

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER RESOURCES DIVISION  
MARCH 2017

STAFF REPORT

MICHIGAN BEACH MONITORING  
YEAR 2016 ANNUAL REPORT

## INTRODUCTION

The Michigan Department of Environmental Quality (MDEQ) Surface Water Quality Monitoring Program is summarized in the January 1997 report entitled, "A Strategic Environmental Quality Monitoring Program for Michigan's Surface Waters" (Strategy) (MDEQ, 1997). The objectives of the beach monitoring component of the Strategy are listed below:

1. Assist local health departments to implement and strengthen beach monitoring programs.
2. Create and maintain a statewide database.
3. Determine whether waters of the state are safe for total body contact recreation.
4. Compile data to determine overall water quality.
5. Evaluate the effectiveness of MDEQ programs in attaining Water Quality Standards (WQS) for pathogen indicators.

### 1. ASSIST LOCAL HEALTH DEPARTMENTS TO IMPLEMENT AND STRENGTHEN BEACH MONITORING PROGRAMS

#### Beach Monitoring

The monitoring of beaches in Michigan is voluntary and is conducted by the local health departments. Health departments are required to comply with Michigan's WQS according to R 333.12544 of the Public Health Code, 1978 PA 368 (Act 368), as amended. According to R 333.12541 of Act 368, a local health officer or an authorized representative of a local health department that conducts tests at bathing beaches is required to notify the MDEQ and other entities of the test results within 36 hours of conducting a test or evaluation. This rule also states that the local health department may petition the circuit court for an injunction ordering the owners of a beach to close the beach. Owners of public bathing beaches must post a sign that states whether or not the bathing beach has been tested, and if so, where the test results may be accessed.

The MDEQ awards grants to local health departments to monitor and report levels of *E. coli* in the swimming areas of public beaches. In selecting recipients for grant awards, the MDEQ considers all of the following:

- Location and frequency of beach use.
- History of beach monitoring and bacterial contamination.
- Ability to communicate results to the public in an efficient manner.
- Ability to respond and take appropriate action in the event of beach contamination.
- Proximity of beach to a known bacterial contamination source.
- Innovativeness and feasibility of proposed project.
- Ability to reduce time delay between sampling and results.

## Funding for Beach Monitoring

Prior to 2000, health departments relied on local funding to conduct beach monitoring programs. Local funding was often not sufficient to execute a comprehensive statewide monitoring program. Beginning in 2000, funding became available from the Clean Michigan Initiative-Clean Water Fund (CMI-CWF). In 2003, the United States Environmental Protection Agency (USEPA) began awarding funds from the Beaches Environmental Assessment and Coastal Health Act (BEACH Act) for monitoring Great Lakes beaches. In 2015, the MDEQ provided \$500,000 for the purchase of rapid testing equipment and \$58,000 for quantitative polymerase chain reaction (QPCR) training. In 2016, the MDEQ provided an additional \$24,183 from the CMI-CWF for ongoing QPCR training.

### *CMI-CWF Grants*

The MDEQ distributed CMI-CWF funds to aid in the development and implementation of inland lake beach monitoring programs throughout the state. In 2000 and 2001, CMI-CWF funds were distributed for inland lakes and Great Lakes beach monitoring programs. In 2002, no CMI-CWF funds were distributed, but future funding was designated for inland beaches due to the availability of BEACH Act funding for Great Lakes beaches.

The CMI-CWF grant funds are awarded by the MDEQ to local health departments and nonprofit entities, which include county, city, township, and village agencies, watershed and environmental action councils, universities, regional planning agencies, and incorporated nonprofit organizations. The majority of grants are awarded to local health departments. If a group other than a local health department is awarded a grant, the MDEQ requires the group to work closely with their local health department.

The CMI-CWF offered reliable funding for the monitoring of surface water over a period of approximately 15 years. Since 2000, the MDEQ has awarded \$1,862,205. This amount includes 13 awards totaling \$200,000 (Appendix A) for monitoring beaches in 2015 and 2016 with a supplement of 12 more awards totaling \$150,000 for testing selected beaches in 2016 with QPCR methods.

### *BEACH Act Grants*

The MDEQ distributes BEACH Act funds to aid in the development and implementation of Great Lakes beach monitoring programs. State, local, and tribal governments having coastal waters are eligible to apply for the BEACH Act grants. The USEPA (2014) revised the performance criteria that must be met by grant recipients. Since the BEACH Act was initiated in 2003, the MDEQ has allocated \$3,291,494 including 24 awards in 2016 totaling \$157,107 for beach monitoring using the culture-based and/or QPCR method (Appendix B).

## New Equipment and Methods

Michigan will be the first state to monitor beaches statewide using a new, rapid testing method for water quality to quickly address potential public health concerns and keep people safe. The new QPCR method quickly identifies and measures *E. coli* DNA in a beach water sample. The method provides results on the same day that a sample is collected. To implement the QPCR method, local health departments received \$500,000 worth of equipment and grants from the MDEQ. Ten labs statewide will use this equipment to begin testing with the QPCR method and comparing results to traditional culture-based methods. Dr. Joan Rose, Michigan State University, received funding from the MDEQ to provide specialized training for the QPCR method and beach water testing.

## 2. CREATE AND MAINTAIN A STATEWIDE DATABASE

The MDEQ developed a centralized statewide database, BeachGuard, which includes beach locations and maps, beach monitoring *E. coli* test results, notification data, and routine sanitary survey data. These data are available electronically to the public via the MDEQ's Web site (<https://www.egle.state.mi.us/beach/>).

The Web site provides the following information about individual beaches:

- location information (county, water body, and coordinates for latitude and longitude)
- frequency of testing
- monitoring history
- beach closures
- monitoring efforts
- search tools
- options for data export
- information for beach monitoring procedures and methods
- additional links to beach monitoring resources
- contact information for federal, state, and local beach monitoring staff

BeachGuard is also connected to a beach application for mobile phones that was created by the Great Lakes Commission. The beach application is called *MyBeachCast* and retrieves beach locations and their status from BeachGuard. The beach application is available from (*link broken, removed*) and a mobile-enhanced Web site is available on the Great Lakes Information Network (*link broken, removed*) that offers information for Web viewers, iPhones, and other mobile devices.

## 3. DETERMINE WHETHER WATERS OF THE STATE ARE SAFE FOR TOTAL BODY CONTACT RECREATION

### Pathogens

Pathogens are microorganisms (bacteria, protozoans, or viruses) that cause disease. Most waterborne pathogens are readily found in the feces of humans and other warm-blooded animals. Gastroenteritis is the most common illness associated with swimming in contaminated water, although other illnesses can occur. The severity of the disease or illness depends on the amount of exposure and the type of pathogen (Appendix C) (USEPA, 2001). The USEPA (1986 and 2012) has determined that *E. coli* and *Enterococci* are appropriate indicators for the presence of waterborne pathogens in fresh water.

### Routine Sanitary Surveys

As part of the BEACH Act, local health departments conducted 1,165 routine sanitary surveys at 130 Great Lakes beaches and access points to identify sources of pollution that adversely impact beach water quality. Corrective actions have been taken as sources of pollution have been identified. In addition, local health departments conducted 1,161 routine sanitary surveys at 105 inland locations to identify sources of pollution that adversely impact beach water quality at inland lakes. Data for routine sanitary surveys for all of these beaches and locations are available on BeachGuard.

## Sources of Bacterial Contamination

Combined Sewer Overflows (CSOs) are discharges of raw or inadequately treated sewage from sewer systems that are designed to carry both domestic sewage and storm water to wastewater treatment plants (WWTPs). When a storm event occurs and the volume of wastewater is larger than the WWTP can process, the excess untreated sewage and storm water are discharged into local waterways.

Sanitary Sewer Overflows are discharges of raw or inadequately treated sewage (MDEQ, 2016) from municipal sanitary sewer systems, which are designed to carry domestic sanitary sewage but not storm water. Systems that contain cracks, obstructions, storm water connections, or that are undersized with sewers and pumps too small to carry all the sewage may leak or overflow raw sewage from manholes, bypass pump stations, and WWTPs into the surrounding waters, particularly during extreme hydrologic events.

Failing septic systems can cause leaching and/or runoff into the waterways, causing bacterial contamination. Urban storm water runoff from roads, roofs, construction sites, parking lots, etc., may contain fecal matter from pets and wildlife. Excessive waterfowl near the beaches and animal waste runoff from farms and fields can contribute to elevated bacterial levels. Illicit connections of pipes containing sewage to storm sewers or surface waters are also a potential source of bacterial contamination.

### *E. coli* WQS

The MDEQ requires beaches to be monitored according to the Part 4 rules, WQS, promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, as follows:

#### R 323.1062 Microorganisms

Rule 62(1): All waters of the state protected for total body contact recreation shall not contain more than 130 *E. coli* per 100 milliliters (ml), as a 30-day geometric mean. Compliance shall be based on the geometric mean of all individual samples taken during 5 or more sampling events representatively spread over a 30-day period. Each sampling event shall consist of 3 or more samples taken at representative locations within a defined sampling area. At no time shall the waters of the state protected for total body contact recreation contain more than a maximum of 300 *E. coli* per 100 ml. Compliance shall be based on the geometric mean of 3 or more samples taken during the same sampling event at representative locations within a defined sampling area.

All surface waters of the state are protected for total body contact according to the Part 4 rules, as follows:

#### R 323.1100 Designated Uses

Rule 100(2): All surface waters of the state are designated and protected for total body contact recreation from May 1 to October 31 in accordance with the provisions of R 323.1062. Total body contact recreation immediately downstream of wastewater discharges, areas of significant urban runoff, CSOs, and areas influenced by certain agricultural practices is contrary to prudent public health and safety practices, even though WQS may be met.

## Beach Notification

The public will be warned of unsafe water conditions by beach notifications such as advisories or closures (collectively referred to as an action). These actions are based on beach data, which can show risks due to riptides, spills, harmful algal blooms, an *E. coli* result exceeding the WQS, or other potential threats to public health. Advisories or closures are most commonly issued because of elevated counts of *E. coli* in water samples collected from the shoreline of a water body. Health departments use the daily and 30-day geometric mean to determine if a beach closure or advisory should be issued. The health department notifies the owner of the beach when a beach should be closed. If necessary, the health department can petition the court for an injunction to force the owner to close the beach. The beach closure or advisory remains in effect until additional tests meet the WQS.

The MDEQ developed a centralized statewide database, BeachGuard, which includes bathing beach monitoring *E. coli* test results and notification data. These data are available electronically to the public via BeachGuard (<https://www.ege.state.mi.us/beach/>).

## Reporting Beach Monitoring and Notification Data

According to R 333.12541(2), all local health departments are required to report their beach monitoring test results to the MDEQ within 36 hours of conducting the test or evaluation. Health departments receiving beach monitoring grants are required to enter their data on the MDEQ's Web site, while non-grant receiving health departments are encouraged to report their data on the Web site.

As a requirement of the BEACH Act, the MDEQ submits beach monitoring data to the USEPA. The USEPA has created several Web pages for beach information that can be found at <http://water.epa.gov/type/oceb/beaches/>, along with an online directory of information regarding the water quality at our nation's beaches entitled, "Beach Advisory Closing On-line Notification," that can be found at <http://watersgeo.epa.gov/beacon2/>.

## 4. COMPILE DATA TO DETERMINE OVERALL WATER QUALITY

### List of Beaches

Michigan beaches identified by local health departments and the MDEQ are listed in Appendices D.1 (Inland lakes-monitored), D.2 (Inland lakes-not monitored), E.1 (Great Lakes-monitored), and E.2 (Great Lakes-not monitored). They are also listed on the MDEQ's beach Web site. The beaches are arranged alphabetically by county, then water body, then location (site name). There are 614 identified public beaches on inland lakes and rivers and 614 identified public beaches on the Great Lakes.

### Synopsis of Data

Monitoring and notification data reported for beaches included results of *E. coli* tests, number of advisories or closures (actions) posted, and the number of days for each posting. In 2016, monitoring was conducted at 417 public beaches in 53 counties. Local beach managers collected 4,761 daily water samples and 188 (4 percent) exceeded Michigan's WQS (Appendices F.1 and F.2). A numerical summary of all monitored public beaches and samples exceeding WQS is found below in Table 1. The number and percent of samples exceeding WQS in 2016 are similar to the previous years.

Table 1. Number and percent of monitored public beaches and water samples in Michigan exceeding the daily geometric mean of 300 *E. coli* per 100 ml.

| Year                                | 2012 | 2013 | 2014 | 2015 | 2016 | 10-Year Average |
|-------------------------------------|------|------|------|------|------|-----------------|
| Number of Beaches with Exceedances  | 114  | 98   | 76   | 98   | 80   | 94              |
| Percent of Beaches with Exceedances | 27   | 24   | 23   | 25   | 19   | 21              |
| Number of Samples Exceeding WQS     | 224  | 162  | 129  | 212  | 188  | 191             |
| Percent of Samples Exceeding WQS    | 4    | 3    | 4    | 5    | 4    | 4               |

Notification data in 2016 for beach actions are shown in Table 2. A total of 340 of the 417 public beaches (82 percent) that were monitored were open during the entire swimming season. The number of beaches reporting an action was 77. The number of beaches with exceedances differed from the number of beaches with actions due to any of the following reasons: (1) water samples were tested before or after the swimming season; (2) delays in receiving test results; (3) a second test (follow-up sample) was used to confirm an exceedance; (4) preemptive closures or advisories were issued; or (5) contamination advisories were issued for potential chemical or oil discharge.

Table 2. Summary of monitored beaches with and without actions.

| Year  | 2012 | 2013 | 2014 | 2015 | 2016 | 10-Year Average |
|---|------|------|------|------|------|-----------------|
| Total Actions For All Beaches               | 166  | 112  | 112  | 147  | 122  | 128             |
| Total of Monitored Beaches with an Action   | 112  | 84   | 74   | 96   | 77   | 84              |
| Percent of Monitored Beaches with an Action | 26   | 20   | 22   | 25   | 18   | 20              |
| Total of Monitored Beaches with no Action   | 311  | 329  | 260  | 291  | 340  | 333             |
| Percent of Monitored Beaches with no Action | 74   | 80   | 78   | 75   | 82   | 72              |

### Synopsis of Data from Great Lakes Beaches

In 2016, 2,527 daily samples were collected at 209 Great Lakes public beaches in 35 counties in Michigan. A summary of WQS exceedances and closures/advisories for Great Lakes beaches is provided in Table 3. Exceedances and actions for Great Lakes beaches were of short duration. The number of monitored Great Lakes beaches is similar as previous years while the number of beaches with an action has decreased (Table 4).

Table 3. Number of exceedances and actions for Great Lakes beaches monitored in 2016.

| a. Number of exceedances Reported per Beach | b. Number of Beaches with Exceedances | Total Number of Exceedances (a*b) | c. Number of Closures of Advisories per Beach | d. Number of Beaches with Closures or Advisories | Total Number of Closures or Advisories (c*d) |
|---|---------------------------------------|-----------------------------------|---|--|--|
| 1   | 17                                    | 17                                | 1   | 26   | 26   |
| 2   | 10                                    | 20                                | 2   | 10   | 20   |
| 3   | 7                                     | 21                                | 3   | 3  | 9  |
| 4   | 4                                     | 16                                | 4   | 1  | 4  |
| 5   | 2                                     | 10                                | 5   | 3  | 15   |
| 6   | 2                                     | 12                                |   |  |  |
| 8   | 1                                     | 8                                 |   |  |  |
| 10  | 1                                     | 10                                |   |  |  |
| <b>Total</b>                                | 44                                    | <b>114</b>                        | <b>Total</b>                                  | 43   | <b>74</b>                                    |

Table 4. Number of monitored Great Lakes beaches with and without an action.

| Year                                | 2012 | 2013 | 2014 | 2015 | 2016 | 10-Year Average |
|-------------------------------------|------|------|------|------|------|-----------------|
| GL Monitored Beaches with an Action | 89   | 54   | 50   | 65   | 43   | 54              |
| GL Monitored Beaches with no Action | 171  | 185  | 110  | 138  | 166  | 165             |
| Total GL Monitored Beaches          | 260  | 239  | 160  | 203  | 209  | 218             |

A summary of the 2016 beach action data for each of the Great Lakes, Lake St. Clair, and connecting channels is provided in Table 5. A summary of sources of contamination reported for actions in the Great Lakes, Lake St. Clair, and connecting channels is provided in Table 6.

Table 5. Data summary for the Great Lakes, Lake St. Clair, and connecting channels.

| Summary                           | Lake Erie | Lake Huron | Lake Michigan | Lake Superior | Lake St. Clair | Great Lakes Connecting Channels | Total |
|-----------------------------------|-----------|------------|---------------|---------------|----------------|---------------------------------|-------|
| Number of Public Beaches          | 2         | 170        | 305           | 119           | 4              | 14                              | 614   |
| Number of Monitored Beaches       | 2         | 52         | 127           | 19            | 4              | 5                               | 209   |
| Number of Beaches with exceedance | 2         | 17         | 19            | 2             | 2              | 2                               | 44    |
| Number of exceedances             | 6         | 47         | 28            | 8             | 14             | 11                              | 114   |
| Number of Beaches with Actions    | 2         | 18         | 18            | 1             | 2              | 2                               | 43    |
| Number of Actions                 | 4         | 28         | 25            | 1             | 10             | 6                               | 74    |
| Total Number of Days with Actions | 69        | 89         | 34            | 2             | 70             | 9                               | 273   |

Table 6. Contamination sources reported for advisories and closures, days affected, and the number of beaches for the Great Lakes, Lake St. Clair, and connecting channels for the specific cause of the beach action.

| Contamination Source    | Number of Actions with reporting Source | Number of Days Affected by Source | Number of Beaches Reporting Source |
|-------------------------|---|-----------------------------------|------------------------------------|
| Storm Water             | 10                                      | 16                                | 10                                 |
| Runoff                  | 1                                       | 2                                 | 1                                  |
| Sanitary Sewer Overflow | 4                                       | 12                                | 4                                  |
| Wildlife                | 2                                       | 2                                 | 1                                  |
| Other                   | 1                                       | 1                                 | 1                                  |
| Unknown                 | 56                                      | 240                               | 27                                 |
| <b>Total</b>            | <b>74</b>                               | <b>273</b>                        | <b>44*</b>                         |

\*Multiple sources reported for some beaches.

### Synopsis of Data from Inland Beaches

In 2016, 2,234 daily samples were collected at 208 inland lake public beaches in 37 counties in Michigan. Of the 34 beaches that reported actions, 6 beaches contributed 76 percent of the total days impacted by an action. The remaining 28 beaches issued an action lasting 1 to 20 days and contributed 24 percent of the total days impacted by an action.

A summary of WQS exceedances and closures/advisories for inland beaches is provided in Table 7. As seen with Great Lakes Beaches, exceedances and actions for inland beaches were of short duration. The number of monitored inland beaches varies by year and Table 8 shows the number of beaches with an action was about the same in 2016 as compared to previous years. A summary of sources of contamination reported for beach actions for inland lakes is provided in Table 9.

Table 7. Number of exceedances and actions for inland beaches monitored in 2016.

| a. Number of exceedances Reported per beach | b. Number of Beaches with Exceedances | <b>Total Number of exceedances(a*b)</b> | c. number of actions per beach | d. number of beaches with actions | <b>Total Number of Actions (c*d)</b> |
|---|---------------------------------------|---|--------------------------------|-----------------------------------|--------------------------------------|
| 1   | 22                                    | <b>22</b>                               | 1                              | 23                                | <b>23</b>                            |
| 2   | 8                                     | <b>16</b>                               | 2                              | 8                                 | <b>16</b>                            |
| 3   | 2                                     | <b>6</b>                                |                                |                                   |                                      |
| 4   | 1                                     | <b>4</b>                                | 3                              | 3                                 | <b>9</b>                             |
| 7   | 1                                     | <b>7</b>                                |                                |                                   |                                      |
| 9   | 1                                     | <b>9</b>                                |                                |                                   |                                      |
| 10  | 1                                     | <b>10</b>                               |                                |                                   |                                      |
| <b>Total</b>                                | <b>36</b>                             | <b>74</b>                               | <b>Total</b>                   | <b>34</b>                         | <b>48</b>                            |

Table 8. Number of monitored inland lake beaches with and without an action.

| Year   | 2012 | 2013 | 2014 | 2015 | 2016 | 10-Year Average |
|--|------|------|------|------|------|-----------------|
| Inland Lake Monitored Beaches with an Action | 22   | 28   | 24   | 31   | 34   | 33              |
| Inland Lake Monitored Beaches with no Action | 137  | 146  | 150  | 153  | 174  | 168             |
| Total Inland Lake Monitored Beaches          | 163  | 174  | 174  | 184  | 208  | 201             |

Table 9. Contamination sources reported for actions, days affected, and the number of beaches reporting the specific cause of an action for inland lakes.

| Contamination Source | Number of Actions with reporting Source | Number of Days Affected by Source | Number of Beaches Reporting Source |
|----------------------|---|-----------------------------------|------------------------------------|
| Storm Water          | 12                                      | 21                                | 10                                 |
| Runoff               | 1                                       | 2                                 | 1                                  |
| Wildlife             | 5                                       | 46                                | 4                                  |
| Unknown              | 30                                      | 323                               | 21                                 |
| <b>Total</b>         | <b>48</b>                               | <b>392</b>                        | <b>36*</b>                         |

\*Multiple sources reported for some beaches.

## 5. EVALUATE THE EFFECTIVENESS OF MDEQ PROGRAMS IN ATTAINING WQS FOR PATHOGEN INDICATORS

### Beach Water Quality Data that do not meet WQS

Water quality protection continues to be a great concern in Michigan and depends on the collective efforts of multiple pollution prevention programs. As part of the beach monitoring program, health departments and the MDEQ routinely review beach water quality data. This

information is used in federal, state, and local pollution prevention programs to determine which water bodies are not meeting WQS and to help identify sources of pollution that affect beach water quality.

Section 303(d) of the federal Clean Water Act and the USEPA's Water Quality Planning and Management Regulations (Title 40 of the Code of Federal Regulations, Part 130) require states to develop Total Maximum Daily Loads (TMDLs) for water bodies that are not meeting WQS. The TMDL process establishes the allowable loadings of pollutants to a water body based on the relationship between pollution sources and water quality conditions. TMDLs provide a basis for determining the pollutant reductions necessary from both point and nonpoint sources to restore and maintain the quality of the water resources.

Waters associated with public beaches are considered to not be attaining WQS when *E. coli* monitoring data collected by county health departments during the total body contact recreation season of May 1 to October 31 (as described by R 323.1100(2)) meet one or more of the following decision elements:

- Ten percent of the monthly geometric mean samples exceed the monthly geometric mean WQS of 130 *E. coli* per 100 ml based on weekly samples collected over a minimum of 5 weeks.
- Ten percent of the daily geometric mean samples exceed the daily maximum WQS of 300 *E. coli* per 100 ml based on weekly samples collected over a minimum of 5 weeks.
- Two or more sample results collected at any time during the total body contact recreation season of May 1 to October 31 exceed the partial body WQS of 1,000 *E. coli* per 100 ml.

The water bodies that exceed WQS and require a TMDL are placed on the Section 303(d) list and TMDL development schedule. A water body is not placed on the TMDL development schedule if a remedial action plan is already in place. The beaches that exceed WQS per the decision elements are listed on the Section 303(d) list, which is available in the most recent "Water Quality and Pollution Control in Michigan Sections 303(d), 305(b), and 314 Integrated Report."

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- MDEQ. 2016. Sanitary Sewer Discharge Information.

