
Northern pike	*Esox lucius*
Muskellunge	*Esox masquinongy*
Mooneye	*Hiodon tergisus*
Channel catfish	*Ictalurus punctatus*
Pumpkinseed	*Lepomis gibbosus*
Bluegill	*Lepomis macrochirus*
Smallmouth bass	*Micropterus dolomieu*
Largemouth bass	*Micropterus salmoides*
White perch	*Morone americana*
White bass	*Morone chrysops*
Silver redhorse	*Moxostoma anisurum*
Golden redhorse	*Moxostoma erythrurum*
Shorthead redhorse	*Moxostoma macrolepidotum*
Round goby	*Neogobius melanostomus*
Coho salmon	*Oncorhynchus kisutch*
Rainbow trout	*Oncorhynchus mykiss*
Chinook salmon	*Oncorhynchus tshawytscha*
Yellow perch	*Perca flavescens*
Black crappie	*Pomoxis nigromaculatus*
Brown trout	*Salmo trutta*
Walleye	*Sander vitreus*

Appendix B.–Details on spatial strata for creel survey clerks on Detroit River, Lake St. Clair, and St. Clair River, 2002 through 2005, including separate instructions for winter creel survey on Lake St. Clair.

Detroit River
Creel Census Schedule
Lake Erie Management Unit

1 Fisheries Assistant

Work shifts	I	March through October	6:00am to 2:30pm
	II	March	10:30am to 7:00pm
		April and October	11:30am to 8:00pm
		May through September	12:30pm to 9:00pm

INTERVIEW SITES

Area A: Lower Detroit River, site grids 500, 501, and 502

Includes the following access sites; Lake Erie Metro ramps, Elizabeth Park ramps, Trenton Rotary ramp, Riverview Municipal ramp, Wyandotte Municipal ramp and Ecorse Municipal ramp.

Area B: Upper Detroit River, site grids 503, 504, and 505

Includes the following access site; Belanger Park ramp, Delray ramp, St. Jean ramp and Alter Road ramp

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INSTRUCTIONS: Interview as many anglers at the end of their fishing trip as possible and record the data on the interview data sheets. Record data for the entire fishing party on one interview sheet. Do not interview charter boat anglers. Check all boats coming back to the launch ramps/access areas and **do not forget to record non-fishing (pleasure boats, but not sailboats or jet skis) on your interview form.** For non-fishing boats, record all data up to and including 'Day of week' on the interview form.

Grid numbers are used for both fishing sites and interview sites (see enclosed maps). If you interview an angler party in grid 501, but they actually fished in grid 500, then 500 is the fishing site number and 501 is the interview site number. If the angler party fished in more than one grid, then the fishing site number would be the grid number where most of the fish were caught or most of the fishing effort took place. If the angler party fished outside Michigan waters, in other words in Canadian waters for the entire fishing trip do not record the interview. If the angler party spent 50% or more of their time fishing in Michigan waters, record the interview data.

For tournament angler parties: In addition to recording the fish harvest and other appropriate information also **code PKS as 00** under Fish Caught and Kept. This will help us identify angler parties that are actively fishing in a Fishing Tournament from all other anglers.

As you travel your interview route, the main requirement for being at a particular site is to gather as many interviews as possible. If you have traveled the route and most of the days activity is at one site, then that is where you should spend most of your time.

BIOLOGICAL SAMPLING INSTRUCTIONS

Biological data should be collected randomly from the sport catch for the areas listed below. The numbers of samples for each species listed for each month should be STRICTLY FOLLOWED!

Lower Detroit River (Grids 500, 501 and 502)

SPECIES	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
YEP	25	25	25	25	25	25	50	50
SMB				50	25	25	25	25
WAE	50	50	25	25	25	25	25	25
MUS				ALL	ALL	ALL	ALL	ALL

Upper Detroit River (Grids 503, 504 and 505)

SPECIES	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
YEP	25	25	25	25	25	25	50	50
SMB				50	25	25	25	25
WAE	50	50	25	25	25	25	25	25
MUS				ALL	ALL	ALL	ALL	ALL

Southern Lake St. Clair
Creel Census Schedule
Lake Erie Management Unit

1 Fisheries Assistant

Work shifts	I	March through October	6:00am to 2:30pm
	II	March	10:30am to 7:00pm
		April and October	11:30am to 8:00pm
		May and September	12:30pm to 9:00pm
		June and August	1:30pm to 10:00pm
		July	2:30pm to 11:00pm

INTERVIEW SITES

Area A: Access site in grids 507 and 509 (not including Metro Beach or Harrison Township ramps). Includes private marinas such as Ginos Surf and Jimmys Boats and the numerous marinas in the southern portion of grid 509 (see map).

Area B: Metro Beach ramp and Harrison Township ramp (at spillway).
Each ramp needs to be worked and equal amount of time. Therefore, on odd numbered Area B days work Metro Beach and on even numbered Area B days work Harrison Township.

INSTRUCTIONS: Interview as many anglers at the end of their fishing trip as possible and record the data on the interview data sheets. Record data for the entire fishing party on one interview sheet. Do not interview charter boat anglers. Check all boats coming back to the launch ramps/access areas and **do not forget to record non-fishing (pleasure boats, but not sailboats or jet skis) on your interview form.** For non-fishing boats, record all data up to and including 'Day of week' on the interview form.

Grid numbers are used for both fishing sites and interview sites (see enclosed maps). If you interview an angler party in grid 507, but they actually fished in grid 506, then 506 is the fishing site number and 507 is the interview site number. If the angler party fished in more than one grid, then the fishing site number would be the grid number where most of the fish were caught or most of the fishing effort took place. If the angler party fished outside Michigan waters, in other words in Canadian waters, for the entire fishing trip do not record the interview. If the angler party spent 50% or more of their time fishing in Michigan waters, record the interview data.

For tournament angler parties: In addition to recording the fish harvest and other appropriate information also **code PKS as 00** under Fish Caught and Kept. This will help us identify angler parties that are actively fishing in a Fishing Tournament from all other anglers.

Prior to the opening of bass season (March 1 through June 14) in addition to recording the fish harvest and other appropriate information code all anglers who you think may have been fishing for smallmouth bass (catch and release) as **SMB RELEASED 00.** This coding box can be found on side two of the interview form. If the angler party responds that they were catch and release fishing for smallmouth bass then record the actual number of smallmouth bass released. To determine whether on not an angler party may have been targeting smallmouth prior to the season **observe their fishing gear.** A bass type boat or bass type lures on their rods is sufficient reason to code SMB released as 00.

BIOLOGICAL SAMPLING INSTRUCTIONS

Biological data should be collected randomly from the sport catch for the areas listed below. The numbers of samples for each species listed for each month should be STRICTLY FOLLOWED!

Area A

SPECIES	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
YEP	25	25	25	25	25	25	50	50
SMB				50	25	25	25	25
WAE	50	50	25	25	25	25	25	25
MUS				ALL	ALL	ALL	ALL	ALL

Area B

SPECIES	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
YEP	25	25	25	25	25	25	50	50
SMB				50	25	25	25	25
WAE	50	50	25	25	25	25	25	25
MUS				ALL	ALL	ALL	ALL	ALL

Central Lake St. Clair
Creel Census Schedule
Lake Erie Management Unit

1 Fisheries Assistant

Work shifts	I	March through October	6:00am to 2:30pm
	II	March	10:30am to 7:00pm
		April and October	11:30am to 8:00pm
		May and September	12:30pm to 9:00pm
		June and August	1:30pm to 10:00pm
		July	2:30pm to 11:00pm

INTERVIEW SITES

Area A: Private marinas in grid 512 south of Selfridge Public Access Site (see map) such as Mac and Ray Marine, McMachen Marine, Markely Marine, Sundog Marine, MI Mar Salv Marine, C&N Marine, Island Cove Marine, Lands End and Roy's Boats.

Area B: Harley public boat launch.

INSTRUCTIONS: Interview as many anglers at the end of their fishing trip as possible and record the data on the interview data sheets. Record data for the entire fishing party on one interview sheet. Do not interview charter boat anglers. Check all boats coming back to the launch ramps/access areas and **do not forget to record non-fishing (pleasure boats, but not sailboats or jet skis) on your interview form.** For non-fishing boats, record all data up to and including 'Day of week' on the interview form.

