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Watershed Monitoring and Bioassessment Plan for the Milwaukee River Basin

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Watershed Monitoring and Bioassessment Plan for the Milwaukee River Basin

Including Adjoining Watersheds in the Milwaukee Metropolitan Sewer District Service Area

Technical Report MBI/2019-11-9

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EXECUTIVE SUMMARY

The Midwest Biodiversity Institute (MBI) was contracted by the Milwaukee Metropolitan Sewerage District (MMSD) through the Southeastern Wisconsin Watersheds Trust ("Sweet Water") to develop a watershed-based monitoring and biological assessment Plan for the Milwaukee River Basin and adjoining MMSD service area watersheds. MMSD specifically requested that the content and uses of the Plan follow that previously developed by MBI in support of two major projects in Ohio and Illinois. The common elements of these projects include rotating annual watershed assessments to document the effects of pollution on biological condition, chemical water quality, and physical factors and development of an Integrated Prioritization System (IPS) which serves as an information warehouse and toolset of data, stressor relationships, and a prioritization scheme to set restoration and protection priorities within the requirements of the respective State Water Quality Standards (WQS).

The Plan describes a spatial and temporal sampling design and the indicators and parameters that are to be collected at each sampling site and options for managing the scope of the project. Data collection will follow current Wisconsin DNR methods and protocols. Chemical and physical measures are intended to provide supporting data. All biological, chemical, and physical parameters are to be collected as *paired data* to support subsequent stressor analyses and the development of tools and models for the diagnosis and management of limiting stressors. The Plan can be used by MMSD and/or local stakeholders to guide the development of detailed study plans for the actual field work and the subsequent data analysis for baseline bioassessments in the near future. The recommended spatial sampling design is not necessarily binding and can be modified to suit the objectives and resources of various stakeholders.

The recommended Plan relies on an intensive pollution survey design to support watershed assessments that are designed to detect, characterize, and quantify relevant pollution impacts[1] at a detailed level of spatial resolution and apportion impairments between point and nonpoint sources including the cumulative and eclipsing effects of multiple stressors. The monitoring design and subsequent data analyses are intended to support multiple management purposes and goals in addition to the determination of the existing status of the extant biological assemblages and their relationship to chemical, physical, and biological stressors. As such, the principles of adequate monitoring (ITFM 1995; Yoder 1998) were followed in anticipation that the resulting biological and water quality assessments would be used to support the development of cost-effective management responses to existing and emerging issues at multiple scales. An allocation of sampling sites with paired biological, chemical, and physical parameters to support watershed level and region-wide assessments of conditions for aquatic life and important stressors is provided by the Plan along with suggestions for a rotating basin approach. This approach has precedents in two major projects by MBI for regional clients.

[1] Pollution as defined in the FWPCA (Section 502) means the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.

INTRODUCTION

MBI was initially contacted in April 2017 by the Milwaukee Metropolitan Sewer District (MMSD) about developing a comprehensive, watershed-based monitoring and assessment plan ("Plan"). This was formalized in August 2017 when MMSD made a commitment to fund the Plan via a contract with the Southeastern Wisconsin Watersheds Trust ("Sweet Water"). MMSD specifically requested that the content and uses of the Plan follow that previously developed by MBI in support of two major watershed assessment projects in Ohio and Illinois, the watersheds within the Metropolitan Sewer District of Greater Cincinnati[1] (MSDGC; 2010-2018) service area and the watersheds within the membership of the DuPage River Salt Creek Workgroup[2] (DRSCW; 2006-present). The common elements of these two projects include rotating annual assessments of watersheds to document biological condition as it relates to chemical water quality and physical factors (flow, habitat, land uses) and the development of an Integrated Prioritization System (IPS) which is an informational storehouse of summarized data, stressor relationships, and a prioritization scheme that can be used to determine, evaluate, and set restoration and protection priorities and criteria for sites, reaches, and watersheds within the requirements of the respective State Water Quality Standards (WQS). In 2016-18 the DRSCW approach was expanded to include three additional watershed groups across five counties in northeastern Illinois and an updated IPS to be produced in late 2020.