Appendix A. CMI-CWF Grants for Inland Lake Beaches 2015-2016.

| <b>2015-2016 CMI-CWF Grantees</b>                          | <b>Granted Amount</b> | <b>Total Monitored Beaches</b> |
|--|-----------------------|--------------------------------|
| Barry-Eaton District Health Department                     | \$9,739.37            | 4                              |
| Central Michigan District Health Department                | \$23,200.00           | 14                             |
| Chippewa County Health Department                          | \$6,700.00            | 3                              |
| District Health Department #2                              | \$32,200.00           | 20                             |
| District Health Department #4                              | \$6,700.00            | 3                              |
| Health Department of Northwest Michigan                    | \$20,540.00           | 16                             |
| Luce-Mackinac-Alger-Schoolcraft District Health Department | \$5,200.00            | 2                              |
| Macomb County Health Department                            | \$5,200.00            | 2                              |
| Oakland County Health Department                           | \$45,079.48           | 45                             |
| Watershed Center Grand Traverse Bay                        | \$15,700.00           | 9                              |
| Wayne County Health Department                             | \$9,800.00            | 5                              |
| Western UP District Health Department                      | \$8,753.15            | 6                              |
| Wexford County Drain Commission                            | \$11,188.00           | 6                              |
| Total  | \$200,000.00          | 135                            |

Appendix B. 2016 BEACH Act Grants for Great Lakes Beaches.

| Local Health Department                                    | Allocated Amount |
|--|------------------|
| Allegan County Health Department                           | \$5,000          |
| Bay County Health Department                               | \$5,000          |
| Berrien County Health Department                           | \$8,135          |
| Central Michigan District Health Department                | \$7,688          |
| Chippewa County Health Department                          | \$6,344          |
| Delta-Menominee District Health Department                 | \$5,000          |
| Detroit Belle Isle (DNR)                                   | \$2,500          |
| District Health Department #2                              | \$9,031          |
| District Health Department #4                              | \$7,688          |
| District Health Department #10                             | \$9,703          |
| Huron County Health Department                             | \$7,912          |
| Luce-Mackinac-Alger-Schoolcraft District Health Department | \$5,000          |
| Macomb   | \$5,000          |
| Marquette (City of Marquette)                              | \$5,000          |
| Monroe County Health Department                            | \$5,000          |
| Muskegon County Health Department                          | \$7,912          |
| Northwest Michigan Community Health Agency                 | \$11,943         |
| Ottawa County Health Department                            | \$7,016          |
| St. Clair County Health Department                         | \$8,359          |
| Sanilac County Health Department                           | \$5,000          |
| Van Buren/Cass District Health Department                  | \$5,000          |
| Watershed Center (Grand Traverse & Benzie-Leelanau)        | \$7,912          |
| Wayne County Health Department                             | \$2,500          |
| Western Upper Peninsula District Health Department         | \$7,464          |
| <b>Total</b>   | <b>\$157,107</b> |

Appendix C. Waterborne Pathogens

| Pathogen   |  | Disease                                     | Effects   |
|------------|--|---|---|
| Bacteria   | Escherichia coli (enteropathogenic)                                | Gastroenteritis                             | Vomiting, diarrhea, death in susceptible populations  |
|            | Helicobacter pylori  | Gastritis                                   | Diarrhea. Peptic ulcers are a long-term sequela   |
|            | Legionella pneumophila   | Legionellosis                               | Acute respiratory illness   |
|            | Leptospira   | Leptospirosis                               | Jaundice, fever   |
|            | Pseudomonas  | Infections in immunocompromised individuals | Urinary tract infections, respiratory system infections, dermatitis, soft tissue infections, bacteremia, and a variety of systemic infections |
|            | Salmonella typhi   | Typhoid fever                               | High fever, diarrhea, ulceration of the small intestine   |
|            | Salmonella   | Salmonellosis                               | Diarrhea, dehydration   |
|            | Shigella   |   | Bacterial dysentery   |
|            | Vibrio cholera   | Cholera                                     | Extremely heavy diarrhea, dehydration   |
|            | Yersinia enterocolitica  | Yersinosis                                  | Diarrhea  |
| Protozoans | Balantidium coli   | Balantidiasis                               | Diarrhea, dysentery   |
|            | Cryptosporidium  | Cryptosporidiosis                           | Diarrhea  |
|            | Entamoeba histolytica  | Ameobiasis (amoebic dysentery)              | Prolonged diarrhea with bleeding, abscesses of the liver and small intestine  |
|            | Giardia lamblia  | Giardiasis                                  | Mild to severe diarrhea, nausea, indigestion  |
|            | Naegleria fowleri  | Amoebic meningoencephalitis                 | Fatal disease; inflammation of the brain  |
| Viruses    | Adenovirus (31 types)  | Respiratory disease                         | Eye infections, diarrhea  |
|            | Astroviruses   | Gastroenteritis                             | Vomiting, diarrhea  |
|            | Enteroviruses (67 types, e.g., polio, echo, and Coxsackie viruses) | Gastroenteritis                             | Diarrhea. Heart anomalies and meningitis are long-term sequela and are very rare  |
|            | Hepatitis A and E  | Infectious hepatitis                        | Jaundice, fever   |
|            | Caliciviruses (Norwalk- and Sapporo-like viruses)                  | Gastroenteritis                             | Vomiting, diarrhea  |
|            | Reovirus   | Gastroenteritis                             | Vomiting, diarrhea  |
|            | Rotavirus  | Gastroenteritis                             | Vomiting, diarrhea  |

Source: USEPA, 2001

Appendix D.1. Inland Beaches Monitored 2016.

|           | <b>County</b>         | <b>Water Body</b>       |   | <b>Location</b>                                 |
|-----------|-----------------------|-------------------------|---|---|
| <b>1</b>  | <b>Alcona</b>         | Alcona Pond             | 1 | Alcona Park East Campground                     |
|           | Alcona                | Brownlee Lake           | 2 | Village of Lincoln Park                         |
|           | Alcona                | Cedar Lake              | 3 | Greenbush Township beach                        |
|           | Alcona                | Hubbard Lake            | 4 | Caledonia Township Park                         |
| <b>2</b>  | <b>Alpena</b>         | Long Lake               | 1 | Long Lake Park                                  |
| <b>3</b>  | <b>Antrim</b>         | Central Lake            | 1 | Thurston Park                                   |
|           | Antrim                | Ellsworth Lake          | 2 | Wooden Shoe Park                                |
|           | Antrim                | Lake Bellaire           | 3 | Richardi Park                                   |
|           | Antrim                | Torch Lake              | 4 | Day Park  |
|           | Antrim                | Torch Lake              | 5 | Eastport  |
| <b>4</b>  | <b>Arenac</b>         | Oasis Lake              | 1 | Oasis Lake County Park                          |
| <b>5</b>  | <b>Barry</b>          | Gun Lake                | 1 | Main Beach - Day Use Area                       |
|           | Barry                 | Gun Lake                | 2 | Yankee Springs Recreation Area Campground Beach |
|           | Barry                 | Thornapple Lake         | 3 | Charlton Park                                   |
| <b>6</b>  | <b>Bay</b>            | Kawkawlin River         | 1 | Boat Launch on Kawkawlin River                  |
|           | Bay                   | Saginaw River           | 2 | Vet's Park North Bay City                       |
| <b>7</b>  | <b>Benzie</b>         | Crystal Lake            | 1 | Bellows Beach                                   |
|           | Benzie                | Crystal Lake            | 2 | Beulah Beach                                    |
|           | Benzie                | Otter Creek             | 3 | Sleeping Bear Dunes -Otter Creek                |
|           | Benzie                | Lake Ann                | 4 | Almira Township Park Beach                      |
| <b>8</b>  | <b>Charlevoix</b>     | Thumb Lake              | 1 | Thumb Lake Beach                                |
|           | Charlevoix            | Walloon Lake            | 2 | Melrose Township Park                           |
| <b>9</b>  | <b>Chippewa</b>       | Dukes Lake              | 1 | Dukes Lake                                      |
|           | Chippewa              | Kinross Lake            | 2 | Kinross Lake                                    |
|           | Chippewa              | Monocle Lake            | 3 | Monocle Lake                                    |
| <b>10</b> | <b>Clare</b>          | Budd Lake               | 1 | Wilson State Park                               |
|           | Clare                 | Crooked Lake            | 2 | Crooked Lake/Camp Neyati Beach                  |
| <b>11</b> | <b>Eaton</b>          | Fox Memorial Park Beach | 1 | Fox Memorial Park                               |
| <b>12</b> | <b>Emmet</b>          | Crooked Lake            | 1 | Little Traverse Township Beach                  |
|           | Emmet                 | Crooked Lake            | 2 | Oden Beach                                      |
|           | Emmet                 | Pickerel Lake           | 3 | Camp Petosega                                   |
|           | Emmet                 | Pickerel Lake           | 4 | Channel Beach                                   |
|           | Emmet                 | Larks Lake              | 5 | Poiner Picnic Park                              |
|           | Emmet                 | Walloon Lake            | 6 | Resort Pike Road Beach                          |
| <b>13</b> | <b>Gladwin</b>        | Cedar River             | 1 | Gladwin City Park                               |
|           | Gladwin               | Ross Lake               | 2 | Beaverton City Park                             |
| <b>14</b> | <b>Gogebic</b>        | Lake Gogebic            | 1 | Gogebic County Park                             |
|           | Gogebic               | Lake Gogebic            | 2 | Lake Gogebic State Park Beach                   |
|           | Gogebic               | Sunday Lake             | 3 | Sunday Lake Beach                               |
| <b>15</b> | <b>Grand Traverse</b> | Duke Lake               | 1 | Interlochen State Park                          |
|           | Grand Traverse        | Long Lake               | 2 | Gilbert Beach                                   |
|           | Grand Traverse        | Long Lake               | 3 | Taylor Park                                     |
|           | Grand Traverse        | North Twin Lake         | 4 | Twin Lakes Camp Beach                           |
| <b>16</b> | <b>Houghton</b>       | Lake Roland             | 1 | Twin Lakes State Park                           |

Appendix D.1. Inland Beaches Monitored 2016.

|           | <b>County</b>            | <b>Water Body</b>            |    | <b>Location</b>                         |
|-----------|--------------------------|------------------------------|----|---|
| <b>17</b> | <b><u>Ingham</u></b>     | Burchfield Pond              | 1  | Burchfield Park                         |
| 45        | Ingham                   | Hawk Island                  | 2  | Hawk Island County Park                 |
| 46        | Ingham                   | Lake Lansing                 | 3  | Lake Lansing Park South                 |
| 47        | Ingham                   | Valhalla Pond                | 4  | Valhalla Park                           |
| 48        |                          |                              |    |   |
| <b>18</b> | <b><u>Iosco</u></b>      | Footo Pond                   | 1  | Old Orchard Park                        |
| 49        | Iosco                    | Long Lake                    | 2  | Long Lake Public Access                 |
| 50        | Iosco                    | Sand Lake                    | 3  | Sand Lake- Sand Lake Road Access        |
| 51        | Iosco                    | Van Ettan Lake               | 4  | Oscoda Township Park- Van Ettan Lake    |
| 52        |                          |                              |    |   |
| <b>19</b> | <b><u>Isabella</u></b>   | Borrow Pit                   | 1  | Herrick County Park                     |
| 53        | Isabella                 | Chippewa River               | 2  | Deerfield County Park                   |
| 54        | Isabella                 | Coldwater Lake               | 3  | Coldwater Park                          |
| 55        | Isabella                 | Halls Lake                   | 4  | Halls Lake                              |
| 56        | Isabella                 | Littlefield Lake             | 5  | Littlefield Lake                        |
| 57        |                          |                              |    |   |
| <b>20</b> | <b><u>Kalamazoo</u></b>  | Blue Lake                    | 1  | Cold Brook County Park                  |
| 58        | Kalamazoo                | Campbell Lake                | 2  | Robert Morris Park                      |
| 59        | Kalamazoo                | Eagle Lake                   | 3  | Fort Custer Recreation Area Beach       |
| 60        | Kalamazoo                | Gull Lake                    | 4  | Ross Township Park                      |
| 61        | Kalamazoo                | Hogsett Lake                 | 5  | Prairie View County Park                |
| 62        | Kalamazoo                | Long Lake                    | 6  | Ramona Park                             |
| 63        | Kalamazoo                | Sunset Lake                  | 7  | Sunset Lake Park                        |
| 64        | Kalamazoo                | Swimmers Lake                | 8  | Markin Glen County Park                 |
| 65        | Kalamazoo                | Woods Lake                   | 9  | Woods Lake Beach                        |
| 66        |                          |                              |    |   |
| <b>21</b> | <b><u>Leelanau</u></b>   | Lake Leelanau                | 1  | Nedow's (Barthalomew) Beach             |
| 67        | Leelanau                 | Inland Lake-                 | 2  | Sleeping Bear Dunes-Little Glen Lake    |
| 68        | Leelanau                 | Inland lake-                 | 3  | Sleeping Bear Dunes-north Bar Lake      |
| 69        | Leelanau                 | South Bar Lake               | 4  | South Bar Lake- South End               |
| 70        | Leelanau                 | Good Harbor Creek Outlet     | 5  | Good Harbor Creek                       |
| 71        |                          |                              |    |   |
| <b>22</b> | <b><u>Livingston</u></b> | Bishop Lake                  | 1  | Brighton State Recreation Area          |
| 72        | Livingston               | Chenango Lake                | 2  | Camp Talahi                             |
| 73        | Livingston               | Church Lake                  | 3  | Wildwood Ranch                          |
| 74        | Livingston               | Cook Lake                    | 4  | Taylor's Beach                          |
| 75        | Livingston               | Kent Lake                    | 5  | Island Lake Recreation Area - Kent Lake |
| 76        | Livingston               | Lake Chemung                 | 6  | Lake Chemung Outdoor Resort             |
| 77        | Livingston               |                              |    | Waldenwoods Resort                      |
| 78        | Livingston               | Pleasant Lake                | 8  | Howell Nature Center                    |
| 79        | Livingston               | Sandy Bottom Lake            | 9  | Water's Edge Camp                       |
| 80        | Livingston               | Spring Mill Pond             | 10 | Island Lake Recreation Area             |
| 81        | Livingston               | Thompson Lake                | 11 | Howell City Park                        |
| 82        | Livingston               | Cordley Lake                 | 12 | Varsity Day Camp* - PV                  |
| 83        | Livingston               | Haynor Lake                  | 13 | Hamburg Fitness Center & Camp*- PV      |
| 84        | Livingston               | Patterson Lake               | 14 | North Star Reach Camp*- PV              |
| 85        | Livingston               | Winans Lake                  | 15 | Lakelands Golf & Country Club* - PV     |
| 86        |                          |                              |    |   |
| <b>23</b> | <b><u>Macomb</u></b>     | Stony Creek Lake-Impoundment | 1  | Stony Creek Metropark-Baypoint Beach    |
| 87        | Macomb                   | Stony Creek Lake-Impoundment | 2  | Stony Creek Metropark-Eastwood Beach    |
| 88        |                          |                              |    |   |
| <b>24</b> | <b><u>Marquette</u></b>  | Dead River Reservoir         | 1  | Marquette Tourist Park Beach            |
| 89        |                          |                              |    |   |
| <b>25</b> | <b><u>Oakland</u></b>    | Adams Lake                   | 1  | Addison Oaks County Park                |
| 90        | Oakland                  | Big Seven Lake               | 2  | Seven Lakes Park                        |
| 91        | Oakland                  | Bush Lake                    | 3  | Holly Village Beach                     |
| 92        | Oakland                  | Carter Lake                  | 4  | Thelma Spencer Park                     |
| 93        | Oakland                  | Cass Lake                    | 5  | Dodge Park #4                           |
| 94        | Oakland                  | Cass Lake                    | 6  | Keego Harbor City Beach                 |
| 95        | Oakland                  | Cass Lake                    | 7  | Pontiac Yacht Club                      |
| 96        | Oakland                  | Commerce Lake                | 8  | Log Cabin Sub.                          |
| 97        | Oakland                  | Crooked Lake                 | 9  | Independence Oaks County Park           |
| 98        |                          |                              |    |   |

Appendix D.1. Inland Beaches Monitored 2016.

|     | <b>County</b> | <b>Water Body</b> |    | <b>Location</b>   |
|-----|---------------|-------------------|----|---|
| 99  | Oakland       | Deer Lake         | 10 | Independence Township Village Beach                     |
| 100 | Oakland       | Fish Lake         | 11 | Camp Ohiyesa - North                                    |
| 101 | Oakland       | Green Lake        | 12 | Bay Court Park  |
| 102 | Oakland       | Green Lake        | 13 | Camp Wathana  |
| 103 | Oakland       | Green Lake        | 14 | Green Acres/ Green Valley Park                          |
| 104 | Oakland       | Green Lake        | 15 | Clear Water Resort                                      |
| 105 | Oakland       | Haas Lake         | 16 | Haas Lake Park #1                                       |
| 106 | Oakland       | Haas Lake         | 17 | Haas Lake Park #2                                       |
| 107 | Oakland       | Haas Lake         | 18 | Haas Lake Park #3                                       |
| 108 | Oakland       | Haas Lake         | 19 | Haas Lake Park #4                                       |
| 109 | Oakland       | Handsome Lake     | 20 | Crossroads For Youth                                    |
| 110 | Oakland       | Harvery Lake      | 21 | Harvery Lake Heights                                    |
| 111 | Oakland       | Heron Lake        | 22 | Holly Recreation Area - Heron Beach                     |
| 112 | Oakland       | Kent Lake         | 23 | Kensington - Martindale Beach                           |
| 113 | Oakland       | Kent Lake         | 24 | Kensington- Maple Beach                                 |
| 114 | Oakland       | Long Lake         | 25 | Christ the King Church Camp                             |
| 115 | Oakland       | Loon Lake         | 26 | Indianwood  |
| 116 | Oakland       | Loon Lake         | 27 | Birch Park  |
| 117 | Oakland       | Lower Trout       | 28 | Bald Mountain Recreation Area                           |
| 118 | Oakland       | Mill Pond         | 29 | Davisburg Village Beach (Hart Community Center)         |
| 119 | Oakland       | Orchard lake      | 30 | Country Club (5000 W. Shore Dr)                         |
| 120 | Oakland       | Orion Lake        | 31 | Greens Park Village Beach                               |
| 121 | Oakland       | Phillips Lake     | 32 | Camp Dearborn - Lake #1                                 |
| 122 | Oakland       | Phillips Lake     | 33 | Camp Dearborn - Lake #5                                 |
| 123 | Oakland       | Phipps Lake       | 34 | Camp Maas - Rodecker                                    |
| 124 | Oakland       | Phipps Lake       | 35 | Camp Maas- Sobell Beach                                 |
| 125 | Oakland       | Pontiac Lake      | 36 | Pontiac Recreation Area                                 |
| 126 | Oakland       | Prince Lake       | 37 | Upland Hills Farm                                       |
| 127 | Oakland       | Proud Lake        | 38 | Proud Lake Recreation Area Campground                   |
| 128 | Oakland       | Round Lake        | 39 | Scripter Village Park Township Beach                    |
| 129 | Oakland       | Sand Lake         | 40 | Seven Lakes State Park - Campground                     |
| 130 | Oakland       | Scotch Lake       | 41 | Scotch Lake Residents                                   |
| 131 | Oakland       | Stewart Lake      | 42 | Groveland Oaks County Park - Paradise Beach             |
| 132 | Oakland       | Stony Lake        | 43 | Stony Lake Park   |
| 133 | Oakland       | Sun Lake          | 44 | Finnish Day Camp  |
| 134 | Oakland       | Sylvan Lake       | 45 | Ferndale  |
| 135 | Oakland       | Teeple Lake       | 46 | Teeple Lake Recreation Area- Highland State Park        |
| 136 | Oakland       | Tipsico Lake      | 47 | Brown's Landing Mobile Home Park                        |
| 137 | Oakland       | Tommys Lake       | 48 | Camp Agawam Boy Scout Camp                              |
| 138 | Oakland       | Walled Lake       | 49 | E.V. Mercer City Beach                                  |
| 139 | Oakland       | Walled Lake       | 50 | Lakeshore Park  |
| 140 | Oakland       | Walnut Lake       | 51 | Bloomfield Parks and Recreation/West Hills M.S.         |
| 141 | Oakland       | Woodhull Lake     | 52 | Woodhull Lake Civic Association                         |
| 142 | Oakland       | Allen Lake        | 53 | Fox Bay Civic Association*-Pv                           |
| 143 | Oakland       | Chalmers Lake     | 54 | Woodcrest Farms Subdivision - Claridion Street*- PV     |
| 144 | Oakland       | Charlick Lake     | 55 | Highland Hills - Charlick Outlot*- PV                   |
| 145 | Oakland       | Childs Lake       | 56 | Child Lake Estates*-PV                                  |
| 146 | Oakland       | Commerce Lake     | 57 | Oakley Park*- PV  |
| 147 | Oakland       | Commerce Lake     | 58 | Van Stone #1* - Private                                 |
| 148 | Oakland       | Crescent Lake     | 59 | Crescent Lake Sub. Association*- PV                     |
| 149 | Oakland       | Duck Lake         | 60 | Axford Acres - Ramada Road*- PV                         |
| 150 | Oakland       | Duck Lake         | 61 | Seven Craven Association*- PV                           |
| 151 | Oakland       | Eagle Lake        | 62 | Eagle Lake Road- PV                                     |
| 152 | Oakland       | Eagle Lake        | 63 | Lakeland Estates*- PV                                   |
| 153 | Oakland       | Flanders Lake     | 64 | Flanders Lake Beach Association*- PV                    |
| 154 | Oakland       | Gilbert Lake      | 65 | Gilbert Lake Estates*- PV                               |
| 155 | Oakland       | Gilbert Lake      | 66 | Lone Pine Estates* - PV                                 |
| 156 | Oakland       | Schoolhouse Lake  | 67 | Indian Manor Subdivision*- PV                           |
| 157 | Oakland       | Shorewood Lake    | 68 | Shorewood Hills*- PV                                    |
| 158 | Oakland       | Square Lake       | 69 | Square Lake Hills Apt. #2 * PV                          |
| 159 | Oakland       | Square Lake       | 70 | Square Lake Hills Apt/Bloomfield Square Lake Condo* -PV |
| 160 | Oakland       | Troy Lake         | 71 | Troy Lake Estates*-PV                                   |

Appendix D.1. Inland Beaches Monitored 2016.