Grid numbers are used for both fishing sites and interview sites (see enclosed maps). If you interview an angler party in grid 512, but they actually fished in grid 513, then 513 is the fishing site number and 512 is the interview site number. If the angler party fished in more than one grid, then the fishing site number would be the grid number where most of the fish were caught or most of the fishing effort took place. If the angler party fished outside Michigan waters, in other words in Canadian waters, for the entire fishing trip do not record the interview. If the angler party spent 50% or more of their time fishing in Michigan waters, record the interview data.

For tournament angler parties: In addition to recording the fish harvest and other appropriate information also **code PKS as 00** under Fish Caught and Kept. This will help us identify angler parties that are actively fishing in a Fishing Tournament from all other anglers.

Prior to the opening of bass season (March 1 through June 14) in addition to recording the fish harvest and other appropriate information code all anglers who you think may have been fishing for smallmouth bass (catch and release) as **SMB RELEASED 00.** This coding box can be found on side two of the interview form. If the angler party responds that they were catch and release fishing for smallmouth bass, then record the actual number of smallmouth bass released. To determine whether on not an angler party may have been targeting smallmouth prior to the season **observe their fishing gear.** A bass type boat or bass type lures on their rods is sufficient reason to code SMB released as 00.

BIOLOGICAL SAMPLING INSTRUCTIONS

Biological data should be collected randomly from the sport catch for the areas listed below. The numbers of samples for each species listed for each month should be STRICTLY FOLLOWED!

Area A

SPECIES	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
YEP	25	25	25	25	25	25	50	50
SMB				50	25	25	25	25
WAE	50	50	25	25	25	25	25	25
MUS				ALL	ALL	ALL	ALL	ALL

Area B

SPECIES	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
YEP	25	25	25	25	25	25	50	50
SMB				50	25	25	25	25
WAE	50	50	25	25	25	25	25	25
MUS				ALL	ALL	ALL	ALL	ALL

Northern Lake St. Clair
2004 Creel Census Schedule
Lake Erie Management Unit

1 Fisheries Assistant

Work shifts	I	March through October	6:00am to 2:30pm
	II	March	10:30am to 7:00pm
		April and October	11:30am to 8:00pm
		May and September	12:30pm to 9:00pm
		June and August	1:30pm to 10:00pm
		July	2:30pm to 11:00pm

INTERVIEW SITES

Area A: Access sites in grid 514 (see map). Equal amounts of time should be spent at public launch ramps and at private marinas. Therefore, on even numbered Area A days interview anglers at public launch ramps in grid 514 such as Fairhaven or Deckers ramps. On odd number days Area A days conduct interviews at private marinas in grid 514 (to be named).

Area B: Access sites in grid 513 and north half of 512 (includes Selfridge public access launch, Captains Cove, American Marina, Cotton Road, Prop Basin Marina, Sunup Marina, Lagos Bosun-Walts Marina, Brandenberg PAS, Schmid Marina, Chateau Marina.

INSTRUCTIONS: Interview as many anglers at the end of their fishing trip as possible and record the data on the interview data sheets. Record data for the entire fishing party on one interview sheet. Do not interview charter boat anglers. Check all boats coming back to the launch ramps/access areas and **do not forget to record non-fishing (pleasure boats, but not sailboats or jet skis) on your interview form.** For non-fishing boats, record all data up to and including 'Day of week' on the interview form.

Grid numbers are used for both fishing sites and interview sites (see enclosed maps). If you interview an angler party in grid 514, but they actually fished in grid 513, then 513 is the fishing site number and 514 is the interview site number. If the angler party fished in more than one grid, then the fishing site number would be the grid number where most of the fish were caught or most of the fishing effort took place. If the angler party fished outside Michigan waters, in other words in Canadian waters, for the entire fishing trip do not record the interview. If the angler party spent 50% or more of their time fishing in Michigan waters, record the interview data.

For tournament angler parties: In addition to recording the fish harvest and other appropriate information also **code PKS as 00** under Fish Caught and Kept. This will help us identify angler parties that are actively fishing in a Fishing Tournament from all other anglers.

Prior to the opening of bass season (March 1 through June 14) in addition to recording the fish harvest and other appropriate information code all anglers who you think may have been fishing for smallmouth bass (catch and release) as **SMB RELEASED 00.** This coding box can be found on side two of the interview form. If the angler party responds that they were catch and release fishing for smallmouth bass, then record the actual number of smallmouth bass released. To determine whether on not an angler party may have been targeting smallmouth prior to the season **observe their fishing gear.** A bass type boat or bass type lures on their rods is sufficient reason to code SMB released as 00.

BIOLOGICAL SAMPLING INSTRUCTIONS

Biological data should be collected randomly from the sport catch for the areas listed below. The numbers of samples for each species listed for each month should be STRICTLY FOLLOWED!

Area A

SPECIES	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
YEP	25	25	25	25	25	25	50	50
SMB				50	25	25	25	25
WAE	50	50	25	25	25	25	25	25
MUS				ALL	ALL	ALL	ALL	ALL

Area B

SPECIES	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
YEP	25	25	25	25	25	25	50	50
SMB				50	25	25	25	25
WAE	50	50	25	25	25	25	25	25
MUS				ALL	ALL	ALL	ALL	ALL

St. Clair River
2004 Creel Census Schedule
Lake Erie Management Unit

1 Fisheries Assistant

Work shifts	I	March through October	6:00am to 2:30pm
	II	March	10:30am to 7:00pm
		April and October	11:30am to 8:00pm
		May and September	12:30pm to 9:00pm
		June and August	1:30pm to 10:00pm
		July	2:30pm to 11:00pm

INTERVIEW SITES

Area A: Lower St. Clair River, grids 515 and 516
Includes the following access sites; Algonac public launch, Algonac municipal launch ramp and the Marine City public access ramp.

Area B: Upper St. Clair River, grids 517, 518 and 519
Includes the following access sites; St. Clair launch ramp, St. Clair Harbor, Marysville municipal ramp and 12th Street ramp (Port Huron)

INSTRUCTIONS: Interview as many anglers at the end of their fishing trip as possible and record the data on the interview data sheets. Record data for the entire fishing party on one interview sheet. Do not interview charter boat anglers. Check all boats coming back to the launch ramps/access areas and **do not forget to record non-fishing (pleasure boats, but not sailboats or jet skis) on your interview form.** For non-fishing boats, record all data up to and including 'Day of week' on the interview form.

Grid numbers are used for both fishing sites and interview sites (see enclosed maps). If you interview an angler party in grid 515, but they actually fished in grid 517, then 517 is the fishing site number and 515 is the interview site number. If the angler party fished in more than one grid, then the fishing site number would be the grid number where most of the fish were caught or most of the fishing effort took place. If the angler party fished outside Michigan waters, in other words in Canadian waters for the entire fishing trip do not record the interview. If the angler party spent 50% or more of their time fishing in Michigan waters, record the interview data.

For tournament angler parties: In addition to recording the fish harvest and other appropriate information also **code PKS as 00** under Fish Caught and Kept. This will help us identify angler parties that are actively fishing in a Fishing Tournament from all other anglers.

As you travel your interview route, the main requirement for being at a particular site is to gather as many interviews as possible. If you have traveled the route and most of the days activity is at one site, then that is where you should spend most of your time.

BIOLOGICAL SAMPLING INSTRUCTIONS

Biological data should be collected randomly from the sport catch for the areas listed below. The numbers of samples for each species listed for each month should be STRICTLY FOLLOWED!

Lower St. Clair River (Grids 515 and 516)

SPECIES	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
YEP	25	25	25	25	25	25	50	50
SMB				50	25	25	25	25
WAE	50	50	25	25	25	25	25	25
MUS				ALL	ALL	ALL	ALL	ALL

Upper St. Clair River (Grids 517, 518 and 519)

SPECIES	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
CHS	25	25	25					
RBT	25	25	25					
YEP	25	25	25	25	25	25	50	50
SMB				50	25	25	25	25
WAE	50	50	25	25	25	25	25	25
MUS				ALL	ALL	ALL	ALL	ALL

LAKE ST. CLAIR – Grids 507 and 509
2004 WINTER CREEL SURVEY
Lake Erie Management Unit

1 Fisheries Assistant

Work shifts I 8:00 am to 4:30 pm

II 10:30 am to 7:00 pm

INTERVIEW SITES

Area A Grid 507 – includes St. Clair Shores Municipal ramp at the end of 11 Mile road, St. Clair Shores Blossom Heath Park & launch, Gross point Woods ramp

Area B Grid 509 – includes Metro Beach, Ginos Surf restaurant parking, DNR Spillway PAS, Spillway Canal county parking, Harrison Twp. Park near Shook road, St. Clair Shores Memorial Park at Masonic road.