Strategic Role of Monitoring and Assessment

The generation of data and information via ambient monitoring is inherently a strategic process, which requires an understanding of the broad goals and objectives about the uses of such information in the management of water resources. During the late 1980s and early 1990s, renewed interest by federal and state agencies and research organizations resulted in a number of reviews and compendia about what constitutes an *adequate* and *credible* framework for the monitoring and assessment of the nation's waters. The most comprehensive of these was the Intergovernmental Task Force on Monitoring Water Quality (ITFM) which produced a national strategy for water monitoring (ITFM 1995) and by its successor, the National Water Quality Monitoring Council (NWQMC) in 1997. Other efforts include a revision of the United States Environmental Protection Agency (U.S. EPA) guidance for surface water monitoring programs, a description of the important concepts and elements of an *adequate* watershed monitoring and assessment approach by U.S. EPA and the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA; Yoder 1998), the Consolidated Assessment and Listing Methodology (CALM) guidance of U.S. EPA, the National Research Council's review of science in the total maximum daily load (TMDL) process (NRC 2001; Karr and Yoder 2004), and more recently the U.S. EPA *Biological Assessment Program Review: Assessing Level of Technical Rigor to Support Water Quality Management* (U.S. EPA 2013). Together, these

[1] http://www.msdgc.org/initiatives/water_quality/index.html
[2] https://drscw.org/

provide the essential principles and guidelines by which a surface water monitoring program can be developed and conducted, particularly those of regional scope. MBI has produced monitoring program plans and strategies based on these same principles for other organizations including the Miami Conservancy District (Ohio), the state of Rhode Island Department of Environmental Management (MBI 2003a, 2003b), the DuPage River Salt Creek Workgroup (DRSCW; MBI 2006), the Metropolitan Sewer District of Greater Cincinnati (MSDGC; MBI 2010), the Des Plaines Watershed Workgroup (DRWW; Upper Des Plaines River, initiated in 2016), the North Branch Watershed Workgroup (NBWW; N. Branch Chicago River, initiated in 2018), and the Lower Des Plaines Watershed Workgroup (LDPWW; Lower Des Plaines R., initiated in 2018). The DRSCW and MSDGC plans in particular reflect the implementation of these principles and concepts at regional and local watershed scales of application. What follows is a reflection of these plans and subsequent implementation experiences. In addition, the earlier experience of Ohio EPA (2011) and later by MBI (2006) in developing and using a geometric monitoring design is also applied herein.

An Adequate Watershed Monitoring Program

The question of what constitutes an *adequate* watershed monitoring and assessment program was articulated in general by the ITFM (1992, 1995) and more specifically by Yoder (1998). Adequate monitoring and assessment was seen as key to resolving the deficiencies and inequities within and between state Clean Water Act (CWA) programs and answering questions about the reliability of 303(d) listings, nonpoint source management, and water quality standards (WQS). *Important Concepts and Elements of an Adequate State Watershed Monitoring and Assessment Program* (Yoder 1998) outlined the important elements and concepts of adequate watershed monitoring and assessment. It relied principally on the results of the ITFM process, U.S. EPA environmental indicator initiatives of the late 1980s and early 1990s (U.S. EPA 1995 a,b), and state agency experiences in operating systematic and adequately funded programs over a period of 25 years. Table 1 provides an overview of surface water indicators and how each is related to management objectives. The data for some of these indicators may be accessed from other sources during the analysis and reporting phases of a monitoring and assessment process.

Choosing Indicators and Parameters

Multiples of different types of measurements comprise an important part of the adequate watershed monitoring and assessment approach consisting of core and supplemental indicators and parameters (Figure 1). The core parameters form the essential basis of the design and are collected at all sites since they represent the baseline attributes of an aquatic ecosystem. The role of biological indicators as the direct measures of ecosystem condition and response supported by chemical and physical parameters as indicators of stress and exposure is fundamentally important. These comprise the core indicators of an adequate monitoring and assessment approach and they are used directly to answer fundamental assessment questions