|           | <b>County</b>              | <b>Water Body</b>  |    | <b>Location</b>                              |
|-----------|----------------------------|--------------------|----|--|
| 161       | Oakland                    | Williams Lake      | 72 | Crest Beach - Landowners* PV                 |
| 162       | Oakland                    | Wolverine Lake     | 73 | Spring Lake Heights*-PV                      |
| 163       | Oakland                    | Wolverine Lake     | 74 | Wolverine Lake Manor*-PV                     |
| 164       | Oakland                    | Wormer Lake        | 75 | Lake Angelus - Golfview Estates*-PV          |
|           |                            |                    |    |  |
| <b>26</b> | <b><u>Ogemaw</u></b>       | Grousehaven Lake   | 1  | Rifle River Recreation Area Campground Beach |
| 166       | Ogemaw                     | Rifle Lake         | 2  | Shady Shores Park Subdivision Beach          |
| 167       | Ogemaw                     | Skidway Lake       | 3  | Skidway Lake                                 |
| 168       | Ogemaw                     | Devoe Lake         | 4  | Rifle River Recreation Area                  |
| 169       | Ogemaw                     | Elbow Lake         | 5  | Mills Township Park                          |
| 170       | Ogemaw                     | Hardwood Lake      | 6  | Hardwood Lake                                |
|           |                            |                    |    |  |
| <b>27</b> | <b><u>Ontonagon</u></b>    | Lake Gogebic       | 1  | Bergland Township Park                       |
| 172       | Ontonagon                  | Lake Gogebic       | 2  | Ontonagon County Park                        |
|           |                            |                    |    |  |
| <b>28</b> | <b><u>Osceola</u></b>      | Big Lake           | 1  | Crittenden Park                              |
| 174       | Osceola                    | Center Lake        | 2  | Center Lake Park                             |
| 175       | Osceola                    | Muskegon River     | 3  | Crawford Park                                |
| 176       | Osceola                    | Rose Lake          | 4  | Rose Lake County Park                        |
|           |                            |                    |    |  |
| <b>29</b> | <b><u>Oscoda</u></b>       | Perry Lake         | 1  | Comins Township Park                         |
| 178       | Oscoda                     | Smith Lake         | 2  | Oscoda County Park                           |
|           |                            |                    |    |  |
| <b>30</b> | <b><u>Otsego</u></b>       | Big Lake           | 1  | Big Lake                                     |
| 180       | Otsego                     | Otsego Lake        | 2  | Arbutus Beach                                |
| 181       | Otsego                     | Otsego Lake        | 3  | Otsego County Park                           |
| 182       | Otsego                     | Otsego Lake        | 4  | Otsego State Park                            |
| 183       | Otsego                     | Otsego Lake        | 5  | WahWah Soo Beach                             |
|           |                            |                    |    |  |
| <b>31</b> | <b><u>Presque Isle</u></b> | Grand Lake         | 1  | Grand Lake Public Access                     |
|           |                            |                    |    |  |
| <b>32</b> | <b><u>Roscommon</u></b>    | Higgins Lake       | 1  | North Higgins State Park                     |
| 186       | Roscommon                  | Higgins Lake       | 2  | South Higgins Lake State Park                |
| 187       | Roscommon                  | Houghton Lake      | 3  | Denton Township Public Beach                 |
| 188       | Roscommon                  | Houghton Lake      | 4  | Houghton Lake Heights                        |
| 189       | Roscommon                  | Lake St. Helen     | 5  | Richfield Township Public Fishing Site       |
|           |                            |                    |    |  |
| <b>33</b> | <b><u>St.Clair</u></b>     | Emmett K.O.A Pond  | 1  | Emmett K.O.A.                                |
|           |                            |                    |    |  |
| <b>34</b> | <b><u>Schoolcraft</u></b>  | Quarry Lake        | 1  | Quarry Beach                                 |
| 192       |                            | Indian lake        | 2  | Indian Lake State Park                       |
|           |                            |                    |    |  |
| <b>35</b> | <b><u>Washtenaw</u></b>    | Bruin Lake         | 1  | Pinckney Recreation Area                     |
| 194       | Washtenaw                  | Half Moon Lake     | 2  | Pinckney Recreation Area                     |
| 195       | Washtenaw                  | Independence Lake  | 3  | Independence Lake County Park                |
| 196       | Washtenaw                  | Silver Lake        | 4  | Pinckney Recreation Area                     |
| 197       | Washtenaw                  | Sugarloaf Lake     | 5  | Waterloo Recreation Area                     |
|           |                            |                    |    |  |
| <b>36</b> | <b><u>Wayne</u></b>        | Belleville Lake    | 1  | Van Buren Township Park                      |
| 199       | Wayne                      | Newburgh Lake      | 2  | Newburgh and Sumac Pointes - Hines Park      |
| 200       | Wayne                      | Sherwood Lake      | 3  | Sherwood Park                                |
| 201       | Wayne                      | Blue Heron Pond    | 4  | Blue Heron Condominiums Pond*- Private       |
| 202       | Wayne                      | Silver Spring Lake | 5  | Silver Spring Lake*- Private                 |
|           |                            |                    |    |  |
| <b>37</b> | <b><u>Wexford</u></b>      | Billings Lake      | 1  | Manton Park                                  |
| 204       | Wexford                    | Lake Cadillac      | 2  | Cadillac City Dock                           |
| 205       | Wexford                    | Lake Cadillac      | 3  | City Park                                    |
| 206       | Wexford                    | Lake Cadillac      | 4  | Kenwood Park                                 |
| 207       | Wexford                    | Lake Meauwataka    | 5  | Colfax Township Park                         |
| 208       | Wexford                    | Lake Mitchell      | 6  | Mitchell State Park                          |

Appendix D.2. Inland Beaches Not Monitored 2016.

|           | <b>County</b>     | <b>Water Body</b>       |   | <b>Location</b>                        |
|-----------|-------------------|-------------------------|---|--|
| <b>1</b>  | 1 <b>Alcona</b>   | Alcona Pond             | 1 | Hubbard Lake- Alcona Township Park     |
|           | 2 Alcona          | Alcona Pond             | 2 | Alcona Pond West Campground            |
| <b>2</b>  | 3 <b>Alger</b>    | AuTrain Lake Campground | 1 | AuTrain Lake Campground USFS           |
|           | 4 Alger           | Corner Lake             | 2 | Corner Lake Campground                 |
|           | 5 Alger           | Deer Lake Park          | 3 | Deer Lake Park                         |
|           | 6 Alger           | Kingston Lake           | 4 | Kingston Lake State Forest Campground  |
|           | 7 Alger           | Petes Lake              | 5 | Petes Lake Campground                  |
| <b>3</b>  | 8 <b>Allegan</b>  | Dumont Lake             | 1 | Dumont Lake County Park Beach          |
|           | 9 Allegan         | Ely Lake                | 2 | Ely Lake Campground Beach              |
|           | 10 Allegan        | Gun Lake                | 3 | Gun Lake County Park Beach             |
|           | 11 Allegan        | Little John Lake        | 4 | Little John Lake County Park Beach     |
|           | 12 Allegan        | Swan Creek Pond         | 5 | Pine Point Campground Beach            |
| <b>4</b>  | 13 <b>Alpena</b>  | Beaver Lake             | 1 | Beaver Lake Park                       |
|           | 14 Alpena         | Lake Avalon             | 2 | Lake Avalon Public Access              |
|           | 15 Alpena         | Long Lake               | 3 | Long Lake Day Use                      |
| <b>5</b>  | 16 <b>Antrim</b>  | Torch Lake              | 1 | Torch River Bridge                     |
|           | 17 Antrim         | Torch River             | 2 | Torch River Sand Bar                   |
| <b>6</b>  | 18 <b>Arenac</b>  | AuGres River            | 1 | AuGres River-DNR Access at Pier        |
|           | 19 Arenac         | Man-Made Pond           | 2 | Big Bend Campground                    |
|           | 20 Arenac         | Man-Made Pond           | 3 | Outdoor Adventures                     |
|           | 21 Arenac         | Pine River              | 4 | Pine River - Arenac County             |
|           | 22 Arenac         | Rifle River             | 5 | Rifle River                            |
| <b>7</b>  | 23 <b>Barry</b>   | Gull Lake               | 1 | Prairieville Township Park             |
|           | 24 Barry          | Gun Lake                | 2 | Old Beach- Day Use Area                |
| <b>8</b>  | 25 <b>Bay</b>     | Saginaw River           | 1 | Independence Bridge                    |
| <b>9</b>  | 26 <b>Benzie</b>  | Crystal Lake            | 1 | South Shore near Beulah                |
|           | 27 Benzie         | Otter Creek beach       | 2 | Otter Creek Beach                      |
|           | 28 Benzie         | Otter Creek beach       | 3 | Sleeping Bear Dunes national Lakeshore |
|           | 29 Benzie         | Otter Creek beach       | 4 | Sleeping Bear Dunes National Lakeshore |
| <b>10</b> | 30 <b>Berrien</b> | Paw Paw Lake            | 1 | Independence Bridge                    |
|           | 31 Berrien        | St. Joseph River        | 2 | Vet's Park South River Road            |
|           | 32 Berrien        | St. Joseph River        | 3 | Niles - French Paper                   |
|           | 33 Berrien        | St. Joseph River        | 4 | Niles - Marmont                        |

Appendix D.2. Inland Beaches Not Monitored 2016.

|              | <b>County</b>     | <b>Water Body</b>           |    | <b>Location</b>               |
|--------------|-------------------|-----------------------------|----|-------------------------------|
| <b>11</b> 34 | <b>Branch</b>     | First Lake                  | 1  | Quincy Park                   |
| 35           | Branch            | Messenger Lake              | 2  | Memorial Park                 |
|              |                   |                             |    |                               |
| <b>12</b> 36 | <b>Calhoun</b>    | Duck Lake                   | 1  | Springport                    |
| 37           | Calhoun           | Goguac Lake                 | 2  | Willard Beach in Battle Creek |
|              |                   |                             |    |                               |
| <b>13</b> 38 | <b>Charlevoix</b> | Huffman Lake                | 1  | Hudson Township Park          |
|              |                   |                             |    |                               |
| <b>14</b> 39 | <b>Cheboygan</b>  | Black Lake                  | 1  | Bluffs Beach                  |
| 40           | Cheboygan         | Burt Lake                   | 2  | Burt Lake State Park          |
| 41           | Cheboygan         | Burt Lake                   | 3  | Devoe Beach                   |
| 42           | Cheboygan         | Burt Lake                   | 4  | Hoppie's Launch               |
| 43           | Cheboygan         | Burt Lake                   | 5  | Maple Bay Park                |
| 44           | Cheboygan         | Douglass Lake               | 6  | Ryder's Landing               |
| 45           | Cheboygan         | Mullett Lake                | 7  | Aloha State Park              |
| 46           | Cheboygan         | Mullett Lake                | 8  | Boy Scout Launch              |
| 47           | Cheboygan         | Mullett Lake                | 9  | Foot Road Park                |
| 48           | Cheboygan         | Mullett Lake                | 10 | Grand View Beach              |
| 49           | Cheboygan         | Mullett Lake                | 11 | Hobert's Launch               |
| 50           | Cheboygan         | Mullett Lake                | 12 | Orchard Beach                 |
| 51           | Cheboygan         | Mullett Lake                | 13 | Polish Line Beach             |
| 52           | Cheboygan         | Mullett Lake                | 14 | Topinabee Park                |
| 53           | Cheboygan         | Webber Lake                 | 15 | Webber Lake State Park        |
| 54           | Cheboygan         | Black Lake                  | 16 | Black Lake S.F.C.G.           |
|              |                   |                             |    |                               |
| <b>15</b> 55 | <b>Chippewa</b>   | Caribou Lake                | 1  | Caribou Lake                  |
| 56           | Chippewa          | Carp Lake                   | 2  | Trout Lake                    |
| 57           | Chippewa          | Soldiers Lake               | 3  | Soldiers Lake                 |
|              |                   |                             |    |                               |
| <b>16</b> 58 | <b>Clare</b>      | Arnold Lake                 | 1  | Arnold Lake Beach             |
| 59           | Clare             | Bertha Lake                 | 2  | Bertha Lake Beach             |
| 60           | Clare             | Cranberry lake              | 3  | Cranberry Lake South          |
| 61           | Clare             | Crooked Lake                | 4  | Hillcrest Public Landing      |
| 62           | Clare             | Doc and Tom Lake            | 5  | Lake of the Pines             |
| 63           | Clare             | Dodge Lake                  | 6  | Dodge Lake Beach              |
| 64           | Clare             | George Lake                 | 7  | Lake George Public Landing    |
| 65           | Clare             | Grass Lake                  | 8  | Sandy Shores Beach            |
| 66           | Clare             | Hayes Lake (Cranberry Lake) | 9  | Oak Hills Children's Camp     |
| 67           | Clare             | Lilly Lake                  | 10 | Lilly Lake Beach              |
| 68           | Clare             | Long Lake                   | 11 | Long Lake Beach               |
| 69           | Clare             | Muskegon River              | 12 | Muskegon River Township Park  |
| 70           | Clare             | Sand Lake                   | 13 | Sand Lake Beach               |
| 71           | Clare             | Shingle Lake                | 14 | Shingle Lake Park             |
| 72           | Clare             | Silver Lake                 | 15 | Silver Lake Park              |
| 73           | Clare             | Townline Lake               | 16 | Cedar Shores Beach            |
|              |                   |                             |    |                               |

Appendix D.2. Inland Beaches Not Monitored 2016.

|               | <b>County</b>  | <b>Water Body</b>        |    | <b>Location</b>                 |
|---------------|----------------|--------------------------|----|---------------------------------|
| <b>17</b> 74  | <b>Clinton</b> | Lake Ovid                | 1  | Sleepy Hollow State Park Beach  |
|               |                |                          |    |                                 |
| <b>18</b> 75  | <b>Eaton</b>   | Grand River              | 1  | Lincoln Brick Park              |
|               |                |                          |    |                                 |
| <b>19</b> 76  | <b>Emmet</b>   | Crooked Lake             | 1  | Oden Roadside Park              |
|               |                |                          |    |                                 |
| <b>20</b> 77  | <b>Genesee</b> | Barnum Lake              | 1  | Barnum Lake                     |
| 78            | Genesee        | Buell Lake               | 2  | Boat Ramp at Buell Lake         |
| 79            | Genesee        | Byram Lake               | 3  | Clover Beach                    |
| 80            | Genesee        | Copneconic Lake          | 4  | Camp Copneconic                 |
| 81            | Genesee        | Copneconic Lake          | 5  | Copneconic Day Beach            |
| 82            | Genesee        | Covenant Hill Camp       | 6  | Covenant Hill Camp              |
| 83            | Genesee        | Fenton Lake              | 7  | DNR Boat Dock-Fenton Lake       |
| 84            | Genesee        | Fenton Lake              | 8  | Fenton Lake Marina              |
| 85            | Genesee        | Fenton Lake              | 9  | Township Hall                   |
| 86            | Genesee        | Flagstone Point          | 10 | Flagstone Point Beach           |
| 87            | Genesee        | Golden Rod Lake          | 11 | Golden Rod Beach                |
| 88            | Genesee        | Hasler Lake              | 12 | Beach at Hasler Lake            |
| 89            | Genesee        | Hasler Lake              | 13 | Hasler Lake Campground          |
| 90            | Genesee        | Holloway Reservoir       | 14 | Walleye Pike Dock               |
| 91            | Genesee        | Holloway Reservoir       | 15 | Buttercup Beach                 |
| 92            | Genesee        | Kelly Lake               | 16 | Kelly Lake                      |
| 93            | Genesee        | Kearsley Reservoir       | 17 | Kearsley Reservoir Beach        |
| 94            | Genesee        | Lake Helene              | 18 | Lake Helene Beach               |
| 95            | Genesee        | Lake Linda               | 19 | Lake Linda                      |
| 96            | Genesee        | Lake Ponemah             | 20 | DNR Boat Launch at Lake Ponemah |
| 97            | Genesee        | Lake Shinangaug          | 21 | Lake Shinangaug                 |
| 98            | Genesee        | Linden Mill Pond         | 22 | Linden Mill Pond Beach          |
| 99            | Genesee        | Lobdell Lake             | 23 | DNR Boat Launch at Lobdell Lake |
| 100           | Genesee        | McCaslin Lake            | 24 | McCaslin Lake Beach             |
| 101           | Genesee        | McKane Lake              | 25 | McKane Lake Beach               |
| 102           | Genesee        | Mott Lake                | 26 | Bluegill Boat Ramp              |
| 103           | Genesee        | Mott Lake                | 27 | Mott Lake Beach                 |
| 104           | Genesee        | Mott Lake Stepping Stone | 28 | Mott Lake Stepping Stone Beach  |
| 105           | Genesee        | Mott Lake                | 29 | Bluebell Beach                  |
| 106           | Genesee        | Myers Lake               | 30 | Myers Lake                      |
| 107           | Genesee        | Otter Lake               | 31 | Griswold Park                   |
| 108           | Genesee        | Pinewood Lake            | 32 | Beach at Pinewood Lake          |
| 109           | Genesee        | Silver Lake              | 33 | City Park Beach                 |
| 110           | Genesee        | Silver Lake              | 34 | Silver Lake Marina              |
| 111           | Genesee        | Smokerise Lake           | 35 | Smokerise Beach                 |
| 112           | Genesee        | Thread Lake              | 36 | Thread Lake Beach               |
| 113           | Genesee        | West Sister Lake         | 37 | West Sister Lake                |
|               |                |                          |    |                                 |
| <b>21</b> 114 | <b>Gladwin</b> | Cedar River              | 1  | Cedar River Campground Beach    |
| 115           | Gladwin        | Cedar River              | 2  | Gladwin North Park              |

Appendix D.2. Inland Beaches Not Monitored 2016.

|           | <b>County</b>           | <b>Water Body</b>        |    | <b>Location</b>                        |
|-----------|-------------------------|--------------------------|----|--|
| 116       | Gladwin                 | Flowing well/pond        | 3  | Gilman Springs Swimming Area           |
| 117       | Gladwin                 | Hoister Lake             | 4  | Hoister Lake Beach                     |
| 118       | Gladwin                 | House Lake               | 5  | House Lake                             |
| 119       | Gladwin                 | Lake Four                | 6  | Lake Four                              |
| 120       | Gladwin                 | Lake Lancer              | 7  | Sugar Springs/Lake Lancer              |
| 121       | Gladwin                 | Lyle Drain/Tobacco River | 8  | Lost Haven Beach                       |
| 122       | Gladwin                 | Pratt Lake               | 9  | Pratt Lake                             |
| 123       | Gladwin                 | Secord Lake              | 10 | Secord Lake                            |
| 124       | Gladwin                 | Secord Lake              | 11 | Secord Lake - East                     |
| 125       | Gladwin                 | Secord Lake              | 12 | West River Drive Boat Launch           |
| 126       | Gladwin                 | Tittabawassee River      | 13 | Estey Road Access                      |
| 127       | Gladwin                 | Tittabawassee River      | 14 | Gilman Springs Canoe Launch            |
| 128       | Gladwin                 | Tittabawassee River      | 15 | Good News Camp                         |
| 129       | Gladwin                 | Tittabawassee River      | 16 | Pine Street Public Access              |
| 130       | Gladwin                 | Trout Lake               | 17 | Trout Lake SFCG                        |
| 131       | Gladwin                 | Wiggins Lake North       | 18 | Wiggins Lake Road to Boat Launch       |
| 132       | Gladwin                 | Wiggins Lake South       | 19 | Clendering Road                        |
| 133       | Gladwin                 | Wixon Lake               | 20 | Wixon Lake - West                      |
|           |                         |                          |    |  |
| <b>22</b> | <b><u>Hillsdale</u></b> | Baw Beese Lake           | 1  | Sandy Beach                            |
| 134       | Hillsdale               | Bird lake                | 2  | Bird Lake Beach                        |
| 135       |                         |                          |    |  |
| <b>23</b> | <b><u>Iosco</u></b>     | Chain Lake               | 1  | Chain Lake Beach                       |
| 136       | Iosco                   | Foot Pond                | 2  | Footsite Park                          |
| 137       | Iosco                   | Loon Lake                | 3  | Loon Lake Park                         |
| 138       |                         |                          |    |  |
| <b>24</b> | <b><u>Isabella</u></b>  | Millpond                 | 1  | Millpond Park                          |
| 139       |                         |                          |    |  |
| <b>25</b> | <b><u>Jackson</u></b>   | Clark Lake               | 1  | Clark Lake County Park                 |
| 140       | Jackson                 | Clear Lake               | 2  | Clear Lake County Park                 |
| 141       | Jackson                 | Gilletts Lake            | 3  | Gilletts Lake County Park              |
| 142       | Jackson                 | Grass Lake               | 4  | Grass Lake County Park                 |
| 143       | Jackson                 | Lime Lake                | 5  | Lime Lake County Park                  |
| 144       | Jackson                 | Little Wolf Lake         | 6  | Little Wolf Lake County Park           |
| 145       | Jackson                 | Pleasant Lake            | 7  | Pleasant Lake County Park & Campground |
| 146       | Jackson                 | Portage Lake             | 8  | Portage Lake County Park               |
| 147       | Jackson                 | Round Lake               | 9  | Round Lake County Park                 |
| 148       | Jackson                 | Swains Lake              | 10 | Swains Lake County Park                |
| 149       | Jackson                 | Vandercook Lake          | 11 | Vandercook Lake County Park            |
| 150       | Jackson                 | Vineyard Lake            | 12 | Vineyard Lake County Park              |
| 151       |                         |                          |    |  |
| <b>26</b> | <b><u>Kalamazoo</u></b> | Timber Lake              | 13 | Timber Lake Campground                 |
| 152       |                         |                          |    |  |
| <b>27</b> | <b><u>Kent</u></b>      | Lincoln Lake             | 1  | Lincoln Lake Baptist Camp              |
| 153       | Kent                    | Lincoln Lake             | 2  | Lincoln Pines Resort                   |
| 154       |                         |                          |    |  |

Appendix D.2. Inland Beaches Not Monitored 2016.

|           | <b>County</b>            | <b>Water Body</b>     |    | <b>Location</b>                            |
|-----------|--------------------------|-----------------------|----|--|
| 155       | Kent                     | Long Lake             | 3  | Long Lake County Park                      |
| 156       | Kent                     | Myers Lake            | 4  | Myers Lake County Park                     |
| 157       | Kent                     | Reeds Lake            | 5  | Collins Park                               |
| 158       | Kent                     | Scalley Lake          | 6  | Scalley Lake Park                          |
| 159       | Kent                     | Versluis Lake         | 7  | Versluis Park                              |
| 160       | Kent                     | Wabasis Lake          | 8  | Wabasis Lake County Park                   |
|           |                          |                       |    |  |
| <b>28</b> | <b><u>Leelanau</u></b>   | Lake Leelanau         | 1  | Leelanau Township Park Beach               |
| 162       | Leelanau                 | Lake Leelanau         | 2  | Popp Road End                              |
|           |                          |                       |    |  |
| <b>29</b> | <b><u>Livingston</u></b> | Dibrova Lake          | 1  | Green Valley Camp                          |
| 164       | Livingston               | Bentley Lake          | 2  | Camp Innisfree                             |
|           |                          |                       |    |  |
| <b>30</b> | <b><u>Luce</u></b>       | Bass Lake             | 1  | Bass Lake SFC                              |
| 166       | Luce                     | Bodi Lake             | 2  | Bodi Lake SFC                              |
| 167       | Luce                     | Culhane Lake          | 3  | Culhane Lake SFC                           |
| 168       | Luce                     | HeadQuarters SFC      | 4  | HeadQuarters SFC                           |
| 169       | Luce                     | Holland Lake SFC      | 5  | Holland Lake SFC                           |
| 170       | Luce                     | Muskallonge Lake      | 6  | Muskallonge Lake SFC                       |
| 171       | Luce                     | Perch Lake            | 7  | Perch Lake SFC                             |
| 172       | Luce                     | Pretty Lake           | 8  | Pretty Lake SFC                            |
| 173       | Luce                     | Luke County Park      | 9  | Luce County Park Campground                |
| 174       | Luce                     | Pike Lake             | 10 | Pike Lake SFC                              |
|           |                          |                       |    |  |
| <b>31</b> | <b><u>Manistee</u></b>   | Bear Lake             | 1  | Bear Lake-13 mile road Beach               |
| 176       | Manistee                 | Bear Lake             | 2  | bear Lake-7th Street Beach                 |
| 177       | Manistee                 | Bear Lake             | 3  | Bear Lake- Hopkins Park                    |
| 178       | Manistee                 | Bear Lake             | 4  | Bear Lake-Myers Road Beach                 |
| 179       | Manistee                 | Bear Lake             | 5  | Bear Lake _Pleasanton Twn.Park Beach       |
|           |                          |                       |    |  |
| 180       | Manistee                 | Bear Lake             | 6  | Bear Lake-South Shore Beach                |
|           |                          |                       |    |  |
| <b>32</b> | <b><u>Mackinac</u></b>   | Brevort Lake          | 1  | Brevort Lake Campground Beach              |
| 182       | Mackinac                 | Garnet Lake           | 2  | Garnet Lake SFC                            |
| 183       | Mackinac                 | Little Brevort Lake   | 3  | Little Brevort Lake State Campground North |
| 184       | Mackinac                 | Little Brevort Lake   | 4  | Little Brevort Lake State Campground South |
| 185       | Mackinac                 | Milakokia Lake        | 5  | Milakokia Lake SFC                         |
| 186       | Mackinac                 | Millecoquins Lake     | 6  | Millecoquins Lake SFC                      |
| 187       | Mackinac                 | South Manistique Lake | 7  | South Manistique Lake SFC                  |
|           |                          |                       |    |  |
| <b>33</b> | <b><u>Menominee</u></b>  | Hermansville lake     | 1  | Hermansville Beach                         |
| 189       | Menominee                | Shakey Lakes          | 2  | Shakey Lakes Campground                    |
|           |                          |                       |    |  |
| <b>34</b> | <b><u>Midland</u></b>    | Sandord Lake          | 1  | Sanford Lake Park                          |