INSTRUCTIONS: Interview as many anglers at the end of their fishing trip as possible and record the data for the entire fishing party on the interview data sheet.

PLEASE NOTE: collect interviews from all the following fishing modes.

1) **Shanty** – all anglers using stationary and portable shanties; remember to ask whether they were fishing in a shanty or on open ice (#2). Portable shanties are considered "Shanty" fishing not open ice. This is because the air pilot cannot differentiate the 2 types of shanties while doing counts from the airplane.
2) **Open Ice** – anglers fishing on the lake, off shore, or off any docks (such as in the marinas) this is only used when the anglers are fishing THROUGH the ICE in any of the locations.
3) **Boat** – all anglers using boats
4) **Pier/Dock or Shore** – use these modes ONLY when no ice is present in the area. Interview the anglers fishing open waters from shore or on pier/docks.

On the days for which times are indicated, go out onto the ice and do a shanty occupancy check. DO NOT VENTURE OUT ON UNSAFE ICE! Just because some angler is out there fishing does not mean the ice is safe, check it yourself-- **DO NOT TAKE CHANCES**. Record the total number of ice shanties (both portable and non-portable) you checked, the number occupied, and the number that were not occupied on the ice shanty data sheet (attached at the rear of this schedule). You should attempt to check all shanties in your work area. However, there can be times when there are so many ice shanties that it is impractical to check them all, and then do a sub-sample. A sub-sample means to check a representative number of ice shanties, for instance 50 of 100. A shanty occupancy check should last a maximum of 2 hours. REMEMBER TO RECORD THE NUMBER OF SHANTIES YOU ACTUALLY CHECKED AND NOT THE TOTAL NUMBER OF SHANTIES ON THE ICE.

Biological data should be collected throughout the winter as per the guidelines on the following page.

BIOLOGICAL SAMPLING INSTRUCTIONS

Biological data should be collected randomly from the sport catch for the grids listed below. The numbers of samples for each species listed for each month should be STRICTLY FOLLOWED!

Grids 507 and 509

SPECIES - STRUCTURE	JANUARY	FEBRUARY
YEP - scales	100	100
WAE – dorsal spine ray	50	50
NOP – dorsal spine ray	50	50

LAKE ST. CLAIR – Grid 512
WINTER CREEL SURVEY 2004
Lake Erie Management Unit

1 Fisheries Assistant

Work shifts I 8:00 am to 4:30 pm

II 10:30 am to 7:00 pm

INTERVIEW SITES

Area A Access sites in **northern** ½ of Grid 512 – includes Brandenburg Park, Cotton Road (where it intersects with Jefferson), and Selfridge PAS (the southern boundary for area A)

Area B Access sites in **southern** ½ of Grid 512 – includes Garwoods parking lot, Harley PAS, Sea Cadets parking lot on S. River Road (access to Clinton River & Archer canals), Bridgeview parking lot on N. River Road (Clinton River access)

INSTRUCTIONS: Interview as many anglers at the end of their fishing trip as possible and record the data for the entire fishing party on the interview data sheet.

PLEASE NOTE: collect interviews from all the following fishing modes.

1) **Shanty** – all anglers using stationary and portable shanties; remember to ask whether they were fishing in a shanty or on open ice (#2). Portable shanties are considered "Shanty" fishing not open ice. This is because the air pilot cannot differentiate the 2 types of shanties while doing counts from the airplane.
2) **Open Ice** – anglers fishing on the lake, off shore, or off any docks (such as in the marinas) this is only used when the anglers are fishing THROUGH the ICE in any of the locations.
3) **Boat** – all anglers using boats
4) **Pier/Dock or Shore** – use these modes ONLY when no ice is present in the area. Interview the anglers fishing open waters from shore or on pier/docks.

On the days for which times are indicated, go out onto the ice and do a shanty occupancy check. DO NOT VENTURE OUT ON UNSAFE ICE! Just because some angler is out there fishing does not mean the ice is safe, check it yourself-- **DO NOT TAKE CHANCES**. Record the total number of ice shanties (both portable and non-portable) you checked, the number occupied, and the number that were not occupied on the ice shanty data sheet (attached at the rear of this schedule). You should attempt to check all shanties in your work area. However, there can be times when there are so many ice shanties that it is impractical to check them all, and then do a sub-sample. A sub-sample means to check a representative number of ice shanties, for instance 50 of 100. A shanty occupancy check should last a maximum of 2 hours. REMEMBER TO RECORD THE NUMBER OF SHANTIES YOU ACTUALLY CHECKED AND NOT THE TOTAL NUMBER OF SHANTIES ON THE ICE.

Biological data should be collected throughout the winter as per the guidelines on the following page.

BIOLOGICAL SAMPLING INSTRUCTIONS

Biological data should be collected randomly from the sport catch for the grids listed below. The numbers of samples for each species listed for each month should be STRICTLY FOLLOWED!

Grid 512

SPECIES - STRUCTURE	JANUARY	FEBRUARY
YEP - scales	100	100
WAE – dorsal spine ray	50	50
NOP – dorsal spine ray	50	50

LAKE ST. CLAIR – Grid 513 and Grid 514
WINTER CREEL SURVEY 2004
Lake Erie Management Unit

1 Fisheries Assistant

Work shifts I 8:00 am to 4:30 pm

II 10:30 am to 7:00 pm

INTERVIEW SITES

Area A Grid 513 – includes New Baltimore Park, Swan Creek, Ruedisale Park, and there are private lands used to access the ice.

Area B Grid 514 – includes Fairhaven PAS, Raft parking lot, possible at Deckers PAS (if no ice)

INSTRUCTIONS: Interview as many anglers at the end of their fishing trip as possible and record the data for the entire fishing party on the interview data sheet.

PLEASE NOTE: collect interviews from all the following fishing modes.

1) **Shanty** – all anglers using stationary and portable shanties; remember to ask whether they were fishing in a shanty or on open ice (#2). Portable shanties are considered "Shanty" fishing not open ice. This is because the air pilot cannot differentiate the 2 types of shanties while doing counts from the airplane.
2) **Open Ice** – anglers fishing on the lake, off shore, or off any docks (such as in the marinas) this is only used when the anglers are fishing THROUGH the ICE in any of the locations.
3) **Boat** – all anglers using boats
4) **Pier/Dock or Shore** – use these modes ONLY when no ice is present in the area. Interview the anglers fishing open waters from shore or on pier/docks.

On the days for which times are indicated, go out onto the ice and do a shanty occupancy check. DO NOT VENTURE OUT ON UNSAFE ICE! Just because some angler is out there fishing does not mean the ice is safe, check it yourself-- **DO NOT TAKE CHANCES**. Record the total number of ice shanties (both portable and non-portable) you checked, the number occupied, and the number that were not occupied on the ice shanty data sheet (attached at the rear of this schedule). You should attempt to check all shanties in your work area. However, there can be times when there are so many ice shanties that it is impractical to check them all, and then do a sub-sample. A sub-sample means to check a representative number of ice shanties, for instance 50 of 100. A shanty occupancy check should last a maximum of 2 hours. REMEMBER TO RECORD THE NUMBER OF SHANTIES YOU ACTUALLY CHECKED AND NOT THE TOTAL NUMBER OF SHANTIES ON THE ICE.

Biological data should be collected throughout the winter as per the guidelines on the following page.