Table 1. *Summary matrix of recommended environmental indicators for meeting management objectives for status and trends of surface waters (a bold **X** is recommended as a primary indicator after ITFM 1992, a plain X is secondary; additional recommended indicators are designated by a √). The corresponding EPA indicator hierarchy level (U.S. EPA 1995a,b) is listed for each.*

	Categories of Management Objectives					
	Human Health			Ecological Health	Economic Concerns	
Indicator Groups	**Consump-tion of Fish/ Shellfish**	**Public Water Supply**	**Recreation (swimming, boating, fishing)**	**Aquatic & Semi-aquatic life**	**Industry/ Energy/ Transportation**	**Agriculture/ Forestry**
Biological Response Indicators (Level 6)						
Macroinvertebrates		X	**X**	**X**	√	√
Fish	**X**	X	**X**	**X**	√	√
Semi-aquatic animals	X		**X**	**X**	X	X
Pathogens	**X**	X	**X**		**X**	
Phytoplankton	**X**	**X**	X	**X**	**X**	
Periphyton				**X**		
Aquatic Plants		X	**X**	X	X	X
Zooplankton		X	X	X		X
Chemical Exposure Indicators (Levels 4&5)						
Water chemistry	X	**X**	**X**	**X**	X	**X**
Odor/Taste	**X**	**X**	**X**			X
Sediment Chemistry	**X**	**X**	**X**	**X**	**X**	**X**
Tissue Chemistry	**X**	X		X	X	
Biochemical Markers	√	√	√	√		√
Physical Habitat/Hydrological Indicators (Levels 3&4)						
Hydrological Measures	X	**X**	X	**X**	**X**	**X**
Temperature	X	X	**X**	**X**	**X**	**X**
Geomorphology	X	X	**X**	**X**	**X**	**X**
Riparian/Shoreline	X	**X**	√	**X**	X	**X**
Habitat Quality	√	√	√	√	√	√
Watershed Scale Stressor Indicators (Levels 3,4,&5)						
Land Use Patterns	X	**X**	**X**	**X**	X	**X**
Human Alterations	X	**X**	**X**	**X**	X	√
Watershed Imperv.	√	√	√	√	√	√
Pollutant Loadings Indicators (Level 3)						
Point Source Loads	√	√	√	√	√	√
Nonpoint Loadings	√	√	√	√	√	√
Spills/Other Releases	√	√	√	√	√	√