Appendix D.2. Inland Beaches Not Monitored 2016.

|           | <b>County</b> | <b>Water Body</b>  |                                    | <b>Location</b> |  |
|-----------|---------------|--------------------|------------------------------------|-----------------|--|
| <b>35</b> | <b>191</b>    | <b>Monroe</b>      | Camp Lord Willing Pond             | 1               | Camp Lord Willing                        |
|           | <b>192</b>    | Monroe             | Covered Wagon Campground Pond      | 2               | Covered Wagon Campground                 |
|           | <b>193</b>    | Monroe             | Heath Beach Pond                   | 3               | Heath Beach                              |
|           | <b>194</b>    | Monroe             | K.C. Campground Pond               | 4               | K.C. Campground                          |
|           | <b>195</b>    | Monroe             | Man-Made Pond                      | 5               | Totem Pole Campground Pond               |
|           | <b>196</b>    | Monroe             | Monroe KOA Campground Pond         | 6               | Monroe K.O.A. Campground                 |
|           | <b>197</b>    | Monroe             | Pirollis Campground Pond           | 7               | Pirolli's Campground                     |
|           | <b>198</b>    | Monroe             | The Vine Campground Pond           | 8               | The Vine                                 |
|           | <b>199</b>    | Monroe             | Wilderness Retreat Campground Pond | 9               | Wilderness Retreat Campground            |
|           |               |                    |                                    |                 |  |
| <b>36</b> | <b>200</b>    | <b>Montmorency</b> | Clear Lake                         | 1               | Clear Lake Day Use                       |
|           | <b>201</b>    | Montmorency        | Clear Lake                         | 2               | Clear Lake State Park                    |
|           | <b>202</b>    | Montmorency        | Crooked Lake                       | 3               | Crooked Lake Beach                       |
|           | <b>203</b>    | Montmorency        | East Twin Lake                     | 4               | East Twin Beach/Albert Township Park     |
|           | <b>204</b>    | Montmorency        | Ess Lake                           | 5               | Ess Lake State Campground                |
|           |               |                    |                                    |                 |  |
| <b>37</b> | <b>205</b>    | <b>Muskegon</b>    | Goose Egg Lake                     | 1               | Kattulpa                                 |
|           | <b>206</b>    | Muskegon           | Bear Lake                          | 2               | Laketon Township Beach                   |
|           | <b>207</b>    | Muskegon           | Big Blue Lake                      | 3               | Blue Lake County Park Beach              |
|           | <b>208</b>    | Muskegon           | Duck Lake                          | 4               | Duck Lake State Park Beach               |
|           | <b>209</b>    | Muskegon           | Fox Lake                           | 5               | Fox Lake Park Beach                      |
|           | <b>210</b>    | Muskegon           | Half Moon Lake                     | 6               | Moore County Park Beach                  |
|           | <b>211</b>    | Muskegon           | Mona Lake                          | 7               | Mona Lake Park Beach                     |
|           | <b>212</b>    | Muskegon           | Mona Lake                          | 8               | Ross Park Beach                          |
|           | <b>213</b>    | Muskegon           | Muskegon Lake                      | 9               | Harbor Towne Beach                       |
|           | <b>214</b>    | Muskegon           | Muskegon Lake                      | 10              | Muskegon State Park- Muskegon Lake Side  |
|           | <b>215</b>    | Muskegon           | Muskegon Lake                      | 11              | Water Sports Park                        |
|           | <b>216</b>    | Muskegon           | Twin Lake                          | 12              | Twin Lake County Park Beach              |
|           | <b>217</b>    | Muskegon           | West Lake                          | 13              | Paddley Park                             |
|           | <b>218</b>    | Muskegon           | White Lake                         | 14              | Maple Park                               |
|           | <b>219</b>    | Muskegon           | Wolf Lake                          | 15              | Sunset Park                              |
|           | <b>220</b>    | Muskegon           | Wolf Lake                          | 16              | Wolf Lake County Park                    |
|           |               |                    |                                    |                 |  |
| <b>38</b> | <b>221</b>    | <b>Oakland</b>     | Bass Lake                          | 1               | Idlewild Subdivision                     |
|           | <b>222</b>    | Oakland            | Bogie Lake                         | 2               | Bogie Lake Property Owners - Beryl Drive |
|           | <b>223</b>    | Oakland            | Bogie Lake                         | 3               | Pinecrest Shores                         |
|           | <b>224</b>    | Oakland            | Brendel Lake                       | 4               | Brendle Heights - Hillwood               |
|           | <b>225</b>    | Oakland            | Carpenter Lake                     | 5               | Lakeview Recreation                      |
|           | <b>226</b>    | Oakland            | Carpenter Lake                     | 6               | Silver Valley Subdivision                |

Appendix D.2. Inland Beaches Not Monitored 2016.

|     | <b>County</b> | <b>Water Body</b> |    | <b>Location</b>                                |
|-----|---------------|-------------------|----|--|
| 227 | Oakland       | Cass Lake         | 7  | Keego Harbor Trailer Park                      |
| 228 | Oakland       | Cass Lake         | 8  | Cass Lake Woods                                |
| 229 | Oakland       | Cass Lake         | 9  | Sylvan-on-the-Lakes                            |
| 230 | Oakland       | Cass Lake         | 10 | Willow Beach Subdivision                       |
| 231 | Oakland       | Cedar Island Lake | 11 | Cedar Crest Subdivision                        |
| 232 | Oakland       | Cedar Island Lake | 12 | Sunset Subdivision                             |
| 233 | Oakland       | Clear Lake        | 13 | Lakeland Improvement Association -Keith Street |
| 234 | Oakland       | Charnwood Lake    | 14 | Charnwood                                      |
| 235 | Oakland       | Cranberry Lake    | 15 | Cranberry Lake Village                         |
| 236 | Oakland       | Crescent Lake     | 16 | Crescent Highlands                             |
| 237 | Oakland       | Crescent Lake     | 17 | Crescent Lake Park                             |
| 238 | Oakland       | Darb Lake         | 18 | Mission Springs Subdivision                    |
| 239 | Oakland       | Davis Lake        | 19 | Meagher Park/Woodland Manor                    |
| 240 | Oakland       | Deer Lake         | 20 | Deer Lake Estates                              |
| 241 | Oakland       | Ekelund Lake      | 21 | Camp Gordanwood                                |
| 242 | Oakland       | Elizabeth Lake    | 22 | ECHPOA   |
| 243 | Oakland       | Elizabeth Lake    | 23 | Cass-Elizabeth Heights                         |
| 244 | Oakland       | Elizabeth Lake    | 24 | Elizabeth Lake Estates Improvement Assocl      |
| 245 | Oakland       | Elizabeth Lake    | 25 | Elizabeth Lakeshore                            |
| 246 | Oakland       | Elizabeth Lake    | 26 | Elizabeth Shores                               |
| 247 | Oakland       | Elizabeth Lake    | 27 | Rangate Park                                   |
| 248 | Oakland       | Elizabeth Lake    | 28 | Terrace  |
| 249 | Oakland       | Elizabeth Lake    | 29 | Walters  |
| 250 | Oakland       | Emerald Lake      | 30 | Emerald Lake Homeowners Assoc. - Lyster Road   |
| 251 | Oakland       | Fox Lake          | 31 | Cloister-on-the-Lakes                          |
| 252 | Oakland       | Geneva Lake       | 32 | Lakewood Farms - Crocus Street                 |
| 253 | Oakland       | Geneva Lake       | 33 | Lakewood Farms - Sharon Street                 |
| 254 | Oakland       | Hammond Lake      | 34 | Hammond Estates                                |
| 255 | Oakland       | Harvey Lake       | 35 | Harvey Lake Estates                            |
| 256 | Oakland       | Huntoon Lake      | 36 | Burlingham Lake Park I                         |
| 257 | Oakland       | Huntoon Lake      | 37 | Burlingham Lake Park II                        |
| 258 | Oakland       | Huntoon Lake      | 38 | Broadway Civic Association                     |
| 259 | Oakland       | Huntoon Lake      | 39 | Huntoon Village                                |
| 260 | Oakland       | Indian Lake       | 40 | Indian Lake Improvement Association            |
| 261 | Oakland       | Lakeville Lake    | 41 | Doll's Dock (Skip's Landing)                   |
| 262 | Oakland       | Long Lake         | 42 | Annex 1  |
| 263 | Oakland       | Long Lake         | 43 | Bunny Run C.C.                                 |
| 264 | Oakland       | Long Lake         | 44 | Twin Shores Subdivision                        |
| 265 | Oakland       | Loon Lake         | 45 | Sandy Beach                                    |
| 266 | Oakland       | Lotus Lake        | 46 | Harris Park                                    |
| 267 | Oakland       | Lotus Lake        | 47 | Lotus Park                                     |
| 268 | Oakland       | Lotus Lake        | 48 | Mountain View                                  |
| 269 | Oakland       | Lower Straits     | 49 | Maple Point                                    |

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|     | <b>County</b> | <b>Water Body</b>    |    | <b>Location</b>                         |
|-----|---------------|----------------------|----|---|
| 270 | Oakland       | Lower Straits Lake   | 50 | Lower Straits Beach Club                |
| 271 | Oakland       | Maceday Lake         | 51 | Mountain View C.C. Subdivision          |
| 272 | Oakland       | Maceday Lake         | 52 | Whitfield-Maceday Association - North   |
| 273 | Oakland       | Maceday Lake         | 53 | Whitfield-Maceday Association - South   |
| 274 | Oakland       | Marion Lake          | 54 | Locklin Pines Association               |
| 275 | Oakland       | Meadow Lake          | 55 | Meadow Lake Association                 |
| 276 | Oakland       | Middle Straits Lake  | 56 | Crystal Echo                            |
| 277 | Oakland       | Middle Straits Lake  | 57 | Crystal Echo (the point)                |
| 278 | Oakland       | Middle Straits Lake  | 58 | Stony Beach                             |
| 279 | Oakland       | Middle Straits Lake  | 59 | Tripps Subdivision Park                 |
| 280 | Oakland       | Middle Straits Lake  | 60 | Twin Beach Park                         |
| 281 | Oakland       | Middle Straits Lake  | 61 | West Acres                              |
| 282 | Oakland       | Morgan Lake          | 62 | Lake Angelus Lakeview Estates           |
| 283 | Oakland       | Mud Lake             | 63 | Rose Hill Center                        |
| 284 | Oakland       | Narrin Lake          | 64 | Camp Narrin                             |
| 285 | Oakland       | Neva Lake            | 65 | Lakewood Village Subdivision            |
| 286 | Oakland       | Oakland Lake         | 67 | Bird Island Subdivision                 |
| 287 | Oakland       | Oakland Lake         | 68 | Lake Oakland Heights                    |
| 288 | Oakland       | Oakland Lake         | 69 | Lake Oakland Shores                     |
| 289 | Oakland       | Orchard Lake         | 70 | St. Mary's Park                         |
| 290 | Oakland       | Orion Lake           | 71 | Lake Orion Heights                      |
| 291 | Oakland       | Orion Lake           | 72 | Sunset Club                             |
| 292 | Oakland       | Pine Lake            | 73 | Pine Lake Manor                         |
| 293 | Oakland       | Reed Lake            | 74 | Reed Lake Property Owners               |
| 294 | Oakland       | Round Lake           | 75 | Family Park                             |
| 295 | Oakland       | Rowe Lake            | 76 | Jacksina Subdivision                    |
| 296 | Oakland       | Silver Lake          | 78 | Silver Hill Road                        |
| 297 | Oakland       | Sherwood Lake        | 79 | Ledgewood                               |
| 298 | Oakland       | Sherwood Lake        | 80 | Sherwood Boat Ramp                      |
| 299 | Oakland       | Sherwood Lake        | 81 | Sherwood Property Owners                |
| 300 | Oakland       | Square Lake          | 82 | Pleasant View Subdivision               |
| 301 | Oakland       | Square Lake          | 83 | Pleasant View Subdivision- Kempster St. |
| 302 | Oakland       | Sugden Lake          | 84 | Oakridge Subdivision                    |
| 303 | Oakland       | Sylvan Lake          | 85 | Cunningham Park                         |
| 304 | Oakland       | Sylvan Lake          | 86 | Pioneer Highlands                       |
| 305 | Oakland       | Sylvan Lake          | 87 | Sylvan Shores Improvement Association   |
| 306 | Oakland       | Sylvan Lake          | 88 | Lakeview                                |
| 307 | Oakland       | Tan Lake             | 89 | Mary K. Subdivision                     |
| 308 | Oakland       | Union Lake           | 90 | Alpha Beach                             |
| 309 | Oakland       | Union Lake           | 91 | Burley & Barnsbury Streets              |
| 310 | Oakland       | Union Lake           | 92 | Union Lake Beach Club                   |
| 311 | Oakland       | Union Lake           | 93 | Union Lake Heights Subdivision #2       |
| 312 | Oakland       | Upper Pettibone Lake | 94 | 657 Dunleavy                            |
| 313 | Oakland       | Upper Straits Lake   | 95 | Banker's Subdivision                    |

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|           | <b>County</b>         | <b>Water Body</b>  |     | <b>Location</b>                                   |
|-----------|-----------------------|--------------------|-----|---|
| 314       | Oakland               | Upper Straits Lake | 96  | Bayside Beach Association                         |
| 315       | Oakland               | Upper Straits Lake | 97  | Outlet A  |
| 316       | Oakland               | Upper Straits Lake | 98  | Shady Beach                                       |
| 317       | Oakland               | Van Norman Lake    | 99  | Waterford Hill                                    |
| 318       | Oakland               | Voorheis Lake      | 100 | Keatington Subdivision - Eaton Gate - off Baldwin |
| 319       | Oakland               | Voorheis Lake      | 101 | Keatington Subdivision - Joslyn Court             |
| 320       | Oakland               | Walled Lake        | 102 | Beachwalk Apartments                              |
| 321       | Oakland               | Walnut Lake        | 103 | Finnish American Club of Detroit                  |
| 322       | Oakland               | Walnut Lake        | 104 | Shenandoah Farms Association                      |
| 323       | Oakland               | Walnut Lake        | 105 | Walnut Lake Park                                  |
| 324       | Oakland               | Walnut Lake        | 106 | North Cove  |
| 325       | Oakland               | Walters Lake       | 107 | Sunny Beach #1 - Eston Road                       |
| 326       | Oakland               | Walters Lake       | 108 | Sunny Beach #2 - Clarkston Road                   |
| 327       | Oakland               | Watkins Lake       | 109 | Heitch Street                                     |
| 328       | Oakland               | Watkins Lake       | 110 | Lanarh Street                                     |
| 329       | Oakland               | Watkins Lake       | 111 | Whitney Street                                    |
| 330       | Oakland               | Waumegah Lake      | 112 | Lake Waumegah Homeowners Association              |
| 331       | Oakland               | Whipple Lake       | 113 | Whipple Shores Subdivision                        |
| 332       | Oakland               | White Lake         | 114 | Rolling Acres                                     |
| 333       | Oakland               | White Lake         | 115 | Stanley Beach                                     |
| 334       | Oakland               | Wildwood Lake      | 116 | Holly Recreation Area - Wildwood Beach            |
| 335       | Oakland               | Wing Lake          | 117 | Wing Lake Farms Association                       |
| 336       | Oakland               | Wing Lake          | 118 | Wing Lake Property Owners Association             |
| 337       | Oakland               | Walnut Lake        | 119 | Finnish American Club of Detroit                  |
| 338       | Oakland               | Walnut Lake        | 120 | Shenandoah Farms Association                      |
| 339       | Oakland               | Walnut Lake        | 121 | Walnut Lake Park                                  |
| <b>39</b> | <b><u>Ogemaw</u></b>  | Grousehaven Lake   | 1   | Rifle River Recreation Area Day Use Area          |
| 341       | Ogemaw                | Lake George        | 2   | Lake George Campground                            |
| <b>40</b> | <b><u>Osceola</u></b> | Center Lake        | 1   | Center Lake Bible Camp                            |
| 343       | Osceola               | Center Lake        | 2   | Kettunen Center                                   |
| 344       | Osceola               | Diamond Lake       | 3   | Diamond Lake                                      |
| 345       | Osceola               | Diamond Lake       | 4   | DNR Access Diamond Lake                           |
| 346       | Osceola               | Hicks Lake         | 5   | DNR Access Hicks Lake                             |
| 347       | Osceola               | McCoy Lake         | 6   | DNR Access McCoy Lake                             |
| 348       | Osceola               | Muskegon River     | 7   | City of Evert Campground                          |
| 349       | Osceola               | Muskegon River     | 8   | Hersey Road Access                                |
| 350       | Osceola               | Rose Lake          | 9   | Rose Lake Youth Camp                              |
| 351       | Osceola               | Sunrise Lake       | 10  | Sunrise Lake Park                                 |
| 352       | Osceola               | Todd Lake          | 11  | DNR Access Todd Lake                              |

Appendix D.2. Inland Beaches Not Monitored 2016.

|               | <b>County</b>       | <b>Water Body</b>        |    | <b>Location</b>                        |
|---------------|---------------------|--------------------------|----|--|
| 353           | Osceola             | Wells Lake               | 12 | DNR Access Wells Lake                  |
| <b>41</b> 354 | <b>Oscoda</b>       | Mio Pond                 | 1  | Mio Pond Campground                    |
| <b>42</b> 355 | <b>Otsego</b>       | Bear Lake                | 1  | Bear Lake State Forest Campground      |
| 356           | Otsego              | Dixon Lake               | 2  | Dixon Lake Access                      |
| 357           | Otsego              | Otsego Lake              | 3  | Otsego Lake State Park North           |
| 358           | Otsego              | Pickeral Lake            | 4  | Pickeral Lake State Forest Campground  |
| <b>43</b> 359 | <b>Ottawa</b>       | Lake Macatawa            | 1  | Fallen Leaf Park                       |
| 360           | Ottawa              | Crockery Lake            | 2  | Grose Park                             |
| 361           | Ottawa              | Georgetown Lake          | 3  | Georgetown Community Park              |
| 362           | Ottawa              | Lake Macatawa            | 4  | Dunton Park                            |
| 363           | Ottawa              | Lake Macatawa            | 5  | Holland State Park                     |
| 364           | Ottawa              | Maplewood Lake           | 6  | Maplewood Lake Park                    |
| 365           | Ottawa              | Pottawattomie Bayou      | 7  | Pottawattomie Park                     |
| 366           | Ottawa              | Spring Lake              | 8  | Lakeside Beach                         |
| <b>44</b> 367 | <b>Presque Isle</b> | Black Lake               | 1  | Onaway State Park                      |
| 368           | Presque Isle        | Grand Lake               | 2  | Grand Lake Northwest                   |
| 369           | Presque Isle        | Lake May                 | 3  | Lake May Public Access                 |
| 370           | Presque Isle        | Ocquoec River            | 4  | Millersburg Park                       |
| 371           | Presque Isle        | Ocquoec River            | 5  | Ocquoec Falls Park                     |
| 372           | Presque Isle        | Shoepac Lake             | 6  | Shoepac Lake Campground                |
| 373           | Presque Isle        | Sunken Lake              | 7  | Sunken Lake County Park                |
| 374           | Presque Isle        | Tomahawk Lake            | 8  | Tomahawk Lake Campground               |
| <b>45</b> 375 | <b>Roscommon</b>    | Backus Pond              | 1  | Backus Township Park                   |
| 376           | Roscommon           | Bambi Lake/Sinkhole Lake | 2  | Bambi Lake Camp                        |
| 377           | Roscommon           | Higgins Lake             | 3  | Beaver Creek Road End                  |
| 378           | Roscommon           | Higgins Lake             | 4  | DNR Public Fishing Site                |
| 379           | Roscommon           | Higgins Lake             | 5  | Gerrish Township Park                  |
| 380           | Roscommon           | Higgins Lake             | 6  | Higgins Lake Public Fishing Site       |
| 381           | Roscommon           | Higgins Lake             | 7  | Kelly Beach                            |
| 382           | Roscommon           | Higgins Lake             | 8  | Phoenix Park                           |
| 383           | Roscommon           | Higgins Lake             | 9  | Sam-O-Set Road End                     |
| 384           | Roscommon           | Houghton Lake            | 10 | Houghton Lake DNR Boat Launch and Park |
| 385           | Roscommon           | Houghton Lake            | 11 | Houghton Lake Public Fishing Site      |
| 386           | Roscommon           | Houghton Lake            | 12 | Houghton Lake State Forest Campground  |
| 387           | Roscommon           | Houghton Lake            | 13 | Old 27 DNR Access                      |
| 388           | Roscommon           | Owens Lake               | 14 | Camp Co-Be-Ac                          |
| <b>46</b> 389 | <b>Saginaw</b>      | Haithco Lake             | 1  | Haithco Recreation Area                |

Appendix D.2. Inland Beaches Not Monitored 2016.

|               | <b>County</b>      | <b>Water Body</b>    |   | <b>Location</b>             |
|---------------|--------------------|----------------------|---|-----------------------------|
| 390           | Saginaw            | Lake of Dreams       | 2 | Lake of Dreams Campground   |
| <b>47</b> 391 | <b>Sanilac</b>     | Forester Creek       | 1 | Forester Creek              |
| <b>48</b> 392 | <b>Schoolcraft</b> | Clear Lake           | 1 | Clear Lake Camp             |
| 393           | Schoolcraft        | Clear Lake           | 2 | Cowell Lake Campground      |
| 394           | Schoolcraft        | Gulliver Lake        | 3 | Gulliver Lake               |
| 395           | Schoolcraft        | Swan lake            | 4 | Swan Lake                   |
| 396           | Schoolcraft        | Triangle Lake        | 5 | Triangle Lake Site #1       |
| 397           | Schoolcraft        | Triangle Lake        | 6 | Triangle Lake Site #2       |
| <b>49</b> 398 | <b>St. Clair</b>   | Fort Trodd Lake      | 1 | Fort Trodd Campground North |
| 399           | St. Clair          | Fort Trodd Lake      | 2 | Fort Trodd South            |
| 400           | St. Clair          | Kimball Pond         | 3 | Kimball Township Pond       |
| 401           | St. Clair          | Ruby Campground Pond | 4 | Ruby Campground             |
| <b>50</b> 402 | <b>St. Joseph</b>  | Cade Lake            | 1 | Cade Lake Beach             |
| 403           | St. Joseph         | Palmer Lake          | 2 | Palmer Lake Beach           |
| 404           | St. Joseph         | Sand Lake            | 3 | Nottawa Park                |
| <b>51</b> 405 | <b>Tuscola</b>     | Murphy Lake          | 1 | Murphy Lake                 |
| <b>52</b> 406 | <b>Wayne</b>       | Newburgh Lake        | 1 | Newburgh Lake               |

Appendix E.1. Great Lakes Beaches Monitored 2016.