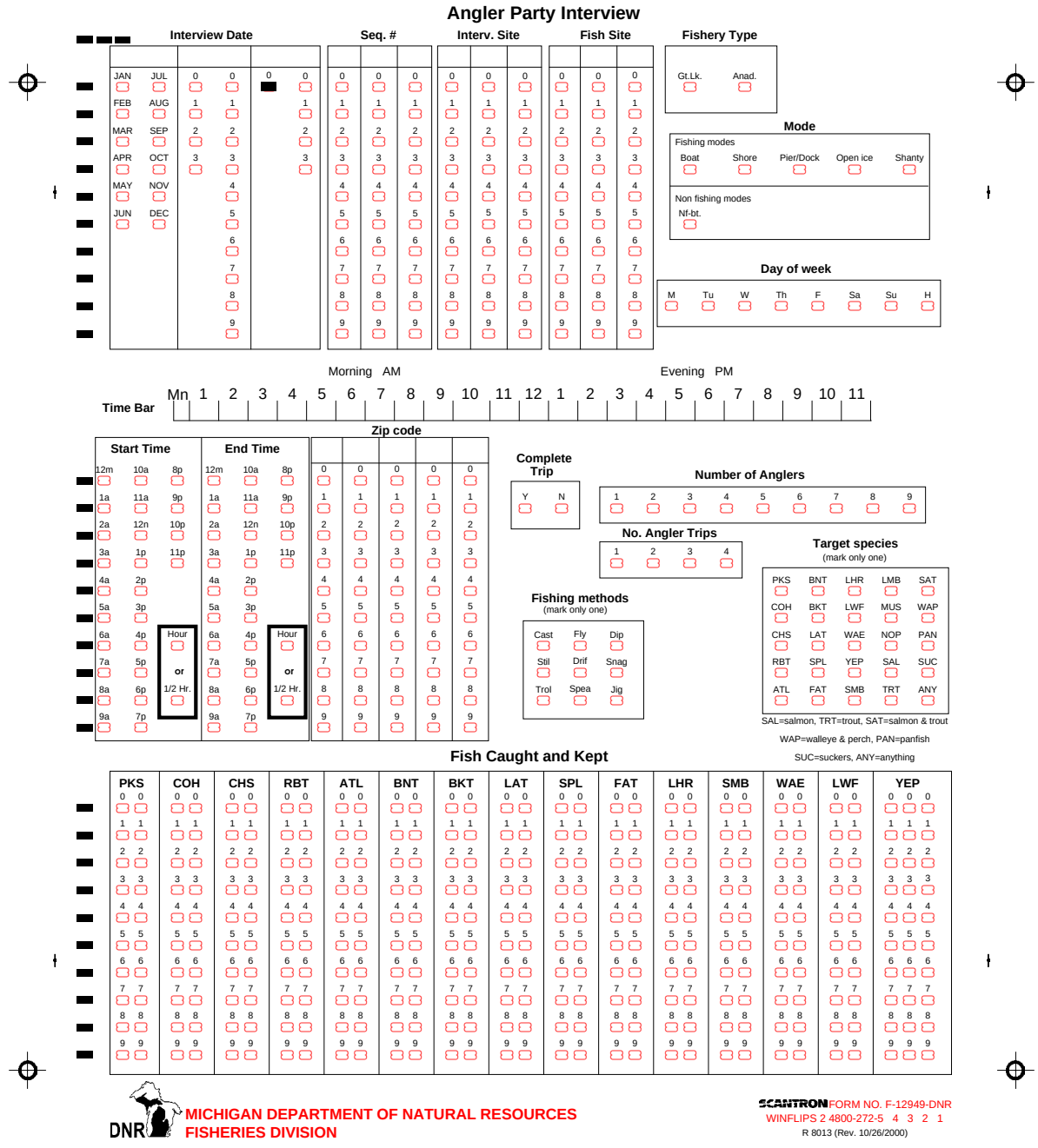
BIOLOGICAL SAMPLING INSTRUCTIONS

Biological data should be collected randomly from the sport catch for the grids listed below. The numbers of samples for each species listed for each month should be STRICTLY FOLLOWED!

Grids 513 & Grid 514

SPECIES - STRUCTURE	JANUARY	FEBRUARY
YEP - scales	100	100
WAE – dorsal spine ray	50	50
NOP – dorsal spine ray	50	50

Appendix C-1.– Bubble form used by creel clerks to record party interview data during creel survey on the Detroit River, Lake St. Clair, and St. Clair River, 2002 and 2003.



(Side 2, Angler Interview)

Fish Caught and Kept

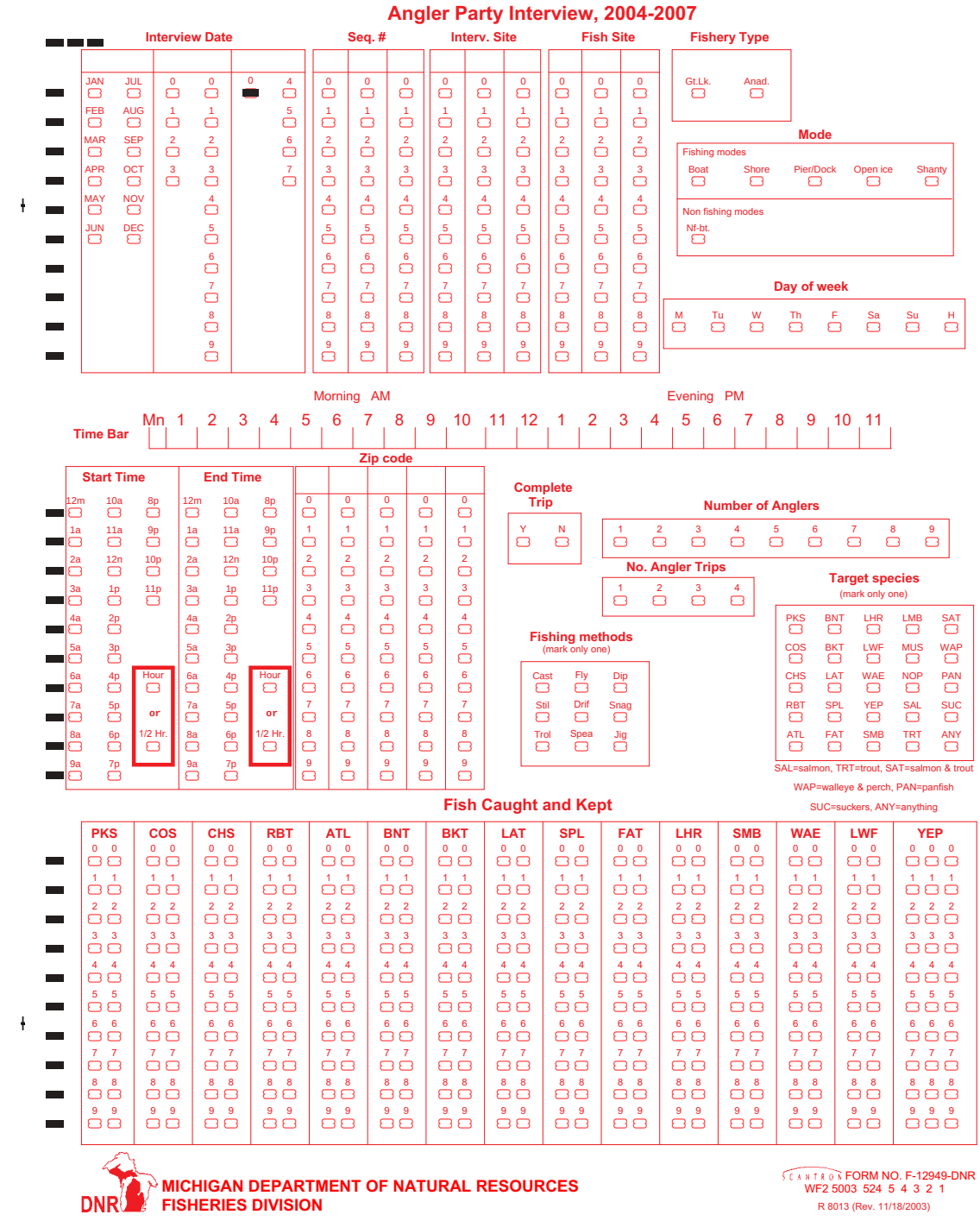
WHB	WHP	NOP	MUS	TMU	BCR	BLG	LMB	PSF	RKB	CCF	DRU	CWS	RWF	OTH
0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2
3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3
4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4
5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5
6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6
7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7
8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8
9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9

Fish Caught and Released (Legal size only)

COH	CHS	RBT	BNT	LAT	SMB	LMB	WAE	NOP	MUS	WHB				
0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2
3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3
4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4
5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5
6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6
7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7
8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8
9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9

R 8013 (Rev. 10/26/2000)

Appendix C-2.– Bubble form used by creel clerks to record party interview data during creel survey on the Detroit River, Lake St. Clair, and St. Clair River, 2004 and 2005.