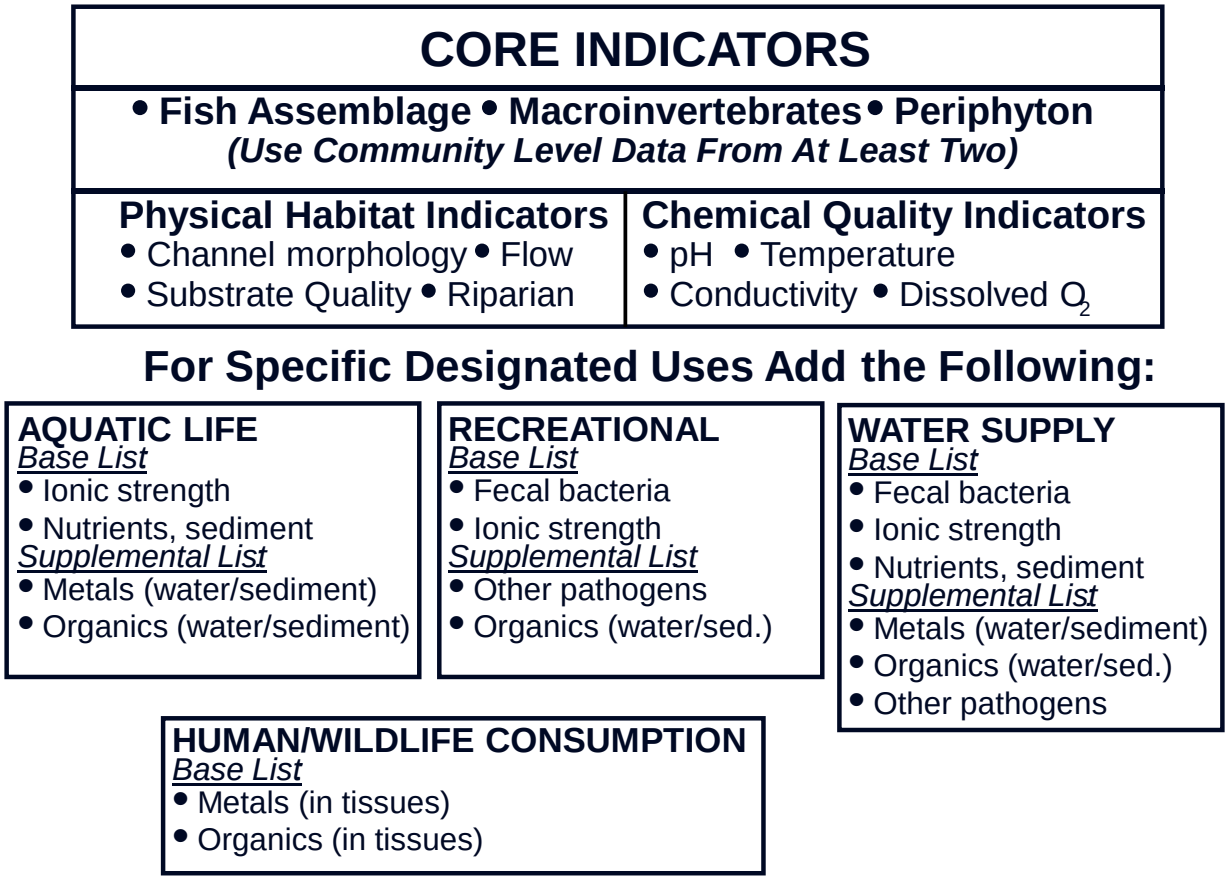

***Figure 1**. Core and supplemental indicators and parameters arrayed by designated uses. This structure illustrates how specific indicators and parameters are chosen for data collection and analysis under an adequate watershed monitoring and assessment approach (after Yoder 1998).*

such as overall ecosystem status, water quality standards compliance, use attainability analyses, delineating causes/sources of threats and impairments, and baseline CWA reporting (305b) and listing (303d). Supplemental parameters (Figure 1) consist of chemical, physical, and bacterial indicators of stress and exposure and are added to the core indicators in accordance with the scope, intensity, and degree of environmental disturbance and as the assessment questions increase in diversity, density, and complexity.

Taken together the structure of the indicators and parameters reflects the five factors that comprise the integrity of an aquatic resource (Karr et al. 1986; Figure 2). These five factors include:

Energy source: changes in the food web, including nutrients, organic material inputs, seasonal cycles, primary and secondary production, sunlight.