|          |    | <b>County</b>  | <b>Water Body</b>          |   | <b>Location</b>                            |
|----------|----|----------------|----------------------------|---|--|
| <b>1</b> | 1  | <b>Alcona</b>  | Lake Huron                 | 1 | Harrisville State Park                     |
|          | 2  | Alcona         | Lake Huron                 | 2 | Greenbush Township                         |
| <b>2</b> | 3  | <b>Allegan</b> | Lake Michigan              | 1 | Casco Township Park                        |
|          | 4  | Allegan        | Lake Michigan              | 2 | Douglas Beach                              |
|          | 5  | Allegan        | Lake Michigan              | 3 | Laketown Township Park                     |
|          | 6  | Allegan        | Lake Michigan              | 4 | Oval Beach                                 |
|          | 7  | Allegan        | Lake Michigan              | 5 | Pier Cove Beach                            |
|          | 8  | Allegan        | Lake Michigan              | 6 | Saugatuck Dunes State Park Shoreline Beach |
|          | 9  | Allegan        | Lake Michigan              | 7 | West Side County Park Beach                |
| <b>3</b> | 10 | <b>Alpena</b>  | Lake Huron                 | 1 | Blair Street Park                          |
|          | 11 | Alpena         | Lake Huron                 | 2 | Starlite Beach                             |
| <b>4</b> | 12 | <b>Antrim</b>  | Lake Michigan              | 1 | Barnes Park                                |
|          | 13 | Antrim         | Lake Michigan              | 2 | Elk Rapids                                 |
|          | 14 | Antrim         | Lake Michigan              | 3 | Veterans Memorial Park                     |
|          | 15 | Antrim         | Lake Michigan              | 4 | Antrim County Day Park South               |
|          | 16 | Antrim         | Lake Michigan              | 5 | Banks Township Park                        |
|          | 17 | Antrim         | Lake Michigan              | 6 | Echo Township Park                         |
| <b>5</b> | 18 | <b>Arenac</b>  | Saginaw Bay-Lake Huron     | 1 | Arenac County Park                         |
|          | 19 | Arenac         | Saginaw Bay-Lake Huron     | 2 | Bessinger Road Beach                       |
|          | 20 | Arenac         | Saginaw Bay-Lake Huron     | 3 | Cemetery Beach                             |
|          | 21 | Arenac         | Saginaw Bay-Lake Huron     | 4 | Dyer Road Beach                            |
|          | 22 | Arenac         | Saginaw Bay-Lake Huron     | 5 | Foster Road Beach                          |
|          | 23 | Arenac         | Saginaw Bay-Lake Huron     | 6 | Hammel Beach Road Access                   |
|          | 24 | Arenac         | Saginaw Bay-Lake Huron     | 7 | Singing Bridge Beach                       |
|          | 25 | Arenac         | Saginaw Bay-Lake Huron     | 8 | Twining Road Beach                         |
|          | 26 | Arenac         | Saginaw Bay                | 9 | Whites Beach                               |
| <b>6</b> | 27 | <b>Baraga</b>  | Keweenaw Bay/Lake Superior | 1 | L'Anse Waterfront Park                     |
| <b>7</b> | 28 | <b>Bay</b>     | Saginaw Bay-Lake Huron     | 1 | Bay City State Recreation Area             |
|          | 29 | Bay            | Saginaw Bay-Lake Huron     | 2 | Brissette Beach Township Park              |
|          | 30 | Bay            | Saginaw Bay-Lake Huron     | 3 | Pinconning Park                            |
|          | 31 | Bay            | Saginaw Bay-Lake Huron     | 4 | South Linwood Beach Township Park          |
|          | 32 | Bay            | Saginaw Bay-Lake Huron     | 5 | Wenona Beach                               |
| <b>8</b> | 33 | <b>Benzie</b>  | Lake Michigan              | 1 | Frankfort: Anchor Road Beach               |
|          | 34 | Benzie         | Lake Michigan              | 2 | Sleeping Bear Dunes- Esch Road Beach       |
|          | 35 | Benzie         | Lake Michigan              | 3 | Sleeping Bear Dunes- Platte point Bay      |
|          | 36 | Benzie         | Lake Michigan              | 4 | Sleeping Bear Dunes- Platte River Outlet   |

Appendix E.1. Great Lakes Beaches Monitored 2016.

|           | <b>County</b> | <b>Water Body</b>        |                  | <b>Location</b> |  |
|-----------|---------------|--------------------------|------------------|-----------------|--|
| <b>9</b>  | <b>37</b>     | <b><u>Berrien</u></b>    | Lake Michigan    | 1               | Cherry Beach                           |
|           | <b>38</b>     | Berrien                  | Lake Michigan    | 2               | Grand Beach                            |
|           | <b>39</b>     | Berrien                  | Lake Michigan    | 3               | Hagar Township Park                    |
|           | <b>40</b>     | Berrien                  | Lake Michigan    | 4               | Jean Klock Park                        |
|           | <b>41</b>     | Berrien                  | Lake Michigan    | 5               | Lions Park                             |
|           | <b>42</b>     | Berrien                  | Lake Michigan    | 6               | Michiana Village                       |
|           | <b>43</b>     | Berrien                  | Lake Michigan    | 7               | New Buffalo City                       |
|           | <b>44</b>     | Berrien                  | Lake Michigan    | 8               | Silver Beach                           |
|           | <b>45</b>     | Berrien                  | Lake Michigan    | 9               | Tiscornia Park                         |
|           | <b>46</b>     | Berrien                  | Lake Michigan    | 10              | Union Pier - Townline Road             |
|           | <b>47</b>     | Berrien                  | Lake Michigan    | 11              | Warren Dunes Beach                     |
|           | <b>48</b>     | Berrien                  | Lake Michigan    | 12              | Lincoln Township Park                  |
|           | <b>49</b>     | Berrien                  | Lake Michigan    | 13              | Weko Beach                             |
|           | <b>50</b>     | Berrien                  | Lake Michigan    | 14              | Rocky Gap                              |
|           |               |                          |                  |                 |  |
| <b>10</b> | <b>51</b>     | <b><u>Charlevoix</u></b> | Lake Charlevoix  | 1               | Elm Point Beach                        |
|           | <b>52</b>     | Charlevoix               | Lake Charlevoix  | 2               | Fisherman's Island State Park          |
|           | <b>53</b>     | Charlevoix               | Lake Charlevoix  | 3               | Young State Park Beach                 |
|           | <b>54</b>     | Charlevoix               | Lake Michigan    | 4               | Lake Michigan Beach                    |
|           | <b>55</b>     | Charlevoix               | Lake Michigan    | 5               | Whiting Park Beach                     |
|           | <b>56</b>     | Charlevoix               | Lake Charlevoix  | 6               | Depot Beach                            |
|           | <b>57</b>     | Charlevoix               | Lake Charlevoix  | 7               | East Jordan Tourist Park               |
|           | <b>58</b>     | Charlevoix               | Lake Charlevoix  | 8               | Ferry Beach                            |
|           | <b>59</b>     | Charlevoix               | Lake Charlevoix  | 9               | Glenwood Beach                         |
|           | <b>60</b>     | Charlevoix               | Lake Charlevoix  | 10              | Hayes Township Park                    |
|           | <b>61</b>     | Charlevoix               | Lake Charlevoix  | 11              | Peninsula Beach                        |
|           | <b>62</b>     | Charlevoix               | Lake Charlevoix  | 12              | Tannery Park                           |
|           | <b>63</b>     | Charlevoix               | Lake Charlevoix  | 13              | Washington Street Beach                |
|           | <b>64</b>     | Charlevoix               | Lake Michigan    | 14              | Michigan Avenue                        |
|           | <b>65</b>     | Charlevoix               | Lake Michigan    | 15              | Norwood Township Park                  |
|           |               |                          |                  |                 |  |
| <b>11</b> | <b>66</b>     | <b><u>Chippewa</u></b>   | Lake Superior    | 1               | Brimley State Park                     |
|           | <b>67</b>     | Chippewa                 | Lake Superior    | 2               | Sherman Park                           |
|           | <b>68</b>     | Chippewa                 | St. Mary's River | 3               | Four Mile Beach                        |
|           | <b>69</b>     | Chippewa                 | St. Mary's River | 4               | Sugar Island Township Beach            |
|           |               |                          |                  |                 |  |
| <b>12</b> | <b>70</b>     | <b><u>Delta</u></b>      | Lake Michigan    | 1               | Escanaba Bathing Beach                 |
|           | <b>71</b>     | Delta                    | Lake Michigan    | 2               | Gladstone Bathing Beach/Van Cleve Park |
|           |               |                          |                  |                 |  |
| <b>13</b> | <b>72</b>     | <b><u>Emmet</u></b>      | Lake Michigan    | 1               | Petoskey State Park                    |
|           | <b>73</b>     | Emmet                    | Lake Michigan    | 2               | Zorn Park - Harbor Springs             |
|           | <b>74</b>     | Emmet                    | Lake Michigan    | 3               | Cross Village Beach                    |
|           | <b>75</b>     | Emmet                    | Lake Michigan    | 4               | Mackinaw City Beach #1                 |
|           | <b>76</b>     | Emmet                    | Lake Michigan    | 5               | Mackinaw City Beach #2                 |

Appendix E.1. Great Lakes Beaches Monitored 2016.

|           | <b>County</b>   | <b>Water Body</b>                       |    | <b>Location</b>                         |
|-----------|-----------------|---|----|---|
| 77        | Emmet           | Lake Michigan                           | 6  | Magnus Park                             |
| 78        | Emmet           | Lake Michigan                           | 7  | Middle Village Park                     |
| 79        | Emmet           | Lake Michigan                           | 8  | Readmond Township Beach                 |
| 80        | Emmet           | Lake Michigan                           | 9  | Sturgeon Bay Township Beach             |
| 81        | Emmet           | Lake Michigan                           | 10 | Wilderness State Park                   |
| 82        | Emmet           | Lake Michigan                           | 11 | Zoll Street Beach                       |
|           |                 |   |    |   |
| <b>14</b> | <b>Grand</b>    | Grand Traverse Bay-East                 | 1  | Bayside Acme Township Park              |
| 84        | Grand Traverse  | Grand Traverse Bay-East                 | 2  | East Bay Park (Milliken Park)           |
| 85        | Grand Traverse  | Grand Traverse Bay-East                 | 3  | Traverse City State Park                |
| 86        | Grand Traverse  | Grand Traverse Bay-West                 | 4  | Bryant Park Beach                       |
| 87        | Grand Traverse  | Grand Traverse Bay-West                 | 5  | Clinch Park                             |
| 88        | Grand Traverse  | Grand Traverse Bay-East                 | 6  | Sayler Park                             |
| 89        | Grand Traverse  | Grand Traverse Bay-West                 | 7  | West End Beach                          |
| 90        | Grand Traverse  | Grand Traverse Bay-West                 | 8  | Sunset Park                             |
| 91        | Grand Traverse  | Grand Traverse Bay-West                 | 9  | Senior Center                           |
| 92        | Grand Traverse  | Grand Traverse (West Bay)               | 10 | Volleyball Court Beach                  |
|           |                 |   |    |   |
| <b>15</b> | <b>Houghton</b> | Lake Superior                           | 1  | Agate Beach                             |
| 94        | Houghton        | Lake Superior                           | 2  | McLain State Park Beach                 |
| 95        | Houghton        | Pike Bay at Portage Canal/Lake Superior | 3  | Chassell Beach                          |
| 96        | Houghton        | Portage Canal/Lake Superior             | 4  | Houghton City Beach                     |
| 97        | Houghton        | Portage Canal/Lake Superior             | 5  | Hancock City Beach                      |
| 98        | Houghton        | Portage Canal/Lake Superior             | 6  | Sandy Bottom Beach/Dollar Bay           |
| 99        | Houghton        | Torch Lake/Portage Canal/Lake Superior  | 7  | Lake Linden Campground Beach            |
|           |                 |   |    |   |
| <b>16</b> | <b>Huron</b>    | Lake Huron                              | 1  | Bird Creek County Park                  |
| 101       | Huron           | Lake Huron                              | 2  | Caseville County Park                   |
| 102       | Huron           | Lake Huron                              | 3  | Harbor Beach City Park                  |
| 103       | Huron           | Lake Huron                              | 4  | Jenks County Park                       |
| 104       | Huron           | Lake Huron                              | 5  | Lighthouse County Park                  |
| 105       | Huron           | Lake Huron                              | 6  | McGraw County Park                      |
| 106       | Huron           | Lake Huron                              | 7  | Oak Beach County Park                   |
| 107       | Huron           | Lake Huron                              | 8  | Philp County Park                       |
| 108       | Huron           | Lake Huron                              | 9  | Port Crescent State Park - Camping Area |
| 109       | Huron           | Lake Huron                              | 10 | Port Crescent State Park - Day Use      |
| 110       | Huron           | Lake Huron                              | 11 | Sleeper State Park                      |
| 111       | Huron           | Lake Huron                              | 12 | Thompson Park                           |
| 112       | Huron           | Lake Huron                              | 13 | Veterans Park                           |
|           |                 |   |    |   |
| <b>17</b> | <b>Iosco</b>    | Lake Huron                              | 1  | Au Sable Township Park                  |
| 114       | Iosco           | Lake Huron                              | 2  | MDOT Roadside Park - Three Mile Park    |

Appendix E.1. Great Lakes Beaches Monitored 2016.

|           | <b>County</b>           | <b>Water Body</b>        |    | <b>Location</b>                                 |
|-----------|-------------------------|--------------------------|----|---|
| 115       | Iosco                   | Lake Huron               | 3  | Oscoda Township Beach                           |
| 116       | Iosco                   | Lake Huron               | 4  | Tawas Point State Park Campground               |
| 117       | Iosco                   | Lake Huron               | 5  | Tawas Point State Park-Day Use area             |
| 118       | Iosco                   | Lake Huron (Tawas Bay)   | 6  | Gateway Park Beach                              |
| 119       | Iosco                   | Tawas Bay                | 7  | East Tawas City Park                            |
| 120       | Iosco                   | Tawas Bay                | 8  | Tawas City Park                                 |
| 121       | Iosco                   | Lake Huron               | 9  | Alabaster Township Douglas Drive Beach Use Area |
|           |                         |                          |    |   |
| <b>18</b> | <b><u>Keweenaw</u></b>  | Lake Superior            | 1  | Eagle Harbor Beach                              |
| 123       | Keweenaw                | Lake Superior            | 2  | Eagle River Beach                               |
|           |                         |                          |    |   |
| <b>19</b> | <b><u>Leelanau</u></b>  | Grand Traverse Bay-West  | 1  | Elmwood/Greilikville Park and Beach             |
| 125       | Leelanau                | Grand Traverse Bay-West  | 2  | Northport Bay Marina                            |
| 126       | Leelanau                | Grand Traverse Bay-West  | 3  | Suttons Bay Marina Park and Beach South         |
|           |                         |                          |    |   |
| 127       | Leelanau                | Grand Traverse Bay-West  | 4  | Suttons Bay Park                                |
| 128       | Leelanau                | Lake Michigan            | 5  | Empire Municipal Beach                          |
| 129       | Leelanau                | Grand Traverse Bay- West | 6  | Omena Beach and Park                            |
| 130       | Leelanau                | Lake Michigan            | 7  | Sleeping Bear Dunes- CR 669 Good                |
| 131       | Leelanau                | Lake Michigan            | 8  | Sleeping Bear Dunes- CR 651 Good                |
| 132       | Leelanau                | Lake Michigan            | 9  | Sleeping Bear Dunes- Glen Haven Beach           |
|           |                         |                          |    |   |
| 133       | Leelanau                | Lake Michigan            | 10 | Sleeping Bear Dunes- North Bar Lake MI Beach    |
|           |                         |                          |    |   |
| <b>20</b> | <b><u>Mackinac</u></b>  | Lake Huron               | 1  | Kiwanis Beach                                   |
| 135       | Mackinac                | Lake Michigan            | 2  | US-2 Sand Dunes Beach (East of Brevort)         |
|           |                         |                          |    |   |
| <b>21</b> | <b><u>Macomb</u></b>    | Lake St. Clair           | 1  | H.C.M.A. - Lake St. Clair Metropark Beach       |
| 137       | Macomb                  | Lake St. Clair           | 2  | New Baltimore Park Beach                        |
| 138       | Macomb                  | Lake St. Clair           | 3  | St. Clair Shores Memorial Park Beach            |
|           |                         |                          |    |   |
| <b>22</b> | <b><u>Manistee</u></b>  | Lake Michigan            | 1  | Arcadia Park                                    |
| 140       | Manistee                | Lake Michigan            | 2  | Bar Lake Outlet                                 |
| 141       | Manistee                | Lake Michigan            | 3  | Fifth Avenue Beach                              |
| 142       | Manistee                | Lake Michigan            | 4  | First Street Beach                              |
| 143       | Manistee                | Lake Michigan            | 5  | Magoon Creek                                    |
| 144       | Manistee                | Lake Michigan            | 6  | Onkama Township Beach                           |
| 145       | Manistee                | Lake Michigan            | 7  | Orchard Beach State Park                        |
| 146       | Manistee                | Lake Michigan            | 8  | Pierport Township Beach                         |
| 147       | Manistee                | Lake Michigan            | 9  | Sundling Park                                   |
|           |                         |                          |    |   |
| <b>23</b> | <b><u>Marquette</u></b> | Lake Superior            | 1  | Marquette South Beach                           |

Appendix E.1. Great Lakes Beaches Monitored 2016.

|           | <b>County</b>           | <b>Water Body</b>            |    | <b>Location</b>                                |
|-----------|-------------------------|------------------------------|----|--|
| 149       | Marquette               | Lake Superior                | 2  | McCarty's Cove                                 |
| 150       | Marquette               | Lake Superior                | 3  | North Beach                                    |
| 151       | Marquette               | Lake Superior                | 4  | North of Picnic Rocks                          |
| 152       | Marquette               | Lake Superior                | 5  | Shiras Park Beach                              |
|           |                         |                              |    |  |
| <b>24</b> | <b><u>Mason</u></b>     | Lake Michigan                | 1  | Bass Lake Outlet Beach                         |
| 154       | Mason                   | Lake Michigan                | 2  | Buttersville Park Beach                        |
| 155       | Mason                   | Lake Michigan                | 3  | Ludington State Park Campground Beach          |
| 156       | Mason                   | Lake Michigan                | 4  | South Pier Beach                               |
| 157       | Mason                   | Lake Michigan                | 5  | South Summit Beach - Sunset Boulevard          |
| 158       | Mason                   | Lake Michigan                | 6  | Stearns Park Beach                             |
| 159       | Mason                   | Lake Michigan                | 7  | Summit Township Beach                          |
|           |                         |                              |    |  |
| <b>25</b> | <b><u>Menominee</u></b> | Lake Michigan                | 1  | Henes Park                                     |
| 161       | Menominee               | Lake Michigan                | 2  | Memorial Beach                                 |
|           |                         |                              |    |  |
| <b>26</b> | <b><u>Monroe</u></b>    | Lake Erie                    | 1  | Luna Pier City Beach                           |
| 163       | Monroe                  | Lake Erie                    | 2  | Sterling State Park                            |
|           |                         |                              |    |  |
| <b>27</b> | <b><u>Muskegon</u></b>  | Lake Michigan                | 1  | Bronson/Kruse Park                             |
| 165       | Muskegon                | Lake Michigan                | 2  | Meinert County Park                            |
| 166       | Muskegon                | Lake Michigan                | 3  | Muskegon State Park                            |
| 167       | Muskegon                | Lake Michigan                | 4  | P.J. Hoffmaster State Park - Public Beach Area |
| 168       | Muskegon                | Lake Michigan                | 5  | Pere Marquette Park                            |
| 169       | Muskegon                | Lake Michigan                | 6  | Lake Harbor Park                               |
| 170       | Muskegon                | Lake Michigan                | 7  | Lighthouse/Sylvan Beach                        |
| 171       | Muskegon                | Lake Michigan                | 8  | Medbury Park Beach                             |
| 172       | Muskegon                | Lake Michigan                | 9  | Muskegon State Park- North Campground Beach    |
| 173       | Muskegon                | Lake Michigan                | 10 | Old Channel Beach                              |
| 174       | Muskegon                | Lake Michigan                | 11 | P.J. Hoffmaster State Park- Campground         |
| 175       | Muskegon                | Lake Michigan                | 12 | Pioneer County Park                            |
| 176       | Muskegon                | Lake Michigan                | 13 | Duck Lake Channel Beach                        |
|           |                         |                              |    |  |
| <b>28</b> | <b><u>Oceana</u></b>    | Lake Michigan                | 1  | Claybanks Township Park                        |
| 178       | Oceana                  | Lake Michigan                | 2  | Lighthouse Beach at Silver Lake State Park     |
| 179       | Oceana                  | Lake Michigan                | 3  | Mears State Park                               |
| 180       | Oceana                  | Lake Michigan                | 4  | Whiskey Creek                                  |
| 181       | Oceana                  | Stony Lake and Lake Michigan | 5  | Stony Lake Channel                             |
|           |                         |                              |    |  |
| <b>29</b> | <b><u>Ontonagon</u></b> | Lake Superior                | 1  | Ontonagon Township Park and Campground         |

Appendix E.1. Great Lakes Beaches Monitored 2016.

|           | <b>County</b>      | <b>Water Body</b> |   | <b>Location</b>                           |
|-----------|--------------------|-------------------|---|---|
| 183       | Ontonagon          | Lake Superior     | 2 | Porcupine Mountains State Park- Union Bay |
|           |                    |                   |   |   |
| <b>30</b> | <b>Ottawa</b>      | Lake Michigan     | 1 | Grand Haven State Park                    |
| 185       | Ottawa             | Lake Michigan     | 2 | Grand Haven City Beach                    |
| 186       | Ottawa             | Lake Michigan     | 3 | Holland State Park                        |
| 187       | Ottawa             | Lake Michigan     | 4 | Tunnel Park                               |
| 188       | Ottawa             | Lake Michigan     | 5 | Windsnest Park                            |
|           |                    |                   |   |   |
| <b>31</b> | <b>Sanilac</b>     | Lake Huron        | 1 | Forester County Park                      |
| 190       | Sanilac            | Lake Huron        | 2 | Forestville Beach                         |
| 191       | Sanilac            | Lake Huron        | 3 | Lexington Beach                           |
| 192       | Sanilac            | Lake Huron        | 4 | Lexington County Park                     |
| 193       | Sanilac            | Lake Huron        | 5 | Port Sanilac Park                         |
|           |                    |                   |   |   |
| <b>32</b> | <b>Schoolcraft</b> | Lake Michigan     | 1 | Public Shoreline Beach-Thompson           |
| 195       | Schoolcraft        | Lake Michigan     | 2 | Rogers Park-MDOT                          |
|           |                    |                   |   |   |
| <b>33</b> | <b>St. Clair</b>   | Lake Huron        | 1 | Lakeport State Campground                 |
| 197       | St. Clair          | Lake Huron        | 2 | Conger-Lighthouse Beach                   |
| 198       | St. Clair          | Lake Huron        | 3 | Fort Gratiot County Park                  |
| 199       | St. Clair          | Lake Huron        | 4 | Holland Road Beach                        |
| 200       | St. Clair          | Lake Huron        | 5 | Lakeside Beach                            |
| 201       | St. Clair          | Lake Huron        | 6 | Keewadhin Road Beach                      |
| 202       | St. Clair          | St. Clair River   | 7 | Chrysler Park Beach                       |
| 203       | St. Clair          | St. Clair River   | 8 | Marine City Beach                         |
|           |                    |                   |   |   |
| <b>34</b> | <b>Van Buren</b>   | Lake Michigan     | 1 | Covert Township Park Beach                |
| 205       | Van Buren          | Lake Michigan     | 2 | South Haven North Beach                   |
| 206       | Van Buren          | Lake Michigan     | 3 | South Haven South Beach                   |
| 207       | Van Buren          | Lake Michigan     | 4 | Van Buren State Park Beach                |
|           |                    |                   |   |   |
| <b>35</b> | <b>Wayne</b>       | Detroit River     | 1 | Belle Isle Beach                          |
| 209       | Wayne              | Lake St. Clair    | 2 | Pier Park                                 |