(Side 2, Angler Interview, 2004-2007)

Fish Caught and Kept

WHB	WHP	NOP	MUS	TMU	BCR	BLG	LMB	PSF	RKB	CCF	DRU	CWS	RWF	OTH
0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2
3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3
4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4
5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5
6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6
7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7
8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8
9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9

Fish Caught and Released (Legal size only)

COS	CHS	RBT	BNT	LAT	SMB	LMB	WAE	NOP	MUS	WHB				
0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2
3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3
4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4
5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5
6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6
7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7
8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8
9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9

Fish Caught and Released (NON-LEGAL size only)

COS	CHS	RBT	BNT	LAT	SMB	LMB	WAE	NOP	MUS	WHB				
0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2
3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3
4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4
5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5
6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6
7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7
8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8
9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9

R 8013 (Rev. 11/18/2003)

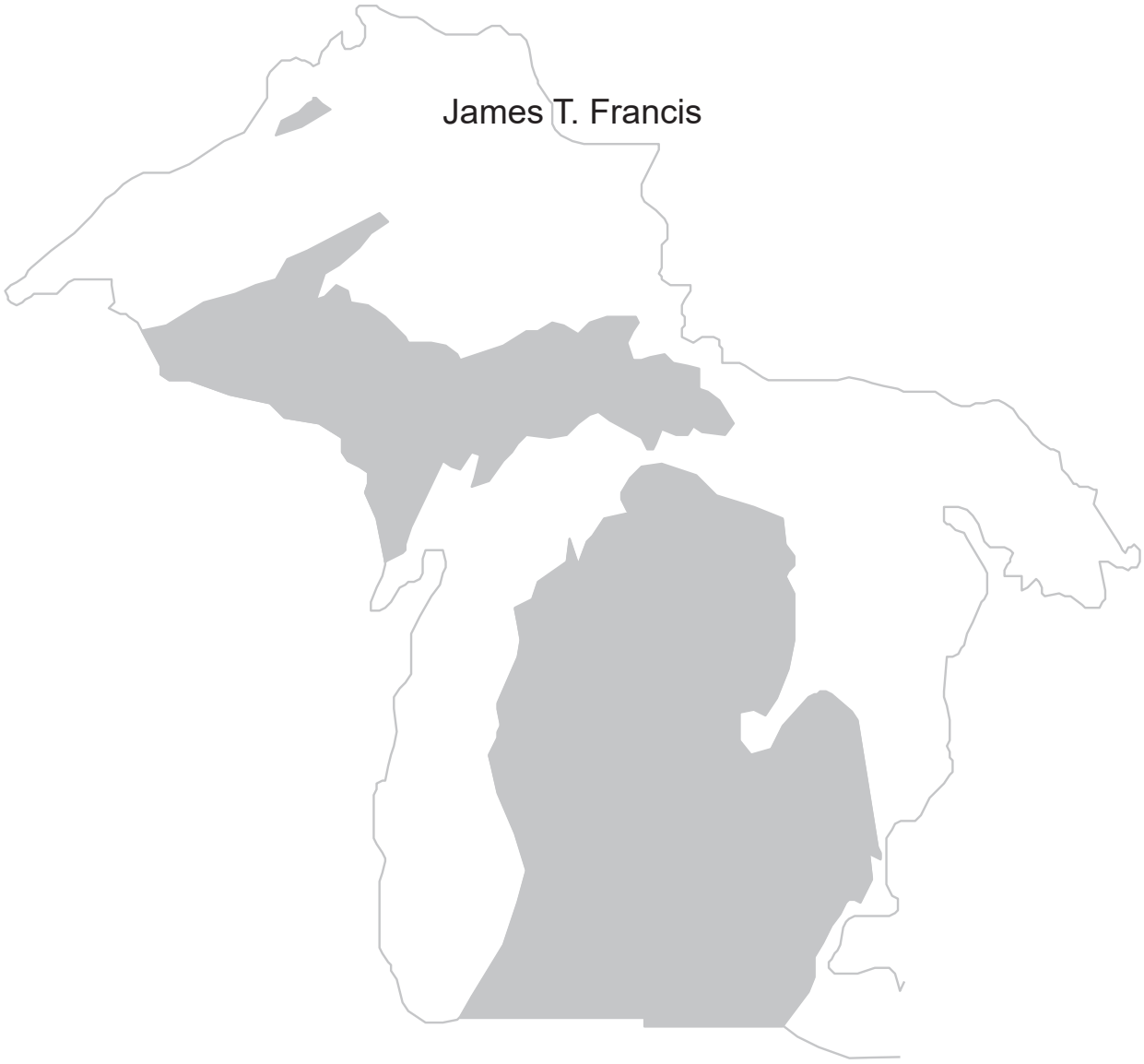
The Walleye Fishery of the Detroit River, Spring 2000

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES

Number 2005-1 May 2005

The Walleye Fishery of the Detroit River, Spring 2000

James T. Francis



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FISHERIES DIVISION
TECHNICAL REPORT
195

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
FISHERIES DIVISION

Fisheries Technical Report 2005-1
May 2005

The Walleye Fishery of the Detroit River, Spring 2000

James T. Francis

For information or assistance on this publication, contact the Michigan Department of Natural Resources, Fisheries Division, Box 30446, Lansing, MI 48909, or call 517-373-1280.

This publication is available in alternative formats.

Printed under authority of Michigan Department of Natural Resources
Total number of copies printed 160 — Total cost $238.52 — Cost per copy $1.49

Suggested Citation Format

Francis, J. T. 2005. The walleye fishery of the Detroit River, Spring 2000. Michigan Department of Natural Resources, Fisheries Technical Report 2005-1, Ann Arbor.

Michigan Department of Natural Resources
Fisheries Technical Report 2005-1, 2005

The Walleye Fishery of the Detroit River, Spring 2000

James T. Francis

Michigan Department of Natural Resources
Lake Erie Management Unit
38980 Seven Mile Rd.
Livonia, MI 48152

Abstract.–The objective of this study was to evaluate the spring walleye fishery on the Detroit River and compare results to historical catch survey data. In spring 2000, a progressive-access catch survey was conducted on the trailer boat fishery on the U.S. side of the Detroit River. A total of 1,114 interviews were conducted during the 9-week survey from March 11 to May 16, 2000. The estimated harvest was 97,292 walleyes from 344,741 angler hours, with 73% of the effort and 63% of the harvest taking place in the lower half of the river. This is a significant increase in both total effort and harvest compared to earlier surveys. The development of an intense spring fishery for walleye is likely the result of an increased walleye population in Lake Erie, publicity about the fishery, and improvements in boating and fishing equipment.

Introduction

Walleyes *Sander vitreus* support an important commercial and sport fishery in Lake Erie, with most of the harvest taking place in the productive western basin. From 1990 to 2002, the walleye harvest in the western basin averaged 3.4 million fish per year, compared to 1.6 million walleyes for the rest of the lake (Lake Erie Walleye Task Group 2003). In addition to supporting a fishery in Lake Erie, a significant number of walleyes migrate annually up the Detroit River into Lake St. Clair and Lake Huron. Recovery patterns for walleyes tagged in Lake Erie during the spring clearly illustrate this northward migration during April and May (Thomas and Haas 2003). These migrating walleyes support an intense seasonal fishery on the Detroit River. The objective of this study was to document harvest and effort by the trailer boat fishery in Michigan waters of the Detroit River during the spring walleye run.

The Detroit River is a 52-km long connecting waterway between Lake St. Clair and Lake Erie. The discharge of the river averages 5,200 m^3/s and flow velocities range from 0.30 to 0.88 m/s (Derecki 1984). The river is bisected by the international boundary with Canada.

Methods

A progressive-access catch survey was conducted from March 11, 2000 until May 16, 2000 along the U.S. side of the Detroit River. Nine public boating access sites were identified along the U.S. side of the Detroit River and all were included in the survey (Figure 1). The daylight hours were divided into two intervals. The first shift began at daylight and ended in the afternoon; the second shift began in the morning and ended at sunset. Shift hours varied by month due to varying length of daylight among months (Table 1). No effort was made to survey shore anglers or moored boats.