The Five Major Factors Which Determine the Integrity of Aquatic Resources

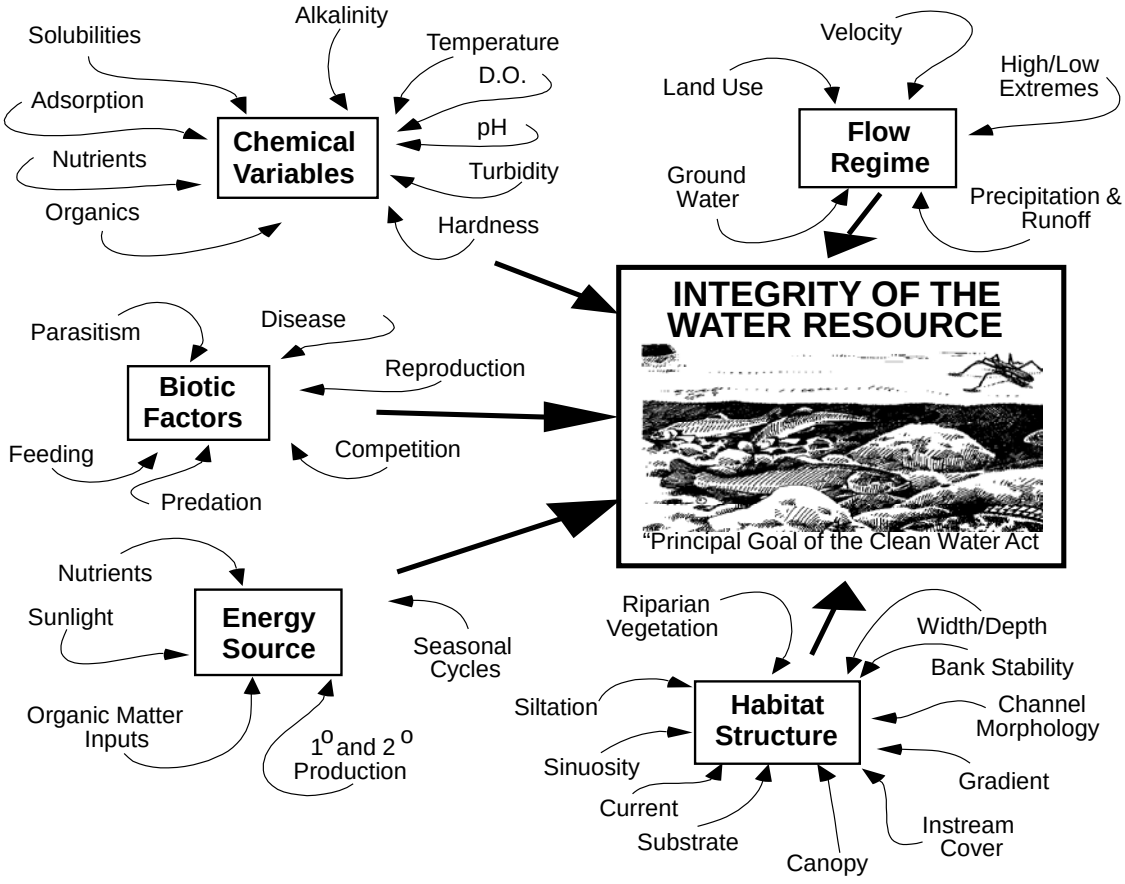

***Figure 2**. The five factors that comprise and determine the integrity of an aquatic resource (after Karr et al. 1986).*

Chemical variables: changes in chemical water quality, including D.O., pH, turbidity, hardness, alkalinity, ionic strength, nutrients, organics, toxic substances, temperature, sediment and their modes of action (e.g., solubility, adsorption, etc.).

Flow regime: modification of flows, including precipitation, seasonal patterns, runoff, velocity, groundwater, flow extremes.

Habitat structure: alteration of physical habitat, including bank stability, current, gradient, instream cover, vegetative canopy, substrate, current, sinuosity, width, depth,

pool-to-riffle ratios, riparian vegetation, sedimentation, channel morphology.

Biotic factors: changes in biotic interactions, including alien taxa, feeding, reproduction, predation, overharvest by sport, commercial, and subsistence fishers, diseases, parasitism, and competition.

When stressors influence or impact one or more of these factors, or their interactions, the aquatic biota responds in a predictable manner and as an explicit model of causation (Karr and Yoder 2004; Figure 3). The severity and degree of the biological response to these impacts are