Appendix E.2. Great Lakes Beaches Not Monitored 2016

|          | <b>County</b> | <b>Water Body</b>       |    | <b>Location</b>                                    |
|----------|---------------|-------------------------|----|--|
| <b>1</b> | <b>Alcona</b> | Lake Huron              | 1  | Black River Public Access                          |
| 2        | Alcona        | Lake Huron              | 2  | Negwegon State Park                                |
| 3        | Alcona        | Lake Huron              | 3  | Point Road Beach                                   |
| 4        | Alcona        | Lake Huron              | 4  | Public Shoreline Beach-Huron National Forest North |
| 5        | Alcona        | Lake Huron              | 5  | Public Shoreline Beach-Huron National Forest South |
| 6        | Alcona        | Lake Huron              | 6  | Trask Lake Road Beach                              |
| 7        | Alcona        | Lake Huron              | 7  | Harrisville Public Access                          |
|          |               |                         |    |  |
| <b>2</b> | <b>Alger</b>  | Lake Superior           | 1  | Au Train Beach                                     |
| 9        | Alger         | Lake Superior           | 2  | Bay Furnance Recreation Area Beach                 |
| 10       | Alger         | Lake Superior           | 3  | Christmas Beach                                    |
| 11       | Alger         | Lake Superior           | 4  | Grand Marais Harbor Beach                          |
| 12       | Alger         | Lake Superior           | 5  | Grand Marais Township Beach                        |
| 13       | Alger         | Lake Superior           | 6  | Hurricane Campground Beach                         |
| 14       | Alger         | Lake Superior           | 7  | Miners Beach                                       |
| 15       | Alger         | Lake Superior           | 8  | Munising Beach                                     |
| 16       | Alger         | Lake Superior           | 9  | Public Shoreline Beach-Au Train Bay                |
| 17       | Alger         | Lake Superior           | 10 | Public Shoreline Beach-Au Train to Five            |
| 18       | Alger         | Lake Superior           | 11 | Public Shoreline Beach-East County Border          |
| 19       | Alger         | Lake Superior           | 12 | Public Shoreline Beach-Grand Sable Dunes           |
| 20       | Alger         | Lake Superior           | 13 | Public Shoreline-Grand Portal Point                |
| 21       | Alger         | Lake Superior           | 14 | Public Shoreline-Sand Point to Miners              |
| 22       | Alger         | Lake Superior           | 15 | Rathfoot Park Beach                                |
| 23       | Alger         | Lake Superior           | 16 | Roadside Park                                      |
| 24       | Alger         | Lake Superior           | 17 | Sand Point   |
| 25       | Alger         | Lake Superior           | 18 | Twelve-Mile Beach                                  |
|          |               |                         |    |  |
| <b>3</b> | <b>Alpena</b> | Lake Huron              | 1  | Bay View Park                                      |
| 27       | Alpena        | Lake Huron              | 2  | Elcajon Bay  |
| 28       | Alpena        | Lake Huron              | 3  | Issineke Hardwood Point                            |
| 29       | Alpena        | Lake Huron              | 4  | Michekewis Beach                                   |
| 30       | Alpena        | Lake Huron              | 5  | Negwegon State Park-Ossineke South Point           |
| 31       | Alpena        | Lake Huron              | 6  | 3-Ossineke Beach                                   |
| 32       | Alpena        | Lake Huron              | 7  | Ossineke Campground                                |
| 33       | Alpena        | Lake Huron              | 8  | Ossineke State Park                                |
| 34       | Alpena        | Lake Huron              | 9  | Partridge Point                                    |
| 35       | Alpena        | Lake Huron              | 10 | Rock Port Beach                                    |
| 36       | Alpena        | Lake Huron              | 11 | Thompson Park                                      |
| 37       | Alpena        | Lake Huron              | 12 | WhiteFish Bay                                      |
|          |               |                         |    |  |
| <b>4</b> | <b>Antrim</b> | Grand Traverse Bay-East | 1  | Petobego Pond Area                                 |
| 39       | Antrim        | Lake Michigan           | 2  | Antrim County Day Park North                       |
| 40       | Antrim        | Lake Michigan           | 3  | Antrim Creek Natural Area                          |
| 41       | Antrim        | Lake Michigan           | 4  | Elk Rapids Park                                    |
| 42       | Antrim        | Lake Michigan           | 5  | Erickson Road                                      |

Appendix E.2. Great Lakes Beaches Not Monitored 2016

|          | <b>County</b>         | <b>Water Body</b>            |    | <b>Location</b>                                   |
|----------|-----------------------|------------------------------|----|---|
| 43       | Antrim                | Lake Michigan                | 6  | Lore Road End Beach                               |
| 44       | Antrim                | Lake Michigan                | 7  | Michigan Trail                                    |
| 45       | Antrim                | Lake Michigan                | 8  | Nature Preserve                                   |
| 46       | Antrim                | Lake Michigan                | 9  | North Bay Shore (Conservancy)                     |
| 47       | Antrim                | Lake Michigan                | 10 | O'Dell Road                                       |
| 48       | Antrim                | Lake Michigan                | 11 | Road Crossing near Winters Road                   |
|          |                       |                              |    |   |
| <b>5</b> | <b><u>Arenac</u></b>  | Inner Saginaw Bay            | 1  | Augres Township Park Beach                        |
| 50       | Arenac                | Inner Saginaw Bay            | 2  | Booth Road Beach                                  |
| 51       | Arenac                | Inner Saginaw Bay            | 3  | City of Au Gres Public Access                     |
| 52       | Arenac                | Inner Saginaw Bay            | 4  | Gordon Road Beach                                 |
| 53       | Arenac                | Inner Saginaw Bay            | 5  | Terrace Road                                      |
| 54       | Arenac                | Saginaw Bay                  | 6  | Whites Beach - Circle Rd Camp                     |
| 55       | Arenac                | Saginaw Bay                  | 7  | Whites Beach - Isle Rd Ramp                       |
| 56       | Arenac                | Saginaw Bay                  | 8  | Whites Beach - Point Rd - Culvert                 |
| 57       | Arenac                | Saginaw Bay                  | 9  | Whites Beach - Wenonah Rd - West Ramp             |
| 58       | Arenac                | Saginaw Bay Inner-Lake Huron | 10 | Au Sable State Forest- Greens Point               |
| 59       | Arenac                | Saginaw Bay- Lake Huron      | 11 | 16th Street Beach                                 |
| 60       | Arenac                | Saginaw Bay- Lake Huron      | 12 | 28th Street Beach                                 |
|          |                       |                              |    |   |
| <b>6</b> | <b><u>Baraga</u></b>  | Huron Bay-Lake Superior      | 1  | Arvon Township Park                               |
| 62       | Baraga                | Keweenaw Bay-Lake Superior   | 2  | Baraga State Park                                 |
| 63       | Baraga                | Keweenaw Bay-Lake Superior   | 3  | First Sand Beach                                  |
| 64       | Baraga                | Keweenaw Bay-Lake Superior   | 4  | L'Anse Township Park                              |
| 65       | Baraga                | Keweenaw Bay-Lake Superior   | 5  | Second Sands Beach                                |
| 66       | Baraga                | Lake Superior                | 6  | Keweenaw Bay Village Public Roadside              |
| 67       | Baraga                | Lake Superior                | 7  | Mouth of the Huron River                          |
| 68       | Baraga                | Lake Superior                | 8  | Public Shoreline Beach-Cooper Country             |
| 69       | Baraga                | Lake Superior                | 9  | Public Shoreline Beach-Northwest Abbaye Peninsula |
| 70       | Baraga                | Lake Superior                | 10 | Public Shoreline Beach-Point Abbaye               |
| 71       | Baraga                | Lake Superior                | 11 | Public Shoreline Beach-Sand Point                 |
|          |                       |                              |    |   |
| <b>7</b> | <b><u>Bay</u></b>     | Saginaw Bay                  | 1  | Nayanquing Point Wildlife Area                    |
|          |                       |                              |    |   |
| <b>8</b> | <b><u>Benzie</u></b>  | Lake Michigan                | 1  | Elberta Village Beach & Bluffs                    |
| 74       | Benzie                | Lake Michigan                | 2  | County Road # 669                                 |
| 75       | Benzie                | Lake Michigan                | 3  | Sleeping Bear Dunes- Otter Creek Beach            |
| 76       | Benzie                | Lake Michigan                | 4  | Platte River Point                                |
| 77       | Benzie                | Lake Michigan                | 5  | Point Betsie Lighthouse Beach                     |
| 78       | Benzie                | Lake Michigan                | 6  | Zettenberg Preserve                               |
|          |                       |                              |    |   |
| <b>9</b> | <b><u>Berrien</u></b> | Lake Michigan                | 1  | Galien River Park                                 |
| 80       | Berrien               | Lake Michigan                | 2  | Gordon Beach                                      |
| 81       | Berrien               | Lake Michigan                | 3  | Grand Mere State Park- Rosemary Beach             |
| 82       | Berrien               | Lake Michigan                | 4  | Grand Mere State Park- Shoreline Beach            |
| 83       | Berrien               | Lake Michigan                | 5  | Grand Mere State Park- Waverland Beach            |

Appendix E.2. Great Lakes Beaches Not Monitored 2016

|               | <b>County</b>     | <b>Water Body</b> |    | <b>Location</b>                             |
|---------------|-------------------|-------------------|----|---|
| 84            | Berrien           | Lake Michigan     | 6  | Harbert Beach                               |
| 85            | Berrien           | Lake Michigan     | 7  | Mizpah Park                                 |
| 86            | Berrien           | Lake Michigan     | 8  | Warren Dunes State Park North               |
|               |                   |                   |    |   |
| <b>10</b> 87  | <b>Charlevoix</b> | Lake Michigan     | 1  | Bill Wagner Memorial Campground Beach       |
| 88            | Charlevoix        | Lake Michigan     | 2  | Cables Bay Beach                            |
| 89            | Charlevoix        | Lake Michigan     | 3  | Donegal Bay                                 |
| 90            | Charlevoix        | Lake Michigan     | 4  | Harbor Beach                                |
| 91            | Charlevoix        | Lake Michigan     | 5  | Iron Ore Bay Beach                          |
| 92            | Charlevoix        | Lake Michigan     | 6  | Mt. McSauba Beach                           |
|               |                   |                   |    |   |
| <b>11</b> 93  | <b>Cheboygan</b>  | Lake Huron        | 1  | Alexander Henry Park                        |
| 94            | Cheboygan         | Lake Huron        | 2  | Cheboygan City Park                         |
| 95            | Cheboygan         | Lake Huron        | 3  | Cheboygan State Park Duncan Bay             |
| 96            | Cheboygan         | Lake Huron        | 4  | Cheboygen State Park- Lighthouse Point      |
| 97            | Cheboygan         | Lake Huron        | 5  | Ditta Park                                  |
| 98            | Cheboygan         | Lake Huron        | 6  | Huron Street Beach                          |
| 99            | Cheboygan         | Lake Huron        | 7  | Mackinaw City Beach                         |
| 100           | Cheboygan         | Lake Huron        | 8  | Mackinaw City Lighthouse Park               |
| 101           | Cheboygan         | Lake Huron        | 9  | Mill Creek Public Access                    |
| 102           | Cheboygan         | Lake Huron        | 10 | Pinewood Circle Road End Beach              |
| 103           | Cheboygan         | Lake Huron        | 11 | Roadside Park MDOT, US-23                   |
| 104           | Cheboygan         | Lake Huron        | 12 | Stoney Point Road End Beach                 |
| 105           | Cheboygan         | Lake Huron        | 13 | Wawatam City Park                           |
|               |                   |                   |    |   |
| <b>12</b> 106 | <b>Chippewa</b>   | Lake Huron        | 1  | Bass Cove Beach-Drummond Island             |
| 107           | Chippewa          | Lake Huron        | 2  | Betsey Seaman Memorial Park-Drummond        |
| 108           | Chippewa          | Lake Huron        | 3  | Big Shoal Cove                              |
| 109           | Chippewa          | Lake Huron        | 4  | De Tour State Park Shoreline Beach          |
| 110           | Chippewa          | Lake Huron        | 5  | Detour Albany Beach                         |
| 111           | Chippewa          | Lake Huron        | 6  | Drummond Island Township Park               |
| 112           | Chippewa          | Lake Huron        | 7  | Sand Bay Beach-Drummond Island              |
| 113           | Chippewa          | Lake Superior     | 8  | Back Bay Boat Launch                        |
| 114           | Chippewa          | Lake Superior     | 9  | Bayview Campground                          |
| 115           | Chippewa          | Lake Superior     | 10 | Big Pines Day Use Area                      |
| 116           | Chippewa          | Lake Superior     | 11 | Hiawatha National Forest- Nodoway Point     |
| 117           | Chippewa          | Lake Superior     | 12 | Hiawatha National Forest- North of Big Pine |
| 118           | Chippewa          | Lake Superior     | 13 | Hiawatha National Forest- Pendills Bay      |
| 119           | Chippewa          | Lake Superior     | 14 | Hiawatha National Forest- Pendills Lake     |
| 120           | Chippewa          | Lake Superior     | 15 | Hiawatha National Forest- Point Iroquois    |
| 121           | Chippewa          | Lake Superior     | 16 | Hiawatha National Forest- Tahquamenon       |
| 122           | Chippewa          | Lake Superior     | 17 | Hiawatha National Forest- West of Salt      |
| 123           | Chippewa          | Lake Superior     | 18 | Pendills Beach                              |
| 124           | Chippewa          | Lake Superior     | 19 | Public Shoreline Beach-Browns Creek Area    |
| 125           | Chippewa          | Lake Superior     | 20 | Public Shoreline Beach-Marsh Lake Area      |
| 126           | Chippewa          | Lake Superior     | 21 | Public Shoreline Beach-Northwest of Two     |

Appendix E.2. Great Lakes Beaches Not Monitored 2016

|           | <b>County</b> | <b>Water Body</b> |    | <b>Location</b>                                  |
|-----------|---------------|-------------------|----|--|
| 127       | Chippewa      | Lake Superior     | 22 | Public Shoreline Beach-Weatherhog Lake East Area |
| 128       | Chippewa      | Lake Superior     | 23 | Public Shoreline Beach-Weatherhog Lake           |
| 129       | Chippewa      | Lake Superior     | 24 | Public Shoreline Beach-West of Whitefish         |
| 130       | Chippewa      | Lake Superior     | 25 | Superior Township Public Access                  |
| 131       | Chippewa      | Lake Superior     | 26 | Tahquamenon Falls State Park-River Mouth         |
| 132       | Chippewa      | St. Mary's River  | 27 | Dunbar Park                                      |
| 133       | Chippewa      | St. Mary's River  | 28 | Hiawatha National Forest- North Pond             |
| 134       | Chippewa      | St. Mary's River  | 29 | Hiawatha National Forest- Waiska Bay             |
| 135       | Chippewa      | St. Mary's River  | 30 | Lake Superior State Forest- Munuscong            |
| 136       | Chippewa      | St. Mary's River  | 31 | Public Shoreline Beach-Brush Point               |
| 137       | Chippewa      | St. Mary's River  | 32 | Public Shoreline Beach-Point Aux Frenes          |
| 138       | Chippewa      | St. Mary's River  | 33 | Public Shoreline Beach-Raber Bay stretch         |
| 139       | Chippewa      | St. Mary's River  | 34 | Wilderness Beach                                 |
| 140       | Chippewa      | Lake Superior     | 35 | Whitefish Bay picnic area                        |
|           |               |                   |    |  |
| <b>13</b> | <b>Delta</b>  | Fishdam River     | 1  | Big Bay De Noc/Fishdam River Public              |
| 142       | Delta         | Lake Michigan     | 2  | Fayette State Park                               |
| 143       | Delta         | Lake Michigan     | 3  | Fuller Park                                      |
| 144       | Delta         | Lake Michigan     | 4  | Little Bay De Noc Public Beach Access            |
| 145       | Delta         | Lake Michigan     | 5  | Portage Bay Forest Campground                    |
| 146       | Delta         | Lake Michigan     | 6  | Public Shoreline Beach-Charboneau Point          |
| 147       | Delta         | Lake Michigan     | 7  | Public Shoreline Beach-County Road 481           |
| 148       | Delta         | Lake Michigan     | 8  | Public Shoreline Beach-East Wilsey Bay           |
| 149       | Delta         | Lake Michigan     | 9  | Public Shoreline Beach-Fishdam River             |
| 150       | Delta         | Lake Michigan     | 10 | Public Shoreline Beach-Gilnet Haven              |
| 151       | Delta         | Lake Michigan     | 11 | Public Shoreline Beach-Indian Point              |
| 152       | Delta         | Lake Michigan     | 12 | Public Shoreline Beach-Indian Town Lake          |
| 153       | Delta         | Lake Michigan     | 13 | Public Shoreline Beach-Jacks Bluff               |
| 154       | Delta         | Lake Michigan     | 14 | Public Shoreline Beach-Martin Bay                |
| 155       | Delta         | Lake Michigan     | 15 | Public Shoreline Beach-Nahma                     |
| 156       | Delta         | Lake Michigan     | 16 | Public Shoreline Beach-North End of Gregg        |
| 157       | Delta         | Lake Michigan     | 17 | Public Shoreline Beach-North of Stonington       |
| 158       | Delta         | Lake Michigan     | 18 | Public Shoreline Beach-Ogontz Bay                |
| 159       | Delta         | Lake Michigan     | 19 | Public Shoreline Beach-Peninsula Point           |
| 160       | Delta         | Lake Michigan     | 20 | Public Shoreline Beach-Point Detour              |
| 161       | Delta         | Lake Michigan     | 21 | Public Shoreline Beach-Portage Bay               |
| 162       | Delta         | Lake Michigan     | 22 | Public Shoreline Beach-Portage Peninsula         |
| 163       | Delta         | Lake Michigan     | 23 | Public Shoreline Beach-St. Vital's Island        |
| 164       | Delta         | Lake Michigan     | 24 | Public Shoreline Beach-USFS West Wilsey          |
| 165       | Delta         | Lake Michigan     | 25 | Public Shoreline Beach-West Side of Gregg        |
| 166       | Delta         | Lake Michigan     | 26 | Sac Bay County Park                              |
| 167       | Delta         | Lake Michigan     | 27 | Twin Springs Campground and Bathing              |
|           |               |                   |    |  |
| <b>14</b> | <b>Emmet</b>  | Lake Michigan     | 1  | Bliss Township Beach                             |
| 169       | Emmet         | Lake Michigan     | 2  | Church Beach                                     |
| 170       | Emmet         | Lake Michigan     | 3  | Colonial Michilimackinac State Park              |

Appendix E.2. Great Lakes Beaches Not Monitored 2016

|               | <b>County</b>         | <b>Water Body</b>                        |    | <b>Location</b>                                    |
|---------------|-----------------------|--|----|--|
| 171           | Emmet                 | Lake Michigan                            | 4  | Forest Beach                                       |
| 172           | Emmet                 | Lake Michigan                            | 5  | Petoskey Harbor                                    |
| 173           | Emmet                 | Lake Michigan                            | 6  | The Headlands County Park                          |
| 174           | Emmet                 | Lake Michigan                            | 7  | Thorne Swift Preserve                              |
| 175           | Emmet                 | Lake Michigan                            | 8  | Wilderness State Park-East of the Beach            |
| 176           | Emmet                 | Lake Michigan                            | 9  | Wilderness State Park-Sturgeon Bay                 |
| 177           | Emmet                 | Lake Michigan                            | 10 | Wilderness State Park-West of Beach                |
|               |                       |  |    |  |
| <b>15</b> 178 | <b>Gogebic</b>        | Lake Superior                            | 1  | Black River Harbor Beach                           |
| 179           | Gogebic               | Lake Superior                            | 2  | Little Girls Point Park                            |
| 180           | Gogebic               | Lake Superior                            | 3  | Mouth of the Montreal River                        |
| 181           | Gogebic               | Lake Superior                            | 4  | Porcupine Mountain State Park-North                |
| 182           | Gogebic               | Lake Superior                            | 5  | Presque Isle Beach                                 |
| 183           | Gogebic               | Lake Superior                            | 6  | Presque Isle State Campground                      |
| 184           | Gogebic               | Lake Superior                            | 7  | Public Shoreline Beach-West of Black River         |
|               |                       |  |    |  |
| <b>16</b> 185 | <b>Grand Traverse</b> | Grand Traverse Bay                       | 1  | Archie Park  |
| 186           | Grand Traverse        | Grand Traverse Bay                       | 2  | Old Mission - Center Road Natural Area             |
| 187           | Grand Traverse        | Grand Traverse Bay                       | 3  | Old Mission - MDOT Right of Way-South of           |
| 188           | Grand Traverse        | Grand Traverse Bay                       | 4  | Old Mission - Old Mission Point State Park         |
| 189           | Grand Traverse        | Grand Traverse Bay-East                  | 5  | Acme Roadside Park (DNR)                           |
| 190           | Grand Traverse        | Grand Traverse Bay-East                  | 6  | Acme Roadside Park and Beach MDOT                  |
| 191           | Grand Traverse        | Grand Traverse Bay-East                  | 7  | Deep Water Point                                   |
| 192           | Grand Traverse        | Grand Traverse Bay-East                  | 8  | East Bay Township Four Mile Road                   |
| 193           | Grand Traverse        | Grand Traverse Bay-East                  | 9  | Yuba Beach   |
| 194           | Grand Traverse        | Grand Traverse Bay-Old Mission Peninsula | 10 | Bowers Harbor Public Access                        |
| 195           | Grand Traverse        | Grand Traverse Bay-Old Mission Peninsula | 11 | DNR Launch/Beach Center Road                       |
| 196           | Grand Traverse        | Grand Traverse Bay-Old Mission Peninsula | 12 | Haserot Beach                                      |
| 197           | Grand Traverse        | Grand Traverse Bay-Old Mission Peninsula | 13 | Kroupa Road Access M-22 South of Crain Hill Road   |
| 198           | Grand Traverse        | Grand Traverse Bay-Old Mission Peninsula | 14 | Leffingwell Point Beach                            |
| 199           | Grand Traverse        | Grand Traverse Bay-Old Mission Peninsula | 15 | Old Mission Lighthouse                             |
| 200           | Grand Traverse        | Grand Traverse Bay-Old Mission Peninsula | 16 | Old Mission Peninsula Twp Park-East of Light House |
| 201           | Grand Traverse        | Grand Traverse Bay-Old Mission Peninsula | 17 | Old Mission Peninsula Twp Park-West of Light House |
| 202           | Grand Traverse        | Grand Traverse Bay-Old Mission Peninsula | 18 | Old Mission Road                                   |
| 203           | Grand Traverse        | Grand Traverse Bay-Old Mission Peninsula | 19 | Peninsula Volunteer Fire Station Point #2          |
| 204           | Grand Traverse        | Grand Traverse Bay-Old Mission Peninsula | 20 | Swaney Road  |
| 205           | Grand Traverse        | Grand Traverse Bay-West                  | 21 | Mouth of Boardman                                  |