The creel clerk was scheduled for four, 10-hour shifts each week, including both weekend

days and two randomly selected weekdays. Work shift, starting site, direction of travel (up or downstream), and time to begin a trailer count were all selected randomly. At the beginning of a shift, the clerk proceeded to the predetermined starting site and began conducting interviews. Of the nine sites covered in the survey, four had less activity than the five primary sites (Figure 1). The five primary sites were identified as "interview sites." The clerk allocated the workday so that approximately equal amounts of interview time were spent at each interview site. At a predetermined time, the clerk visited each site (both interview and non-interview sites) to record the number of trailers parked in the lot. Following the trailer count, the clerk continued conducting interviews through the end of the shift.

The clerk interviewed each boat that returned to the access site during the scheduled shift. A standard angler party interview form on a scantron sheet was used to record data. Date, time, and interview site were recorded for all interviews. If the boater did not fish, that was recorded on the form as a non-angler and the interview was ended. If fishing did take place, the angler was asked to provide their zip code, number of anglers in the party, fishing mode, target species, time fishing started and ended, and species and number of fish harvested and released. If fishing took place on the Canadian side of the river or outside of the river (Lake St. Clair or Lake Erie), the data were recorded, but these interviews were excluded from analysis.

Fishing effort was determined through counts of boat trailers at all nine public boating access sites. Angler interviews provided the number of anglers per boat, length of fishing trip, and catch rates. The proportion of boaters who indicated they were not fishing was used to adjust the trailer counts for non-fishing effort.

Catch and effort estimates were made for each site by month. Because sampling did not occur over the entire month in March and May, estimates were calculated only for the period surveyed. Monthly site estimates were summed for an approximate total river estimate. Expansion values (F in Lockwood et al. 1999) are given in Table 1. Standard mathematical formulas for creel census (Lockwood et al. 1999) were used to calculate estimates of number of fish harvested. Estimates of fish released were not computed, but inspection of the interview slips indicates very few legal walleyes were released. Three measures of fishing effort were estimated: angler hours, angler trips, and angler days. An angler trip was considered to be one completed fishing excursion. An angler day was defined as one or more fishing excursions during a 24-hour period. Error bounds for all catch and effort estimates in this report are defined as two standard errors of the estimate.

Results

A total of 1,114 interviews were conducted during the survey. Only 46 of the total interviews were from boats that were not fishing. Most of the anglers interviewed (92%) were targeting walleye and most (93%) were fishing in the Detroit River (Tables 2 and 3).

Walleyes comprised the bulk of the catch, but white bass *Morone chrysops*, yellow perch *Perca flavescens*, and a variety of other species were taken (Table 4). At all sites combined, the estimated harvest was 97,292 walleyes from 344,741 angler hours, for an average harvest rate of 0.2822 walleye per hour. However, walleye harvest rate ranged from 0.1760 per hour at Lake Erie Metropark to 0.4553 per hour at Belanger Park (Table 5). Most effort (73%) and catch (63%) were recorded from the three most downriver sites. The month of April, which was sampled from start to finish, accounted for most of the fishing pressure and harvest. Sixteen days in May produced an estimate of effort roughly three times higher than 21 days surveyed in March.

Anglers reported traveling from 332 postal zip codes. Most anglers were Michigan residents (97%), but anglers from Illinois, Indiana, Iowa, Maryland, North Carolina, Ohio, Pennsylvania, Wisconsin, and Oklahoma were represented (Table 6). Most of the Michigan anglers resided in Wayne (41%), Oakland (15%), and Macomb (13%) counties (Table 7).

Discussion

Fishing effort has increased dramatically on the Detroit River. This may be deduced from

annual trends in survey data which, although not strictly comparable due to differences in methods used and months sampled, represent the bulk of the fishery. The first catch surveys on the Detroit River were conducted in 1942 and 1943 (Krumholz and Carbine 1943, 1945). From mid-May through October 1942, boat anglers fished 135,029 hours and harvested a total of 62,855 fish (Table 8). Most of the harvest was walleye (45%), followed by yellow perch (35%), suckers (5%), rock bass *Ambloplites rupestris* (5%), freshwater drum *Aplodinotus grunniens* (4%), and white bass (3%). During the 1943 season, both fishing effort and harvest were down. From the end of May through September 1943, boat anglers fished 62,730 hours and harvested 19,321 fish (Table 8). Walleye (79%) and yellow perch (7%) again accounted for most of the catch. Extensive shore fishing was observed but estimates of fishing effort were not made.

The next catch survey was conducted on the Detroit River during the 1980 and 1981 fishing seasons (Bryant 1984). Fishing effort had increased substantially compared to the earlier survey. Boat anglers averaged 425,592 angler hours annually from May through November 1980 and May through September 1981 (Table 8). Total catch ranged from 233,356 fish in 1981 to 499,068 fish in 1980, and walleye harvest averaged 89,781 fish per year. Walleye, yellow perch, and white bass were the primary species harvested. The study by Bryant (1984) was the first study to estimate effort and catch by shore anglers on the Detroit River. Shore angler effort exceeded boat angler effort during both years (Table 8). Shore anglers averaged 246,335 fish per year, primarily yellow perch, freshwater drum, rock bass, and white bass.

During the short time period before the next survey was conducted, in 1983 and 1984, effort and harvest had increased dramatically for both boat (trailered and moored) and shore anglers (Haas et al. 1985). Boat angler effort increased to an average of 681,602 angler hours for April through November 1983 and 1984 (Table 8). Anglers harvested an average of 915,153 fish per year, of which walleye accounted for 142,245 fish per year. Shore angler effort increased to 714,958 angler hours and harvest to 502,690 fish.

Lake Erie is highly regarded for its walleye fishing opportunities. For comparison purposes, 205,215 walleyes were harvested in Michigan waters of Lake Erie by 712,742 angler hours in 7 months, April to October 2000 (Thomas and Haas 2001). This compares to 97,292 walleyes harvested from the Detroit River by 344,741 angler hours during a 9-week period in the same year. Although this current survey focused on the most intense part of the walleye fishery on the Detroit River, there is a walleye fishery year around, whenever ice is not present. Therefore, based on effort and harvest patterns for the summer and fall months from earlier Detroit River catch surveys, total fishing effort and walleye harvest on the Detroit River may be similar to that on Lake Erie.

It appears that the specialized spring walleye fishery has developed since the mid-1980s when the last catch survey was conducted on the Detroit River. April is the only month for which estimates are available for the entire month in the current survey. In April 2000, anglers fished 256,151 angler hours and harvested 78,836 walleyes. In comparison, an average effort of 16,571 angler hours and an average catch of 1,308 walleyes were estimated for April 1983 and 1984 (Haas et al. 1985). The effort estimate for April 2000 is comparable to the month of highest effort in 1983 and 1984, which was June (265,407 and 204,746 angler hours, respectively). The month of highest walleye catches in 1983 and 1984 were July and June, respectively.

The development of this early spring fishery in the Detroit River is likely the result of a combination of factors. One is an increase in walleye abundance (Figure 2). The adult walleye population increased dramatically in 1984 (due to a very large 1982 year class) and remained high during the late 1980s. In the 1990s the walleye population declined but was still 40% higher than in the early 1980s. Walleye population levels in Lake Erie are important because tagging studies have shown that a substantial migration occurs in which walleyes move from spawning locations in Lake Erie, up the Detroit River, and even into Lake St. Clair and the St. Clair River (Haas et al. 1988; Thomas and Haas 2003). These migrating fish contribute to the harvest throughout the connecting waters and even in southern Lake

Huron (McParland 1999) and Saginaw Bay (Fielder et al. 2000). Tagging studies confirm that the majority of the Detroit River walleye harvest comes from the Lake Erie population (Haas et al. 1988). Thus, the increased walleye population on Lake Erie likely has resulted in increased numbers of walleyes moving through the Detroit River and contributing to this fishery.