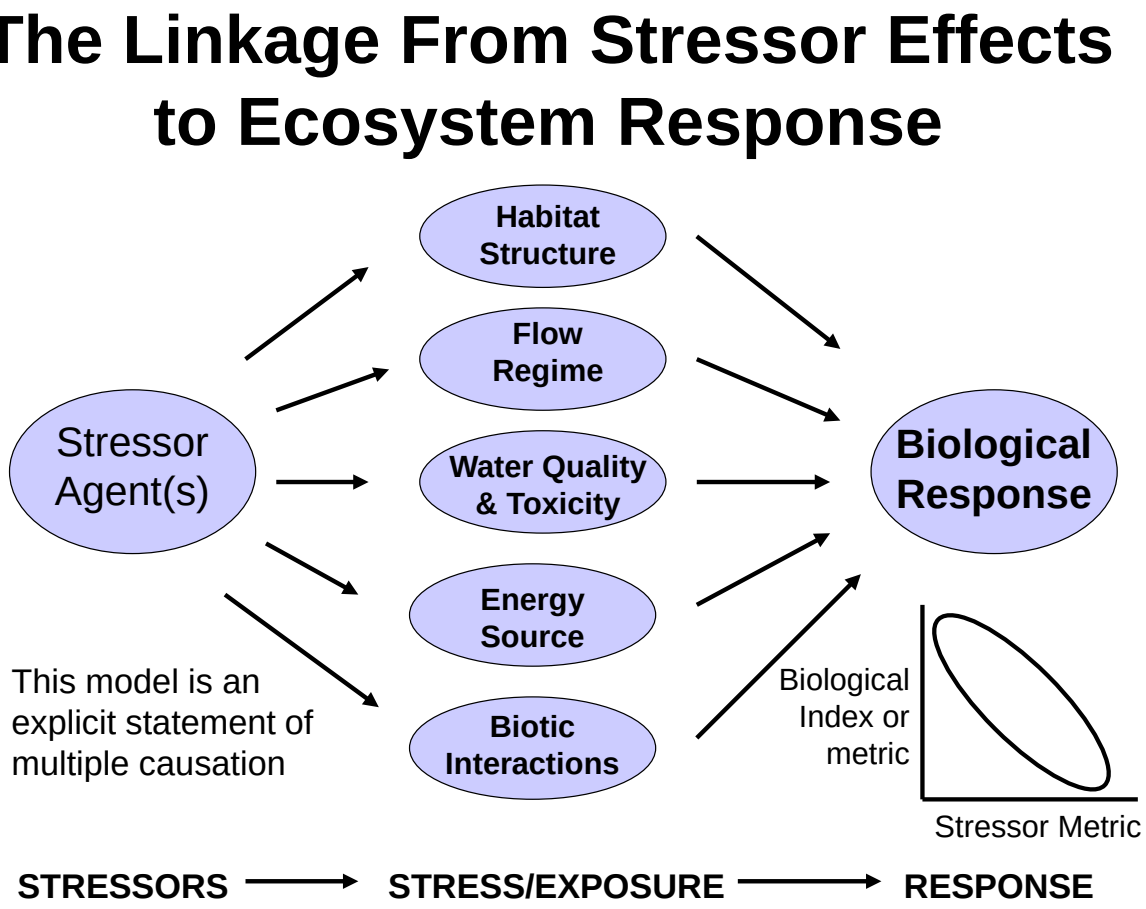

***Figure 3**. Linkages between stressors (or drivers of ecosystem change) through the five major factors of water resource integrity (as altered by stressors) to the biological responses produced by the interactions. The biological response is the endpoint of primary interest and is the focus of water quality management. This model illustrates the multiple causes of water resource changes associated with human activities. The insert illustrates the relationship between stressor dose and the gradient of biological response that signals a good biological metric (after Karr and Yoder 2004).*

ultimately what is important, not the mere presence of an impact. It is the understanding of these interactions that is used to guide the selection of indicators and parameters for monitoring programs (Karr 1991; Yoder 1998).

This framework emphasizes cost-effectiveness by carefully allocating sampling resources and by scaling the intensity and complexity of the monitoring in accordance with the complexity of the local setting and the management issues that need to be addressed or exposed. Such an approach also allows for more flexible management responses that are attenuated by the information revealed about the environmental complexity of the setting, the inherent quality of the aquatic resource, and the types of pollution problems that are encountered. Effective implementation is enhanced through experience and knowledge gained by conducting monitoring and assessment for many years and over a wide geographical area. Adequate monitoring employs a stepwise approach to the selection and use of chemical, physical, and biological indicators and measures that are currently available. The decision(s) about which indicators and parameters to use are based on the type of aquatic resource being assessed (i.e., headwater stream, wadeable stream, non-wadeable large river, lake or reservoir, wetland, etc.), the environmental complexity of the setting (includes consideration of all potential stressors), and the water quality management objectives and purposes that are at stake. For example, in a small, headwater stream with only one or two potential stressors, the two biological organism groups are accompanied by a *qualitative* habitat assessment, and a comparatively limited chemical water quality analysis for field, demand, and nutrient series parameters. Field sampling can be completed with one visit for biology and habitat and 2-3 samples for chemical/physical parameters within a seasonal index period. Multiples of these sites can be sampled in one field day. In more complex watershed settings with multiple management issues, multiple and complex stressors, and the potential for the discovery of undocumented stressors, the cumulative sampling requirements are more intensive with two visits for biology and habitat and more frequent (up to weekly) sampling for a more complex array of chemical analyses in water and sediment including heavy metals and organics. Recently, increased concerns about the effects of nutrient enrichment have added continuous monitoring for temperature, pH, and dissolved oxygen (D.O.) and analyses of chlorophyll α on the substrates (benthic) and in the water column (sestonic). A systematic sampling effort spans a summer-fall index period, usually June through mid-October. Data analysis and reporting culminate in the production of a comprehensive assessment several months after the sampling is completed. This ensures that a careful analysis of multiple indicators and assignments of causes and sources can be performed in accordance with sound practice and procedures.