Appendix E.2. Great Lakes Beaches Not Monitored 2016

|               | <b>County</b>   | <b>Water Body</b>                 |    | <b>Location</b>                            |
|---------------|-----------------|-----------------------------------|----|--|
| 206           | Grand Traverse  | Grand Traverse Bay-West           | 22 | Power Island Bay Park                      |
| 207           | Grand Traverse  | Grand Traverse Bay-West           | 23 | Rose Street Access at Peninsula Drive      |
|               |                 |                                   |    |  |
| <b>17</b> 208 | <b>Houghton</b> | Lake Superior                     | 1  | Calument Waterworks Beach                  |
| 209           | Houghton        | Lake Superior                     | 2  | Mink Farm                                  |
| 210           | Houghton        | Lake Superior                     | 3  | Public Shoreline Beach-Le Chance Creek     |
| 211           | Houghton        | Lake Superior                     | 4  | Public Shoreline Beach-Mc Lain State Park  |
| 212           | Houghton        | Lake Superior                     | 5  | Public Shoreline Beach-S. of Portage Entry |
| 213           | Houghton        | Lake Superior                     | 6  | Public Shoreline Beach-Southwest County    |
| 214           | Houghton        | Lake Superior                     | 7  | White City                                 |
|               |                 |                                   |    |  |
| <b>18</b> 215 | <b>Huron</b>    | Lake Huron                        | 1  | County Road End                            |
| 216           | Huron           | Lake Huron                        | 2  | Geiger Road Public Access                  |
| 217           | Huron           | Lake Huron                        | 3  | Grindstone Public Access                   |
| 218           | Huron           | Lake Huron                        | 4  | Harbor Beach Marina                        |
| 219           | Huron           | Lake Huron                        | 5  | Helena Road End                            |
| 220           | Huron           | Lake Huron                        | 6  | Kinch Road End                             |
| 221           | Huron           | Lake Huron                        | 7  | Larned Road End                            |
| 222           | Huron           | Lake Huron                        | 8  | Lighthouse County Park-South               |
| 223           | Huron           | Lake Huron                        | 9  | Mud Creek Public Access                    |
| 224           | Huron           | Lake Huron                        | 10 | Stafford County Park                       |
| 225           | Huron           | Lake Huron                        | 11 | Wagener County Park                        |
|               |                 |                                   |    |  |
| <b>19</b> 226 | <b>Iosco</b>    | Lake Huron                        | 1  | Alabaster Township-Alabaster Road          |
| 227           | Iosco           | Lake Huron                        | 2  | Au Sable Point Beach                       |
| 228           | Iosco           | Lake Huron                        | 3  | Interlake Road                             |
| 229           | Iosco           | Lake Huron                        | 4  | Lake To Lake Road                          |
| 230           | Iosco           | Lake Huron                        | 5  | Tawas Point State Park-Central             |
| 231           | Iosco           | Lake Huron (Tawas Bay)            | 6  | County Road End off Tawas Beach Road       |
| 232           | Iosco           | Lake Huron (Tawas Bay)            | 7  | MDNR Access E. Tawas - Boat Launch         |
|               |                 |                                   |    |  |
| <b>20</b> 233 | <b>Keweenaw</b> | Lake Superior at Bete de Gris Bay | 1  | Bete de Gris Beach                         |
| 234           | Keweenaw        | Lake Superior                     | 2  | Brunette Park                              |
| 235           | Keweenaw        | Lake Superior                     | 3  | Cat Harbor Beach                           |
| 236           | Keweenaw        | Lake Superior                     | 4  | Cooper Harbor Lighthouse Complex           |
| 237           | Keweenaw        | Lake Superior                     | 5  | Fort Wilkins State Park                    |
| 238           | Keweenaw        | Lake Superior                     | 6  | Fort Wilkins State Park-East               |
| 239           | Keweenaw        | Lake Superior                     | 7  | Fort Wilkins State Park-West               |
| 240           | Keweenaw        | Lake Superior                     | 8  | Great Sands Bay Beach                      |
| 241           | Keweenaw        | Lake Superior                     | 9  | Mouth of the Gratiot River Beach           |
| 242           | Keweenaw        | Lake Superior                     | 10 | Point Isabelle Beach                       |
| 243           | Keweenaw        | Lake Superior                     | 11 | Public Shoreline Beach-Big Traverse Bay    |
| 244           | Keweenaw        | Lake Superior                     | 12 | Public Shoreline Beach-Gay Park            |
|               |                 |                                   |    |  |
| <b>21</b> 245 | <b>Leelanau</b> | Grand Traverse Bay                | 1  | Boughy Park and Beach                      |
| 246           | Leelanau        | Grand Traverse Bay-West           | 2  | Cathead Bay, Leelanau State Park           |

Appendix E.2. Great Lakes Beaches Not Monitored 2016

|               | <b>County</b> | <b>Water Body</b>       |    | <b>Location</b>   |
|---------------|---------------|-------------------------|----|---|
| 247           | Leelanau      | Grand Traverse Bay-West | 3  | Christmas Cove  |
| 248           | Leelanau      | Grand Traverse Bay-West | 4  | Graham Green Park   |
| 249           | Leelanau      | Grand Traverse Bay-West | 5  | Hendryx County Roadside Park                                    |
| 250           | Leelanau      | Grand Traverse Bay-West | 6  | M-22 at M-72 Public Access                                      |
| 251           | Leelanau      | Grand Traverse Bay-West | 7  | MDOT Roadside Park and Beach                                    |
| 252           | Leelanau      | Grand Traverse Bay-West | 8  | MDOT Roadside Park and Beach M-22<br>North of Cherry Bend Drive |
| 253           | Leelanau      | Grand Traverse Bay-West | 9  | Northport 4th Street Beach                                      |
| 254           | Leelanau      | Grand Traverse Bay-West | 10 | Northport 5th Street Beach                                      |
| 255           | Leelanau      | Grand Traverse Bay-West | 11 | Northport 7th Street Beach                                      |
| 256           | Leelanau      | Grand Traverse Bay-West | 12 | Northport Haserot Beach, Rose Street                            |
| 257           | Leelanau      | Grand Traverse Bay-West | 13 | Stoney Point County Roadside Park                               |
| 258           | Leelanau      | Grand Traverse Bay-West | 14 | Suttons Bay North Shore Park                                    |
| 259           | Leelanau      | Lake Michigan           | 15 | Bay Front Park  |
| 260           | Leelanau      | Lake Michigan           | 16 | Cedar Street Beach  |
| 261           | Leelanau      | Lake Michigan           | 17 | G. Marsten Dame Marina  |
| 262           | Leelanau      | Lake Michigan           | 18 | Gils Pier   |
| 263           | Leelanau      | Lake Michigan           | 19 | Glen Arbor/Manitou Boulevard Beach                              |
| 264           | Leelanau      | Lake Michigan           | 20 | Lake Street Beach, Glen Arbor                                   |
| 265           | Leelanau      | Lake Michigan           | 21 | Leelanau State Park, Lighthouse                                 |
| 266           | Leelanau      | Lake Michigan           | 22 | Leland Harbor   |
| 267           | Leelanau      | Lake Michigan           | 23 | North Bar   |
| 268           | Leelanau      | Lake Michigan           | 24 | North Street Beach  |
| 269           | Leelanau      | Lake Michigan           | 25 | Peterson Park   |
| 270           | Leelanau      | Lake Michigan           | 26 | Reynolds Street Beach   |
| 271           | Leelanau      | Lake Michigan           | 27 | Smith Street Beach Northport                                    |
| 272           | Leelanau      | Lake Michigan           | 28 | Thompson Street Beach   |
| 273           | Leelanau      | Shalda Creek            | 29 | Sleeping Bear Dunes -Shalda Creek                               |
|               |               |                         |    |   |
| <b>22</b> 274 | <b>Luce</b>   | Lake Superior           | 1  | Blind Sucker River #1   |
| 275           | Luce          | Lake Superior           | 2  | Blind Sucker River #2   |
| 276           | Luce          | Lake Superior           | 3  | Crisp Point Lighthouse  |
| 277           | Luce          | Lake Superior           | 4  | Lake Superior Campground Beach                                  |
| 278           | Luce          | Lake Superior           | 5  | Mouth of the Two Hearted River                                  |
| 279           | Luce          | Lake Superior           | 6  | Public Shoreline Beach-Blind Sucker                             |
| 280           | Luce          | Lake Superior           | 7  | Public Shoreline Beach-Coast Guard Line                         |
| 281           | Luce          | Lake Superior           | 8  | Public Shoreline Beach-County Road 407                          |
| 282           | Luce          | Lake Superior           | 9  | Public Shoreline Beach-County Road 412<br>and Crisp Point       |
| 283           | Luce          | Lake Superior           | 10 | Public Shoreline Beach-Little Sucker/Two<br>Hearted River       |
| 284           | Luce          | Lake Superior           | 11 | Public Shoreline Beach-Three Mile Creek                         |
| 285           | Luce          | Lake Superior           | 12 | Public Shoreline Beach-West County Border                       |
| 286           | Luce          | Lake Superior           | 13 | Unnamed Road End #1   |
| 287           | Luce          | Lake Superior           | 14 | Unnamed Road End #2   |
| 288           | Luce          | Lake Superior           | 15 | Unnamed Road End #3   |
|               |               |                         |    |   |

Appendix E.2. Great Lakes Beaches Not Monitored 2016

|               | <b>County</b>           | <b>Water Body</b> |    | <b>Location</b>                                    |
|---------------|-------------------------|-------------------|----|--|
| <b>23</b> 289 | <b><u>Mackinac</u></b>  | Lake Huron        | 1  | American Legion Memorial Park                      |
| 290           | Mackinac                | Lake Huron        | 2  | Antoine Road End                                   |
| 291           | Mackinac                | Lake Huron        | 3  | Boot Island  |
| 292           | Mackinac                | Lake Huron        | 4  | Coast Guard Pier Boat Launch and City              |
| 293           | Mackinac                | Lake Huron        | 5  | Foley Creek Campground                             |
| 294           | Mackinac                | Lake Huron        | 6  | Government Island-Hiawatha National                |
| 295           | Mackinac                | Lake Huron        | 7  | Harbour Light                                      |
| 296           | Mackinac                | Lake Huron        | 8  | Hazelton Road End                                  |
| 297           | Mackinac                | Lake Huron        | 9  | Hiawatha National Forest- Carp River               |
| 298           | Mackinac                | Lake Huron        | 10 | Horseshoe Bay Wilderness-North                     |
| 299           | Mackinac                | Lake Huron        | 11 | Horseshoe Bay Wilderness-South                     |
| 300           | Mackinac                | Lake Michigan     | 12 | Big Knob State Forest Campground                   |
| 301           | Mackinac                | Lake Michigan     | 13 | Black River State Forest Campground                |
| 302           | Mackinac                | Lake Michigan     | 14 | Epoufette Bay Campground                           |
| 303           | Mackinac                | Lake Michigan     | 15 | Hog Island Campground                              |
| 304           | Mackinac                | Lake Michigan     | 16 | Lake Michigan US-2 Campground Beach                |
| 305           | Mackinac                | Lake Michigan     | 17 | MDOT Overlook                                      |
| 306           | Mackinac                | Lake Michigan     | 18 | MDOT Roadside Park on US-2                         |
| 307           | Mackinac                | Lake Michigan     | 19 | Mouth of Cut River Roadside Beach                  |
| 308           | Mackinac                | Lake Michigan     | 20 | Naubinway Bay Access                               |
| 309           | Mackinac                | Lake Michigan     | 21 | Public Shoreline Beach #2-Little Hog Island        |
| 310           | Mackinac                | Lake Michigan     | 22 | Public Shoreline Beach #2-Manitou Paymen Highbanks |
| 311           | Mackinac                | Lake Michigan     | 23 | Public Shoreline Beach #3-Little Hog Island        |
| 312           | Mackinac                | Lake Michigan     | 24 | Public Shoreline Beach #4-Little Hog Island        |
| 313           | Mackinac                | Lake Michigan     | 25 | Public Shoreline Beach #5-Little Hog Island        |
| 314           | Mackinac                | Lake Michigan     | 26 | Public Shoreline Beach-Epoufette Bay               |
| 315           | Mackinac                | Lake Michigan     | 27 | Public Shoreline Beach-Fox Point Area              |
| 316           | Mackinac                | Lake Michigan     | 28 | Public Shoreline Beach-Little Hog Island           |
| 317           | Mackinac                | Lake Michigan     | 29 | Public Shoreline Beach-Manitou Paymen Highbanks    |
| 318           | Mackinac                | Lake Michigan     | 30 | Public Shoreline Beach-MDNR Matrix Point           |
| 319           | Mackinac                | Lake Michigan     | 31 | Public Shoreline Beach-Morean Township, Section 25 |
| 320           | Mackinac                | Lake Michigan     | 32 | Public Shoreline Beach-Naubinway Area              |
| 321           | Mackinac                | Lake Michigan     | 33 | Public Shoreline Beach-Pointe Aux Chenes           |
| 322           | Mackinac                | Lake Michigan     | 34 | Public Shoreline Beach-Seiners Point               |
| 323           | Mackinac                | Lake Michigan     | 35 | Public Shoreline Beach-South of Brevort            |
| 324           | Mackinac                | Lake Michigan     | 36 | Public Shoreline Beach-State Forest Matrix         |
| 325           | Mackinac                | Lake Michigan     | 37 | Sand Point   |
| 326           | Mackinac                | Lake Michigan     | 38 | State Roadside Park Beach                          |
| 327           | Mackinac                | Lake Huron        | 39 | Straits State Park                                 |
|               |                         |                   |    |  |
| <b>24</b> 328 | <b><u>Manistee</u></b>  | Lake Michigan     | 1  | Portage Park                                       |
|               |                         |                   |    |  |
| <b>25</b> 329 | <b><u>Marquette</u></b> | Lake Superior     | 1  | Public Shoreline Beach-Big Huron River             |
| 330           | Marquette               | Lake Superior     | 2  | Public Shoreline Beach-Little Presque Isle         |

Appendix E.2. Great Lakes Beaches Not Monitored 2016

|           | <b>County</b> | <b>Water Body</b>   |                           | <b>Location</b> |   |
|-----------|---------------|---------------------|---------------------------|-----------------|---|
| <b>26</b> | <b>331</b>    | <b>Mason</b>        | Lake Michigan             | 1               | Ludington State Park Public Shoreline                 |
|           | 332           | Mason               | Lake Michigan             | 2               | Ludington State Park Public Shoreline                 |
|           | 333           | Mason               | Lake Michigan             | 3               | Manistee National Forest Campground                   |
|           | 334           | Mason               | Lake Michigan             | 4               | Manistee National Forest-Public Shoreline Beach North |
|           | 335           | Mason               | Lake Michigan             | 5               | Manistee National Forest-Public Shoreline Beach South |
|           | 336           | Mason               | Lake Michigan             | 6               | Pere Marquette Harbor                                 |
| <b>27</b> | <b>337</b>    | <b>Menominee</b>    | Lake Michigan             | 1               | Airport Park  |
|           | 338           | Menominee           | Lake Michigan             | 2               | Fox Park  |
|           | 339           | Menominee           | Lake Michigan             | 3               | Klienke Park  |
|           | 340           | Menominee           | Lake Michigan             | 4               | Public Shoreline Beach-Cedar River                    |
|           | 341           | Menominee           | Lake Michigan             | 5               | Public Shoreline Beach-Fox village                    |
|           | 342           | Menominee           | Lake Michigan             | 6               | Wells State Park                                      |
| <b>28</b> | <b>343</b>    | <b>Oceana</b>       | Lake Michigan             | 1               | Cedar Point County Park                               |
|           | 344           | Oceana              | Lake Michigan             | 2               | Silver Lake State Park                                |
|           | 345           | Oceana              | Silver Lake-Lake Michigan | 3               | Silver Creek Channel                                  |
| <b>29</b> | <b>346</b>    | <b>Ontonagon</b>    | Lake Superior             | 1               | Green Park  |
|           | 347           | Ontonagon           | Lake Superior             | 2               | Gull Point Beach                                      |
|           | 348           | Ontonagon           | Lake Superior             | 3               | Mouth of the Big Iron River Beach                     |
|           | 349           | Ontonagon           | Lake Superior             | 4               | Porcupine Mountain State Park                         |
|           | 350           | Ontonagon           | Lake Superior             | 5               | Porcupine Mountains Wilderness State Park             |
|           | 351           | Ontonagon           | Lake Superior             | 6               | Public Shoreline Beach-Misery Bay                     |
|           | 352           | Ontonagon           | Lake Superior             | 7               | Public Shoreline Beach-Sleeping Bay                   |
|           | 353           | Ontonagon           | Lake Superior             | 8               | Public Shoreline Beach-Wolf Point                     |
|           | 354           | Ontonagon           | Lake Superior             | 9               | Union Bay Beach                                       |
| <b>30</b> | <b>355</b>    | <b>Ottawa</b>       | Lake Michigan             | 1               | Kouw Park   |
|           | 356           | Ottawa              | Lake Michigan             | 2               | Mountain Beach  |
|           | 357           | Ottawa              | Lake Michigan             | 3               | P.J. Hoffmaster State Park- Shoreline                 |
|           | 358           | Ottawa              | Lake Michigan             | 4               | Kirk Park   |
|           | 359           | Ottawa              | Lake Michigan             | 5               | North Beach Park                                      |
|           | 360           | Ottawa              | Lake Michigan             | 6               | Rosy Mound Recreation Area                            |
| <b>31</b> | <b>361</b>    | <b>Presque Isle</b> | Lake Huron                | 1               | 40 Mile Point Park                                    |
|           | 362           | Presque Isle        | Lake Huron                | 2               | Ball Diamond Park                                     |
|           | 363           | Presque Isle        | Lake Huron                | 3               | Bell Bay  |
|           | 364           | Presque Isle        | Lake Huron                | 4               | Evergreen Beach                                       |
|           | 365           | Presque Isle        | Lake Huron                | 5               | Golden Beach  |
|           | 366           | Presque Isle        | Lake Huron                | 6               | Grace Access Site                                     |
|           | 367           | Presque Isle        | Lake Huron                | 7               | Hammond Bay Access Site                               |
|           | 368           | Presque Isle        | Lake Huron                | 8               | Hammond Bay Harbor                                    |
|           | 369           | Presque Isle        | Lake Huron                | 9               | Hoeft State Park-North                                |
|           | 370           | Presque Isle        | Lake Huron                | 10              | Hoeft State Park-South                                |

Appendix E.2. Great Lakes Beaches Not Monitored 2016

|           | <b>County</b>      | <b>Water Body</b> |    | <b>Location</b>                           |
|-----------|--------------------|-------------------|----|---|
| 371       | Presque Isle       | Lake Huron        | 11 | Lakeside Park in Rogers City              |
| 372       | Presque Isle       | Lake Huron        | 12 | Lakeview Park Beach                       |
| 373       | Presque Isle       | Lake Huron        | 13 | Manitou Beach                             |
| 374       | Presque Isle       | Lake Huron        | 14 | New Lighthouse Park                       |
| 375       | Presque Isle       | Lake Huron        | 15 | Presque Isle Harbor                       |
| 376       | Presque Isle       | Lake Huron        | 16 | Presque Isle Harbor Beach                 |
| 377       | Presque Isle       | Lake Huron        | 17 | Public Shoreline Beach-False Presque Isle |
| 378       | Presque Isle       | Lake Huron        | 18 | Seagull Point Park                        |
| 379       | Presque Isle       | Lake Huron        | 19 | Thompson's Harbor State Park              |
| 380       | Presque Isle       | Lake Huron        | 20 | US-23 Hammond Bay                         |
| 381       | Presque Isle       | Lake Huron        | 21 | US-23 Roger City                          |
| 382       | Presque Isle       | Lake Huron        | 22 | Lakeside Park Beach                       |
|           |                    |                   |    |   |
| <b>32</b> | <b>Sanilac</b>     | Lake Huron        | 1  | Birch Beach                               |
| 384       | Sanilac            | Lake Huron        | 2  | Birch Beach Middle #2                     |
| 385       | Sanilac            | Lake Huron        | 3  | Birch Beach North #3                      |
| 386       | Sanilac            | Lake Huron        | 4  | Delaware Park                             |
| 387       | Sanilac            | Lake Huron        | 5  | Great Lakes Beach                         |
| 388       | Sanilac            | Lake Huron        | 6  | Great Lakes Beach #1                      |
| 389       | Sanilac            | Lake Huron        | 7  | Sanilac County Park #4                    |
| 390       | Sanilac            | Lake Huron        | 8  | Sanilac County Roadside Park #1           |
| 391       | Sanilac            | Lake Huron        | 9  | Blue Water Beach                          |
|           |                    |                   |    |   |
| <b>33</b> | <b>Schoolcraft</b> | Lake Michigan     | 1  | Doyle Township Access                     |
| 393       | Schoolcraft        | Lake Michigan     | 2  | Goudreau's Harbor Seul Choix Point-Boat   |
| 394       | Schoolcraft        | Lake Michigan     | 3  | Lakeview Park                             |
| 395       | Schoolcraft        | Lake Michigan     | 4  | Manistique Township Park                  |
| 396       | Schoolcraft        | Lake Michigan     | 5  | Public Shoreline Beach-South of McDonald  |
| 397       | Schoolcraft        | Lake Michigan     | 6  | Public Shoreline Beach-Thompson Village   |
| 398       | Schoolcraft        | Lake Michigan     | 7  | Roadside Park Beach                       |
|           |                    |                   |    |   |
| <b>34</b> | <b>St. Clair</b>   | Lake Huron        | 1  | Burthville Township Park                  |
| 400       | St. Clair          | Lake Huron        | 2  | Jeddo Road Beach                          |
| 401       | St. Clair          | Lake Huron        | 3  | Krafft Road Beach                         |
| 402       | St. Clair          | Lake Huron        | 4  | Lakeport State Park                       |
| 403       | St. Clair          | Lake Huron        | 5  | Metcalf Road Beach                        |
| 404       | St. Clair          | Lake Huron        | 6  | Washington Street Park                    |
| 405       | St. Clair          | St. Clair River   | 7  | Marine City Diving Area                   |

Appendix F.1. Daily Water Samples from Inland Lake Beaches that Exceeded Michigan's WQS.

|           | <b>County</b>           |   | <b>Location</b>                                 | <b>Sampling Date</b> | <b><i>E. coli</i> Test Results</b> |
|-----------|-------------------------|---|---|----------------------|------------------------------------|
| <b>1</b>  | <b><u>Antrim</u></b>    | 1 | Thurston Park                                   | 8/17/16              | 1046.2                             |
|           | Antrim                  | 2 | Richard Park                                    | 8/17/16              | 579.4                              |
| <b>2</b>  | <b><u>Barry</u></b>     | 1 | Charlton Park                                   | 8/22/16              | 394.0795                           |
|           | Barry                   | 2 | Charlton Park                                   | 8/29/16              | 355.8368                           |
| <b>3</b>  | <b><u>Bay</u></b>       |   | Vet's Park North Bay City- Saginaw River        | 8/17/16              | 410.602                            |
| <b>4</b>  | <b><u>Benzie</u></b>    | 1 | Beulah Beach                                    | 8/17/16              | 457                                |
| <b>5</b>  | <b><u>Clare</u></b>     | 1 | Wilson State Park                               | 7/7/16               | 1143.639                           |
| <b>6</b>  | <b><u>Chippewa</u></b>  | 1 | Kinross Lake                                    | 8/17/16              | 1633.768                           |
| <b>7</b>  | <b><u>Emmet</u></b>     | 1 | Camp Petosega                                   | 7/26/16              | 2419.6                             |
| <b>8</b>  | <b><u>Isabella</u></b>  | 1 | Herrick County Park                             | 8/24/16              | 1644.262                           |
|           | <b><u>Isabella</u></b>  | 2 | Deerfield County Park                           | 8/16/16              | 590.4156                           |
| <b>9</b>  | <b><u>Kalamazoo</u></b> | 1 | Sunset Lake Park                                | 6/29/16              | 2265.569                           |
|           | Kalamazoo               | 2 | Sunset Lake Park                                | 6/6/16               | 668.3849                           |
|           | Kalamazoo               | 3 | Sunset Lake Park                                | 6/20/16              | 600.3207                           |
|           | Kalamazoo               | 4 | Sunset Lake Park                                | 6/27/16              | 579.3166                           |
|           | Kalamazoo               | 5 | Sunset Lake Park                                | 6/7/16               | 512.9062                           |
|           | Kalamazoo               | 6 | Sunset Lake Park                                | 6/22/16              | 461.279                            |
|           | Kalamazoo               | 7 | Sunset Lake Park                                | 6/8/16               | 454.0618                           |
| <b>10</b> | <b><u>Leelanau</u></b>  | 1 | Good Harbor Creek Outlet                        | 8/16/16              | 1327                               |
|           | Leelanau                | 2 | Good Harbor Creek Outlet                        | 6/29/16              | 1146                               |
| <b>11</b> | <b><u>Macomb</u></b>    | 1 | Stony Creek Metropark-Baypoint Beach            | 8/31/16              | 410.53                             |
|           | Macomb                  | 2 | Stony Creek Metropark-Baypoint Beach            | 8/24/16              | 320.09                             |
| <b>12</b> | <b><u>Oakland</u></b>   | 1 | Dodge Park #4                                   | 8/10/16              | 656                                |
|           | Oakland                 | 2 | Dodge Park #4                                   | 8/3/16               | 590                                |
|           | Oakland                 | 3 | Log Cabin Sub.                                  | 6/7/16               | 526                                |
|           | Oakland                 | 4 | Christ the King Church Camp                     | 7/25/16              | 320                                |
|           | Oakland                 | 5 | Davisburg Village Beach (Hart Community Center) | 7/13/16              | 1684                               |
|           | Oakland                 | 6 | Davisburg Village Beach (Hart Community Center) | 7/14/16              | 347                                |
|           | Oakland                 | 7 | Pontiac Recreation Area                         | 8/2/16               | 359                                |
|           | Oakland                 | 8 | Scotch Lake Residents                           | 7/6/16               | 461                                |

Appendix F.1. Daily Water Samples from Inland Lake Beaches that Exceeded Michigan's WQS.