Another factor is publicity from numerous television shows, fishing magazines, and newspaper articles promoting the fishery in the late 1980s and early 1990s and stimulating increased interest. Increased interest is supported by the fact that walleye anglers now come from a wider area. In contrast, in 1942 and 1943 all interviewed anglers except two were from Wayne County (Krumholz and Carbine 1943, 1945). However, other factors, most notably improvements in travel, presumably also contributed to this shift in participants. Another factor in the increase in fishing pressure following the 1942 and 1943 surveys was the end of WWII. Other catch surveys documented an increase in fishing pressure after the war (Schneider and Lockwood 1979).

Additionally, improvements in boating and fishing equipment likely encouraged increased fishing. Boats and motors are more reliable today than during previous survey periods. This is especially important when fishing on the Detroit River in March and April when weather conditions can be harsh. In addition to providing safer access to the fishery, fishing techniques have improved. For example, the development of electric trolling motors allows for improved boat control. Most anglers that target walleye in the spring fishery use a technique called vertical jigging. Jigs are tipped with night crawlers, large shiners, artificial plastic baits, or a combination of artificial and live baits. Boat control is critical to ensure that the lure is presented in a vertical position despite strong currents.

The other popular fishing technique for walleye on the Detroit River is “handlining.” Body baits or spoons are fished from leaders connected to a wire line that runs to a spring loaded, self-winding reel. A 1- to 2-pound weight is used to take the baits to the bottom. This appears to be the same technique used by anglers during the 1940s survey (Krumholz and Carbine 1943). Based on personal observations, vertical jigging is much more prevalent during the day and handlining is used exclusively at night or when water clarity is poor.

Although the 1983–84 survey was conducted throughout the year and this 2000 survey only included a short time period in spring, both surveys found most of the catch and effort were recorded for sites on the lower half of the river. Boat anglers in 1983 and 1984 directed 80% of the fishing effort and caught 80% of the fish from Wyandotte downstream (Haas et al. 1985). In 2000, 73% of the effort and 63% of the catch came from this same area.

Effort and harvest estimates in this study are for the trailer boat fishery in spring 2000, during daylight hours, on the U.S. side of the Detroit River. There are boats that launch from the U.S. side, but fish on the Canadian side of the river that were not included in the survey. Likewise, there are anglers who do not trailer their boats, but keep them moored along the river. There is also an established night fishery. Additionally, there are numerous locations along the river where anglers fish from shore. All of these account for additional fishing effort and harvest that were not addressed in the current survey. Thus, fishing estimates derived from this study should be considered a conservative estimate of the entire fishery.

This survey successfully completed the objectives of documenting effort and harvest during the early season fishery on the Detroit River. Due to budget and personnel restrictions, a more comprehensive survey was not possible. However, it is recommended that a complete survey be planned for the Detroit River fishery. This should include the entire boat fishery, not just the trailer boat fishery, as well as estimates of shore effort and harvest.

Acknowledgments

Many Fisheries Division personnel assisted in planning and conducting this study. Gary Towns provided the idea to conduct the survey and made the decisive, and sometimes controversial, personnel allocations needed to complete the work. Roger Lockwood assisted in the planning stages and developed the creel schedules. Scott Zajac conducted the survey and

provided valuable feed-back throughout the survey. Jerry Rakoczy and Donna Wesander processed the data sheets and generated effort and harvest estimates. Todd Somers assisted in the planning stages, supervised the creel clerk, and assisted with logistics during the survey. Jeff Braunscheidel provided input during the planning stages and provided comments on draft manuscripts. Comments from Mike Thomas and Jim Schneider on draft manuscripts greatly improved the final product. Thanks to all.

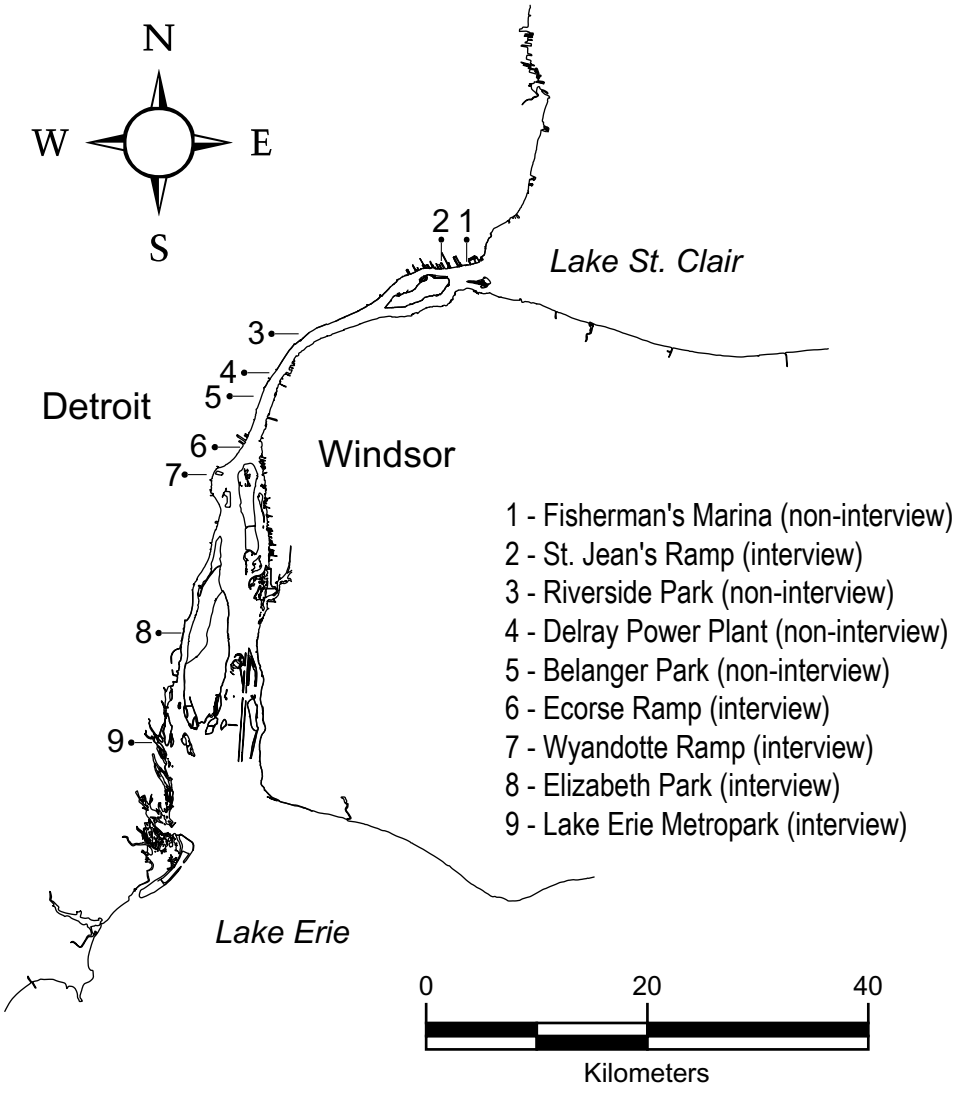

Figure 1.−Map of the Detroit River showing interview and trailer count site locations for the 2000 creel survey.