Spatial Monitoring Design

Using an information-effective spatial monitoring design is but one of the critical steps in the process of developing an adequate watershed monitoring program. MMSD specifically requested a monitoring design which emulates that employed by the DuPage Salt Creek

Watershed Workgroup (DRSCW) since 2006 and by the Metropolitan Sewer District of Greater Cincinnati (MSDGC) since 2011.

Intensive Pollution Surveys vs. Condition Surveys

The intensive pollution survey design exemplified by the Plan is different from the condition surveys that are commonly employed by most state and federal agencies in the U.S. Some of the key characteristics, outputs, and outcomes of each are described in Table 2 to offer a perspective on what each offers and some of the inherent assumptions that each may impose on the uses of the data and results to support water quality management programs and their functions. The differences are necessarily portrayed in as a binary comparison, but in reality a gradient between them exists, but the goals of each and the capabilities to deliver support to water quality management are distinct.

A combined Intensive Pollution Survey and Geometric Site Selection design (hereafter Intensive Pollution Survey) provides data sufficient to assess impairments and their causes and sources at the site, reach, and watershed (12 digit Hydrologic Unit Code [HUC12]) scale. This design is based in part on the pioneering concepts about pollution gradients advanced by Bartsch (1948) and Doudoroff and Warren (1951) to facilitate the detection and quantification of degradation and recovery from pollution influences along a river or stream reach (i.e., pollution impact reaches). Multiples of sampling sites are located upstream from major sources of disturbance, in areas of immediate impact and potentially acute effects, through reaches of increasing and lessening degradation, and reaches of recovery. It is not a point source only focused approach, but rather a pollution focused approach the latter which can emanate from either point or nonpoint sources.

Condition surveys are intended to provide a broad assessment of aquatic resources at a regional, statewide, or national scale by sampling a subset of representative sites that provides a legitimate basis for extrapolating the results at a few sites to many more unsampled sites. They are regarded as being more cost-effective than intensive surveys because of the lower field effort and there are many examples where relationships with stressors have been extracted. However, few have questioned how the lack of data along pollution gradients at the site, reach, and watershed level affects the capacity of condition assessments to detect and quantify stressors that are apparent only at the site, reach, or small watershed scale. Furthermore, stressors that act at multiple scales may escape adequate detection and characterization. Added to this is that river and stream networks have inherent properties such as dendritic branching, directed flow, and abrupt changes in physical, chemical and biological attributes at tributary junctions (Peterson and Ver Hof 2014; Ver Hof et al. 2014) and with changes exerted by non-randomly positioned point and nonpoint sources of pollution. Some of the more commonly employed condition survey designs ignore these properties, which increases the chances of obtaining biased results and poor scientific inference. Simply extrapolating (i.e., kriging) widely spaced sites across a landscape ignores these inherent

Table 2. *Key characteristics of condition-focused and intensive pollution survey monitoring designs in terms of spatial organization, sampling site density, outcomes, CWA program support, stressor identification, and the capacity for detecting and dealing with cumulative effects.*