|           | <b>County</b>             |    | <b>Location</b>                                   | <b>Sampling Date</b> | <b>E. coli Test Results</b> |
|-----------|---------------------------|----|---|----------------------|-----------------------------|
| 31        | Oakland                   | 9  | Scotch Lake Residents                             | 6/7/16               | 373                         |
| 32        | Oakland                   | 10 | Teeple Lake Recreation Area - Highland State Park | 8/1/16               | 332                         |
| 33        | Oakland                   | 11 | Woodhull Lake Civic Association                   | 6/8/16               | 338                         |
| 34        | Oakland                   | 12 | Fox Bay Civic Association                         | 6/6/16               | 325                         |
| 35        | Oakland                   | 13 | Fox Bay Civic Association                         | 6/20/16              | 338                         |
| 36        | Oakland                   | 14 | Fox Bay Civic Association                         | 6/21/16              | 467                         |
| 37        | Oakland                   | 15 | Fox Bay Civic Association                         | 6/23/16              | 321                         |
| 38        | Oakland                   | 16 | Fox Bay Civic Association                         | 7/5/16               | 373                         |
| 39        | Oakland                   | 17 | Fox Bay Civic Association                         | 7/6/16               | 347                         |
| 40        | Oakland                   | 18 | Fox Bay Civic Association                         | 7/11/16              | 359                         |
| 41        | Oakland                   | 19 | Fox Bay Civic Association                         | 7/13/16              | 488                         |
| 42        | Oakland                   | 20 | Fox Bay Civic Association                         | 7/14/16              | 625                         |
| 43        | Oakland                   | 21 | Fox Bay Civic Association                         | 7/25/16              | 558                         |
| 44        | Oakland                   | 23 | Seven Craven Association                          | 8/9/16               | 358                         |
| 45        | Oakland                   | 24 | Seven Craven Association                          | 8/10/16              | 398                         |
| 46        | Oakland                   | 25 | Eagle Lake Road                                   | 7/13/16              | 351                         |
| 47        | Oakland                   | 26 | Lakeland Estates                                  | 8/3/16               | 903                         |
| 48        | Oakland                   | 27 | Lakeland Estates                                  | 8/4/16               | 323                         |
| 49        | Oakland                   | 28 | Lakeland Estates                                  | 8/10/16              | 1513                        |
| 50        | Oakland                   | 29 | Lakeland Estates                                  | 8/11/16              | 868                         |
| 51        | Oakland                   | 30 | Lakeland Estates                                  | 8/16/16              | 1331                        |
| 52        | Oakland                   | 31 | Lakeland Estates                                  | 8/29/16              | 307                         |
| 53        | Oakland                   | 32 | Lakeland Estates                                  | 8/30/16              | 749                         |
| 54        | Oakland                   | 33 | Lakeland Estates                                  | 9/6/16               | 360                         |
| 55        | Oakland                   | 34 | Lakeland Estates                                  | 9/8/16               | 626                         |
|           |                           |    |   |                      |                             |
| <b>13</b> | <b><u>Osceala</u></b>     | 1  | Crawford Park                                     | 6/16/16              | 526.8588                    |
| 57        | Osceala                   | 2  | Beaverton City Park                               | 8/2/16               | 591.1946                    |
| 58        | Osceala                   | 3  | Beaverton City Park                               | 8/4/16               | 501.4695                    |
|           |                           |    |   |                      |                             |
| <b>14</b> | <b><u>Otsego</u></b>      | 1  | Otsego State Park                                 | 7/13/16              | 435.2                       |
|           |                           |    |   |                      |                             |
| <b>15</b> | <b><u>Roscommon</u></b>   | 1  | Houghton Lake Heights                             | 7/28/16              | 2419.6                      |
| 61        | Roscommon                 | 2  | Richfield Township Public Fishing Site            | 7/7/16               | 344.8059                    |
|           |                           |    |   |                      |                             |
| <b>16</b> | <b><u>Schoolcraft</u></b> | 1  | Indian Lake State Park                            | 5/31/16              | 515.9639                    |
| 63        | Schoolcraft               | 2  | Indian Lake State Park                            | 6/7/16               | 365.8998                    |
| 64        | Schoolcraft               | 3  | Indian Lake State Park                            | 7/6/16               | 552.151                     |
|           |                           |    |   |                      |                             |
| <b>17</b> | <b><u>Washtenaw</u></b>   | 1  | Pinckney Recreation Area                          | 6/10/16              | 873.0706                    |
|           |                           |    |   |                      |                             |
| <b>18</b> | <b><u>Wayne</u></b>       | 1  | Van Buren Township Park                           | 7/25/16              | 389.0586                    |
| 67        | Wayne                     | 2  | Newburgh and Sumac Pointes - Hines Park           | 7/11/16              | 729.1505                    |

Appendix F.1. Daily Water Samples from Inland Lake Beaches that Exceeded Michigan's WQS.

|              | <b>County</b>         |   | <b>Location</b>                         | <b>Sampling Date</b> | <b><i>E. coli</i> Test Results</b> |
|--------------|-----------------------|---|---|----------------------|------------------------------------|
| 68           | Wayne                 | 3 | Newburgh and Sumac Pointes - Hines Park |                      |                                    |
| 69           | Wayne                 | 4 | Newburgh and Sumac Pointes - Hines Park | 6/6/16               | 387.8135                           |
| 70           | Wayne                 | 5 | Blue Heron Condominiums Pond            | 9/1/16               | 521                                |
|              |                       |   |   |                      |                                    |
| <b>19</b> 71 | <b><u>Wexford</u></b> | 1 | Manton Park                             | 8/23/16              | 478                                |
| 72           | Wexford               | 2 | Manton Park                             | 6/17/16              | 336.2                              |
| 73           | Wexford               | 3 | Manton Park                             | 6/16/16              | 320.5                              |
| 74           | Wexford               | 4 | Manton Park                             | 6/14/16              | 313.1                              |

Appendix F.2. Daily Water Samples from Great Lakes Beaches that Exceeded Michigan's WQS 2016.

|          |    | County                 |    | Location                          | Water Body             | Sampling Date | E. coli Test Results |
|----------|----|------------------------|----|-----------------------------------|------------------------|---------------|----------------------|
| <b>1</b> | 1  | <b><u>Allegan</u></b>  | 1  | Oval Beach                        | Lake Michigan          | 7/25/16       | 488.4                |
|          | 2  | Allegan                | 2  | West Side County Park Beach       | Lake Michigan          | 7/25/16       | 344.8                |
|          |    |                        |    |                                   |                        |               |                      |
| <b>2</b> | 3  | <b><u>Arenac</u></b>   | 1  | Singing Bridge Beach              | Saginaw Bay-Lake Huron | 6/20/16       | 526.8193             |
|          | 4  | Arenac                 | 2  | Singing Bridge Beach              | Saginaw Bay-Lake Huron | 8/31/16       | 477.63               |
|          | 5  | Arenac                 | 3  | Singing Bridge Beach              | Saginaw Bay-Lake Huron | 8/1/16        | 345.3372             |
|          | 6  | Arenac                 | 4  | Singing Bridge Beach              | Saginaw Bay-Lake Huron | 8/17/16       | 338.4763             |
|          |    |                        |    |                                   |                        |               |                      |
| <b>3</b> | 7  | <b><u>Bay</u></b>      | 1  | Brissette Beach Township Park     | Saginaw Bay-Lake Huron | 7/28/16       | 2419.6               |
|          | 8  | Bay                    | 2  | South Linwood Beach Township Park | Saginaw Bay-Lake Huron | 7/28/16       | 2419.6               |
|          | 9  | Bay                    | 3  | Bay City State Recreation Area    | Saginaw Bay-Lake Huron | 7/28/16       | 1986.3               |
|          | 10 | Bay                    | 4  | Bay City State Recreation Area    | Saginaw Bay-Lake Huron | 7/28/16       | 1553.1               |
|          | 11 | Bay                    | 5  | South Linwood Beach Township Park | Saginaw Bay-Lake Huron | 6/23/16       | 1413.6               |
|          | 12 | Bay                    | 6  | Wenona Beach                      | Saginaw Bay-Lake Huron | 7/28/16       | 1203.3               |
|          | 13 | Bay                    | 7  | South Linwood Beach Township Park | Saginaw Bay-Lake Huron | 6/16/16       | 727                  |
|          | 14 | Bay                    | 8  | Wenona Beach                      | Saginaw Bay-Lake Huron | 7/26/16       | 547.5                |
|          | 15 | Bay                    | 9  | Bay City State Recreation Area    | Saginaw Bay-Lake Huron | 6/16/16       | 387.3                |
|          | 16 | Bay                    | 10 | Wenona Beach                      | Saginaw Bay-Lake Huron | 8/10/16       | 360.9                |
|          | 17 | Bay                    | 11 | Bay City State Recreation Area    | Saginaw Bay-Lake Huron | 6/16/16       | 344.8                |
|          | 18 | Bay                    | 12 | Brissette Beach Township Park     | Saginaw Bay-Lake Huron | 6/16/16       | 325.5                |
|          |    |                        |    |                                   |                        |               |                      |
| <b>4</b> | 19 | <b><u>Berrien</u></b>  | 1  | Warren Dunes Beach                | Lake Michigan          | 7/18/16       | 1344.226             |
|          | 20 | Berrien                | 2  | Warren Dunes Beach                | Lake Michigan          | 6/20/16       | 664.9737             |
|          | 21 | Berrien                | 3  | Warren Dunes Beach                | Lake Michigan          | 6/27/16       | 558.4933             |
|          | 22 | Berrien                | 4  | New Buffalo City                  | Lake Michigan          | 8/8/16        | 452.2998             |
|          | 23 | Berrien                | 5  | Union Pier - Townline Road        | Lake Michigan          | 7/25/16       | 360                  |
|          | 24 | Berrien                | 6  | New Buffalo City                  | Lake Michigan          | 6/13/16       | 350                  |
|          | 25 | Berrien                | 7  | Union Pier - Townline Road        | Lake Michigan          | 8/8/16        | 350                  |
|          | 26 | Berrien                | 8  | Weko Beach                        | Lake Michigan          | 7/25/16       | 340                  |
|          | 27 | Berrien                | 9  | New Buffalo City                  | Lake Michigan          | 7/25/16       | 338.686              |
|          |    |                        |    |                                   |                        |               |                      |
| <b>5</b> | 28 | <b><u>Chippewa</u></b> | 1  | Sherman Park                      | Lake Superior          | 8/31/16       | 1732.9               |
|          | 29 | Chippewa               | 2  | Sherman Park                      | Lake Superior          | 8/31/16       | 1553.1               |
|          | 30 | Chippewa               | 3  | Brimley State Park                | Lake Superior          | 8/30/16       | 1413.6               |

Appendix F.2. Daily Water Samples from Great Lakes Beaches that Exceeded Michigan's WQS 2016.

|           |    | County                       |    | Location                                | Water Body              | Sampling Date | E. coli Test Results |
|-----------|----|------------------------------|----|---|-------------------------|---------------|----------------------|
|           | 31 | Chippewa                     | 4  | Sherman Park                            | Lake Superior           | 8/31/16       | 1046.2               |
|           | 32 | Chippewa                     | 5  | Brimley State Park                      | Lake Superior           | 8/25/16       | 920.8                |
|           | 33 | Chippewa                     | 6  | Brimley State Park                      | Lake Superior           | 8/30/16       | 547.5                |
|           | 34 | Chippewa                     | 7  | Brimley State Park                      | Lake Superior           | 8/25/16       | 344.1                |
|           | 35 | Chippewa                     | 8  | Brimley State Park                      | Lake Superior           | 8/25/16       | 325.5                |
|           | 36 | Chippewa                     | 9  | Four Mile Beach                         | St. Mary's River        | 8/2/16        | 1732.9               |
|           | 37 | Chippewa                     | 10 | Four Mile Beach                         | St. Mary's River        | 8/30/16       | 1299.7               |
|           | 38 | Chippewa                     | 11 | Four Mile Beach                         | St. Mary's River        | 8/30/16       | 980.4                |
|           | 39 | Chippewa                     | 12 | Four Mile Beach                         | St. Mary's River        | 8/30/16       | 770.1                |
|           | 40 | Chippewa                     | 13 | Four Mile Beach                         | St. Mary's River        | 8/2/16        | 547.5                |
|           | 41 | Chippewa                     | 14 | Four Mile Beach                         | St. Mary's River        | 8/2/16        | 488.4                |
|           |    |                              |    |   |                         |               |                      |
| <b>6</b>  | 42 | <b><u>Delta</u></b>          | 1  | Gladstone Bathing Beach/Van Cleve Park  | Lake Michigan           | 7/12/16       | 497.5244             |
|           |    |                              |    |   |                         |               |                      |
| <b>7</b>  | 43 | <b><u>Emmet</u></b>          | 1  | Mackinaw City Beach #2                  | Lake Michigan           | 8/24/16       | 410.6                |
|           | 44 | Emmet                        | 2  | Mackinaw City Beach #2                  | Lake Michigan           | 7/12/16       | 387.3                |
|           |    |                              |    |   |                         |               |                      |
| <b>8</b>  | 45 | <b><u>Grand Traverse</u></b> | 1  | Bayside Acme Township Park              | Grand Traverse Bay-East | 7/27/16       | 328                  |
|           |    |                              |    |   |                         |               |                      |
| <b>9</b>  | 46 | <b><u>Huron</u></b>          | 1  | Caseville County Park                   | Lake Huron              | 8/18/16       | 2419.6               |
|           | 47 | Huron                        | 2  | Bird Creek County Park                  | Lake Huron              | 6/20/16       | 1553.1               |
|           | 48 | Huron                        | 3  | Caseville County Park                   | Lake Huron              | 8/17/16       | 1299.7               |
|           | 49 | Huron                        | 4  | Port Crescent State Park - Camping Area | Lake Huron              | 8/17/16       | 613.1                |
|           | 50 | Huron                        | 5  | Bird Creek County Park                  | Lake Huron              | 6/21/16       | 461.1                |
|           | 51 | Huron                        | 6  | Bird Creek County Park                  | Lake Huron              | 8/22/16       | 461.1                |
|           | 52 | Huron                        | 7  | Bird Creek County Park                  | Lake Huron              | 8/29/16       | 396.8                |
|           | 53 | Huron                        | 8  | Caseville County Park                   | Lake Huron              | 8/23/16       | 365.4                |
|           |    |                              |    |   |                         |               |                      |
| <b>10</b> | 54 | <b><u>Iosco</u></b>          | 1  | Veterans Park                           | Lake Huron              | 6/20/16       | 816.4                |
|           | 55 | Iosco                        | 2  | Tawas Point State Park-Day Use area     | Lake Huron              | 7/12/16       | 689.3                |
|           | 56 | Iosco                        | 3  | Gateway Park Beach                      | Lake Huron (Tawas Bay)  | 7/12/16       | 526.1932             |
|           | 57 | Iosco                        | 4  | Gateway Park Beach                      | Lake Huron (Tawas Bay)  | 8/16/16       | 332.8684             |
|           |    |                              |    |   |                         |               |                      |

Appendix F.2. Daily Water Samples from Great Lakes Beaches that Exceeded Michigan's WQS 2016.

|           |    | County          |    | Location                                  | Water Body                    | Sampling Date | E. coli Test Results |
|-----------|----|-----------------|----|---|-------------------------------|---------------|----------------------|
| <b>11</b> | 58 | <b>Leelanau</b> | 1  | Suttons Bay - South Shore Park            | Grand Traverse Bay (West Bay) | 8/31/16       | 575                  |
|           | 59 | Leelanau        | 2  | Suttons Bay - South Shore Park            | Grand Traverse Bay (West Bay) | 7/6/16        | 344                  |
|           | 60 | Leelanau        | 3  | Elmwood/Greilikville Park & Beach         | Grand Traverse Bay-West       | 8/31/16       | 914                  |
|           | 61 | Leelanau        | 4  | Northport Bay Marina                      | Grand Traverse Bay-West       | 8/24/16       | 602                  |
|           | 62 | Leelanau        | 5  | Omena Beach & Park                        | Grand Traverse Bay-West       | 7/27/16       | 317.7399             |
|           | 63 | Leelanau        | 6  | Elmwood/Greilikville Park & Beach         | Grand Traverse Bay-West       | 8/17/16       | 313                  |
|           |    |                 |    |   |                               |               |                      |
| <b>12</b> | 64 | <b>Mackinac</b> | 1  | Kiwanis Beach                             | Lake Huron                    | 8/2/16        | 2419.6               |
|           | 65 | Mackinac        | 2  | Kiwanis Beach                             | Lake Huron                    | 8/16/16       | 2419.6               |
|           | 66 | Mackinac        | 3  | Kiwanis Beach                             | Lake Huron                    | 7/12/16       | 1046.2               |
|           | 67 | Mackinac        | 4  | Kiwanis Beach                             | Lake Huron                    | 8/2/16        | 770.1                |
|           | 68 | Mackinac        | 5  | Kiwanis Beach                             | Lake Huron                    | 7/12/16       | 582.746              |
|           | 69 | Mackinac        | 6  | Kiwanis Beach                             | Lake Huron                    | 7/12/16       | 488.4                |
|           | 70 | Mackinac        | 7  | Kiwanis Beach                             | Lake Huron                    | 7/12/16       | 387.3                |
|           | 71 | Mackinac        | 8  | Kiwanis Beach                             | Lake Huron                    | 7/19/16       | 343.6                |
|           | 72 | Mackinac        | 9  | Kiwanis Beach                             | Lake Huron                    | 7/19/16       | 316.9                |
|           | 73 | Mackinac        | 10 | Kiwanis Beach                             | Lake Huron                    | 8/3/16        | 307.6                |
|           | 74 | Mackinac        | 11 | US 2 Sand Dunes Beach (East of Brevort)   | Lake Michigan                 | 6/2/16        | 344.8                |
|           |    |                 |    |   |                               |               |                      |
| <b>13</b> | 75 | <b>Macomb</b>   | 1  | St. Clair Shores Memorial Park Beach      | Lake St. Clair                | 8/17/16       | 1790.46              |
|           | 76 | Macomb          | 2  | H.C.M.A. - Lake St. Clair Metropark Beach | Lake St. Clair                | 8/24/16       | 1093.88              |
|           | 77 | Macomb          | 3  | H.C.M.A. - Lake St. Clair Metropark Beach | Lake St. Clair                | 8/17/16       | 897.23               |
|           | 78 | Macomb          | 4  | H.C.M.A. - Lake St. Clair Metropark Beach | Lake St. Clair                | 7/6/16        | 866.4                |
|           | 79 | Macomb          | 5  | St. Clair Shores Memorial Park Beach      | Lake St. Clair                | 8/24/16       | 819.14               |
|           | 80 | Macomb          | 6  | St. Clair Shores Memorial Park Beach      | Lake St. Clair                | 8/31/16       | 675.93               |
|           | 81 | Macomb          | 7  | H.C.M.A. - Lake St. Clair Metropark Beach | Lake St. Clair                | 7/6/16        | 566.49               |
|           | 82 | Macomb          | 8  | St. Clair Shores Memorial Park Beach      | Lake St. Clair                | 7/6/16        | 459.24               |
|           | 83 | Macomb          | 9  | H.C.M.A. - Lake St. Clair Metropark Beach | Lake St. Clair                | 8/10/16       | 421.45               |
|           | 84 | Macomb          | 10 | St. Clair Shores Memorial Park Beach      | Lake St. Clair                | 7/20/16       | 392.83               |
|           | 85 | Macomb          | 11 | St. Clair Shores Memorial Park Beach      | Lake St. Clair                | 7/13/16       | 361.42               |
|           | 86 | Macomb          | 12 | St. Clair Shores Memorial Park Beach      | Lake St. Clair                | 8/15/16       | 320.66               |
|           | 87 | Macomb          | 13 | H.C.M.A. - Lake St. Clair Metropark Beach | Lake St. Clair                | 8/30/16       | 307.74               |
|           | 88 | Macomb          | 14 | St. Clair Shores Memorial Park Beach      | Lake St. Clair                | 9/28/16       | 560.58               |
|           |    |                 |    |   |                               |               |                      |

Appendix F.2. Daily Water Samples from Great Lakes Beaches that Exceeded Michigan's WQS 2016.

|           |     | County             |   | Location                                       | Water Body      | Sampling Date | E. coli Test Results |
|-----------|-----|--------------------|---|--|-----------------|---------------|----------------------|
| <b>14</b> | 89  | <b>Monroe</b>      | 1 | Luna Pier City Beach                           | Lake Erie       | 6/21/16       | 2420                 |
|           | 90  | Monroe             | 2 | Sterling State Park                            | Lake Erie       | 6/21/16       | 2420                 |
|           | 91  | Monroe             | 3 | Luna Pier City Beach                           | Lake Erie       | 6/14/16       | 1937.035             |
|           | 92  | Monroe             | 4 | Luna Pier City Beach                           | Lake Erie       | 6/23/16       | 885.3144             |
|           | 93  | Monroe             | 5 | Luna Pier City Beach                           | Lake Erie       | 7/19/16       | 747.4523             |
|           | 94  | Monroe             | 6 | Sterling State Park                            | Lake Erie       | 8/29/16       | 590.8891             |
|           |     |                    |   |  |                 |               |                      |
| <b>15</b> | 95  | <b>Muskegon</b>    | 1 | P.J. Hoffmaster State Park - Public Beach Area | Lake Michigan   | 8/9/16        | 649                  |
|           |     |                    |   |  |                 |               |                      |
| <b>16</b> | 96  | <b>Ottawa</b>      |   | Grand Haven State Park                         | Lake Michigan   | 6/1/16        | 320.4                |
|           | 97  | Ottawa             |   | Grand Haven State Park                         | Lake Michigan   | 7/27/16       | 852.8                |
|           | 98  | Ottawa             |   | Holland State Park                             | Lake Michigan   | 8/3/16        | 1132.2               |
|           |     |                    |   |  |                 |               |                      |
| <b>17</b> | 99  | <b>Sanilac</b>     | 1 | Forester County Park                           | Lake Huron      | 8/16/16       | 1967.243             |
|           | 100 | Sanilac            | 2 | Port Sanilac Park                              | Lake Huron      | 8/16/16       | 1647.81              |
|           | 101 | Sanilac            | 3 | Forestville Beach                              | Lake Huron      | 8/16/16       | 1529.313             |
|           | 102 | Sanilac            | 4 | Forester County Park                           | Lake Huron      | 8/17/16       | 872.598              |
|           | 103 | Sanilac            | 5 | Port Sanilac Park                              | Lake Huron      | 6/28/16       | 402.3926             |
|           | 104 | Sanilac            | 6 | Forester County Park                           | Lake Huron      | 8/18/16       | 319.1773             |
|           |     |                    |   |  |                 |               |                      |
| <b>18</b> | 105 | <b>Schoolcraft</b> | 1 | Rogers Park-MDOT                               | Lake Michigan   | 7/12/16       | 1137.939             |
|           | 106 | Schoolcraft        | 2 | Public Shoreline Beach-Thompson                | Lake Michigan   | 7/12/16       | 693.0588             |
|           |     |                    |   |  |                 |               |                      |
| <b>19</b> | 107 | <b>St. Clair</b>   | 1 | Chrysler Park Beach                            | St. Clair River | 8/16/16       | 2419.6               |
|           | 108 | St. Clair          | 2 | Chrysler Park Beach                            | St. Clair River | 8/17/16       | 1119.9               |
|           | 109 | St. Clair          | 3 | Chrysler Park Beach                            | St. Clair River | 6/28/16       | 517.2                |
|           | 110 | St. Clair          | 4 | Chrysler Park Beach                            | St. Clair River | 7/27/16       | 387.3                |
|           | 111 | St. Clair          | 5 | Chrysler Park Beach                            | St. Clair River | 8/3/16        | 307.6                |
|           | 112 | St. Clair          | 6 | Holland Road Beach                             | Lake Huron      | 8/31/16       | 2419.6               |
|           | 113 | St. Clair          | 7 | Keewadhin Road Beach                           | Lake Huron      | 6/21/16       | 410.6                |
|           | 114 | St. Clair          | 8 | Keewadhin Road Beach                           | Lake Huron      | 7/19/16       | 307.6                |