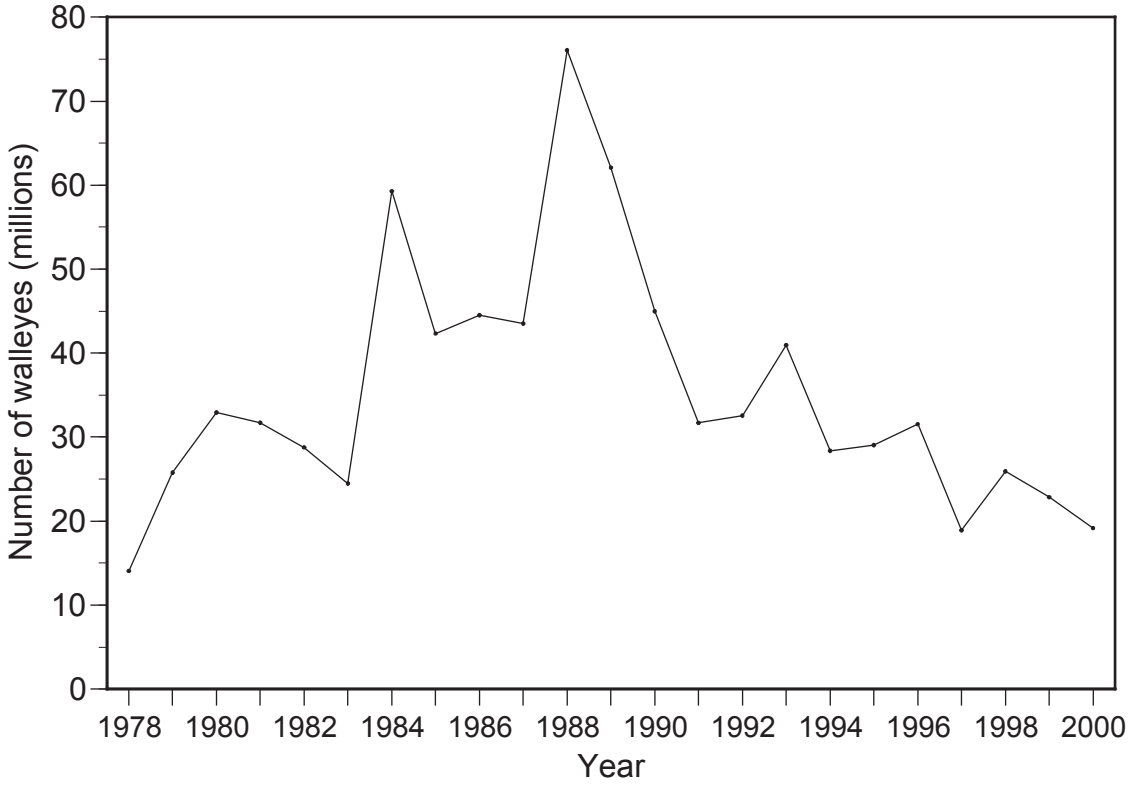

Figure 2.−Estimated abundance of age-2 and older walleye in Lake Erie (Lake Erie Walleye Task Group 2003).

Table 1.–Creel clerk work shifts for the Detroit River catch survey, 2000.

Month	Shift A	Shift B	Expansion values (F)
March	6 am – 4:30 pm	8 am – 6:30 pm	13
April	6 am – 4:30 pm	10 am – 8:30 pm	15
May	6 am – 4:30 pm	10 am – 8:30 pm	16

Table 2.–Frequency of targeted species for anglers interviewed at nine Michigan public boating access sites on the Detroit River, 2000.

Species Targeted	Number of interviews (%)
Walleye	984 (92%)
Anything	47 (4%)
Yellow perch	17 (2%)
Northern pike	10 (1%)
Smallmouth bass	5 (<1%)
Panfish	5 (<1%)

Table 3.–Frequency of area fished by anglers interviewed at nine Michigan public boating access sites on the Detroit River, 2000.

Area Fished	Number of Interviews
Detroit River	988
Canada	54
Lake Erie	14
Lake St. Clair	12
Total	1,068

Table 4.–Estimated fish harvest per hour, number harvested, and effort (angler hours, trips, and days) for the Detroit River trailer boat fishery, 2000 (two standard errors in parentheses).

Species	Harvest per hour	Month			Total
		March 11–31	April 1–30	May 1–16	
Walleye *Sander vitreus*	0.2822 (0.0148)	6,180 (1,369)	78,836 (3,323)	12,276 (1,850)	97,292 (4,042)
White bass *Morone chrysops*	0.0368 (0.0062)	0 (0)	210 (36)	12,479 (2,092)	12,689 (2,092)
Yellow perch *Perca flavescens*	0.0208 (0.0034)	1,860 (410)	2,627 (294)	2,697 (1,013)	7,184 (1,132)
White perch *Morone americana*	0.0099 (0.0020)	0 (0)	107 (24)	3,313 (690)	3,420 (690)
Bluegill *Lepomis macrochirus*	0.0076 (0.0008)	211 (40)	2,425 (253)	0 (0)	2,636 (256)
Rock bass *Ambloplites rupestris*	0.0038 (0.0004)	0 (0)	393 (63)	921 (111)	1,314 (127)
Black crappie *Pomoxis nigromaculatus*	0.0012 (0.0002)	262 (50)	145 (19)	0 (0)	407 (53)
Northern pike *Esox lucius*	0.0002 (0.0000)	0 (0)	84 (11)	0 (0)	84 (11)
Channel catfish *Ictalurus punctatus*	0.0002 (0.0000)	0 (0)	78 (11)	0 (0)	78 (11)
Freshwater drum *Aplodinotus grunniens*	0.0000 (0.0000)	0 (0)	0 (0)	14 (10)	14 (10)
Angler Hours		21,189 (3,279)	256,151 (7,898)	67,401 (7,030)	344,741 (11,070)
Angler Trips		4,877 (1,047)	49,540 (2,904)	13,377 (1,877)	67,794 (3,613)
Angler Days		4,877 (1,047)	49,221 (2,920)	13,377 (1,877)	67,475 (3,626)

Table 5.–Estimated effort (angler hours) and number of walleyes harvested by anglers launching at nine Michigan public boating access sites on the Detroit River, 2000.

Site	Hours (%)	Walleye harvested			Total (%)	Harvest per hour
		March	April	May		
Fisherman's	6,236 (2)	0	1,479	551	2,030 (2)	0.3255
St. Jean's	31,912 (9)	0	8,176	3,392	11,568 (12)	0.3625
Riverside Park	2,239 (1)	0	317	425	742 (1)	0.3314
Delray P. P.	6,460 (2)	0	1,653	0	1,653 (2)	0.2559
Belanger Park	23,889 (7)	695	9,389	792	10,876 (11)	0.4553
Ecorse	23,224 (7)	0	8,657	0	8,657 (9)	0.3728
Wyandotte	67,018 (20)	4,987	16,459	2,329	23,775 (24)	0.3548
Elizabeth Park	97,983 (28)	0	19,291	3,605	22,896 (24)	0.2337
Erie Metro P.	85,780 (25)	498	13,413	1,183	15,094 (15)	0.1760

Table 6.–State of residence of anglers interviewed during the 2000 Detroit River catch survey.

State	Interviews	
	Number	Percent
Illinois	10	0.9
Indiana	4	0.4
Iowa	3	0.3
Michigan	1,026	96.9
Maryland	1	0.1
North Carolina	2	0.2
Ohio	5	0.5
Pennsylvania	1	0.1
Oklahoma	1	0.1
Wisconsin	6	0.6
Total	1059	100.0

Table 7–County of residence of Michigan anglers interviewed during the 2000 Detroit River catch survey.

County	Interviews	County	Interviews
Allegan	3	Lenawee	7
Arenac	1	Livingston	16
Bay	1	Macomb	133
Berrien	1	Midland	1
Branch	1	Monroe	47
Calhoun	4	Montcalm	1
Cass	2	Muskegon	10
Charlevoix	1	Oakland	155
Clinton	6	Oceana	1
Eaton	14	Ogemaw	1
Genesee	19	Ottawa	11
Gladwin	1	Oscoda	1
Grand Traverse	1	Presque Isle	2
Gratiot	4	Roscommon	1
Hillsdale	3	Saginaw	3
Ingham	15	Sanilac	1
Ionia	10	Shiawassee	1
Isabella	1	St. Clair	11
Jackson	27	St. Joseph	1
Kalamazoo	5	Van Buren	4
Kent	21	Washtenaw	39
Lapeer	5	Wayne	432
		Wexford	1

Table 8.–Estimated effort and harvest from previous Detroit River fishery surveys.

		Boat Ffishery			Shore fishery		
Year	Sampling period	Effort (angler hours)	Total harvest	Walleye harvest	Effort (angler hours)	Total harvest	Walleye harvest
1942	May 17–Nov. 1	135,029	62,855	28,033	–	–	–
1943	May 27–Sept. 27	62,730	19,321	15,263	–	–	–
1980	May 1–Nov. 30	459,892	499,068	90,109	545,026[a]	237,281[a]	12,683[a]
1981	May 1–Sept. 30	391,291	233,356	89,453	598,211	255,390	5,046
1983	April 1–Nov. 30	792,258	1,213,848	111,245	762,963	568,962	7,282
1984	April 1–Nov. 30	570,945	616,458	172,891	666,952	436,418	35,883
2000	Mar. 11–May 16	344,741	125,118	97,292	–	–	–

[a] The survey of the shore fishery began on June 1 in 1980.

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