Key Characteristics	Condition Monitoring	Pollution Monitoring
Spatial Organization	• Probabilistic • Synoptic (non-random) • "Pour point" (HUC8-12)	• Sites, Reaches, Sub-watersheds (HUC12) • Along longitudinal pollution gradients
Sample Site Density	• >25 mi.^{2} per site[1] • 10-25 miles per site[1] • 1.5 avg. sites per HUC12[1] • 4.6 avg. sites per HUC10[1]	• 1.5-3.0 mi.^{2} per site[2] • 1-5 miles per site[2] • 10.4 avg. sites per HUC12[2] • 59.3 avg. sites per HUC10[2]
Outcome(s)	• Delineate status over wide area (regional, statewide) • First order stressor identification	• Delineate status at the site, reach, and watershed (HUC12) scales. • Delineate pollution gradients. • Quantify severity and extent of reach scale impacts. • Detailed stressor identification. • Use attainability analysis.
CWA Program Support	• 305[b]/303[d] reporting & listing. • Indirect support for implementation (TMDL, NPDES, etc.)	• 305[b]/303[d] reporting & listing. • Direct support for implementation (TMDL, NPDES, WQS, 404/401, stormwater, planning, BMPs).
Stressor Identification	• First order determination of stressor relationships (limited by scale).	• Detailed delineation of stressor relationships across watershed strata. • Regional development of stressor thresholds.
Cumulative Effects	• Too few sites at HUC12 scale to distinguish site- and HUC-specific stressors. • Insufficient sites to reveal pollution gradients and profiles.	• Multiple sites at HUC12 sufficient to distinguish site- and HUC-specific stressors. • Sufficient sites to reveal longitudinal pollution gradients and profiles.

[1] Illinois EPA/DNR surveys in DRSCW/DRWW watersheds in NE Illinois 2006-18.
[2] DRSCW/DRWW watershed surveys in NE Illinois 2006-18.

properties of rivers and streams and their watershed networks.

Intensive Pollution Survey Design Specifics

An important goal of an intensive pollution survey is to determine the relative effects of specific sources while assessing cumulative effects from multiple sources. Larger mainstem rivers and streams are treated as distinct units to understand how changes take place along a longitudinal pollution continuum with respect to both natural and anthropogenic influences which is where the majority of pollution survey sites are located. Tributaries are accounted for via the geometric allocation of sites by panels of drainage area. It yields a detailed assessment of impairments, their extent and severity, specific indicator responses in stream and river reaches, and assessing temporal changes when applied in the context of a sequential rotation of watershed units.

The design is employed within watersheds that correspond to a HUC10 scale in order to fulfill multiple water quality management objectives in addition to the more conventional focus on general status assessment. It is employed at a spatial scale that is representative of how CWA management programs are inherently applied – at the site, reach, and HUC12 watershed scales. In the Midwestern U.S., most HUC10 watersheds drain approximately 150-300 mi^2 although this is not invariable. Sites within a watershed of this size are allocated based on a geometric progression of drainage areas starting with the area at the mouth of the HUC10 watershed and working upstream through the mainstem and tributaries to the primary headwaters. Sampling sites are then allocated according to the stratification of available stream and river sizes based on the drainage patterns. A targeted selection of additional sampling sites that are used to focus on localized sources such as point source discharges, habitat modifications, dams and impoundments, and other potential impacts within a watershed are added to complete an intensive pollution survey design. This combined design fosters data analysis that takes into consideration the overlying natural and human caused influences within the streams and rivers of a watershed. It simultaneously supports multiple management issues including the proportionate assessment of all streams and rivers, applying tiered aquatic life uses, the development of TMDLs that include the inter-relationships of both pollutant and non-pollutant stressors, and the development of a comprehensive and spatially representative database through time. Other benefits of this design include the application of cost-effective sampling methods on a watershed scale, development of a stratified database, and an enhanced ability to include previously unassessed streams. The design has been particularly useful for watersheds that are targeted for TMDL development in that unassessed waters, incomplete or outdated assessments, and outstanding WQS attainability issues can be addressed *prior to* TMDL development as is illustrated in Figure 4.

The principal outputs are based on an interdisciplinary monitoring effort coordinated on a water body specific or watershed scale. Biological, chemical, and physical monitoring and

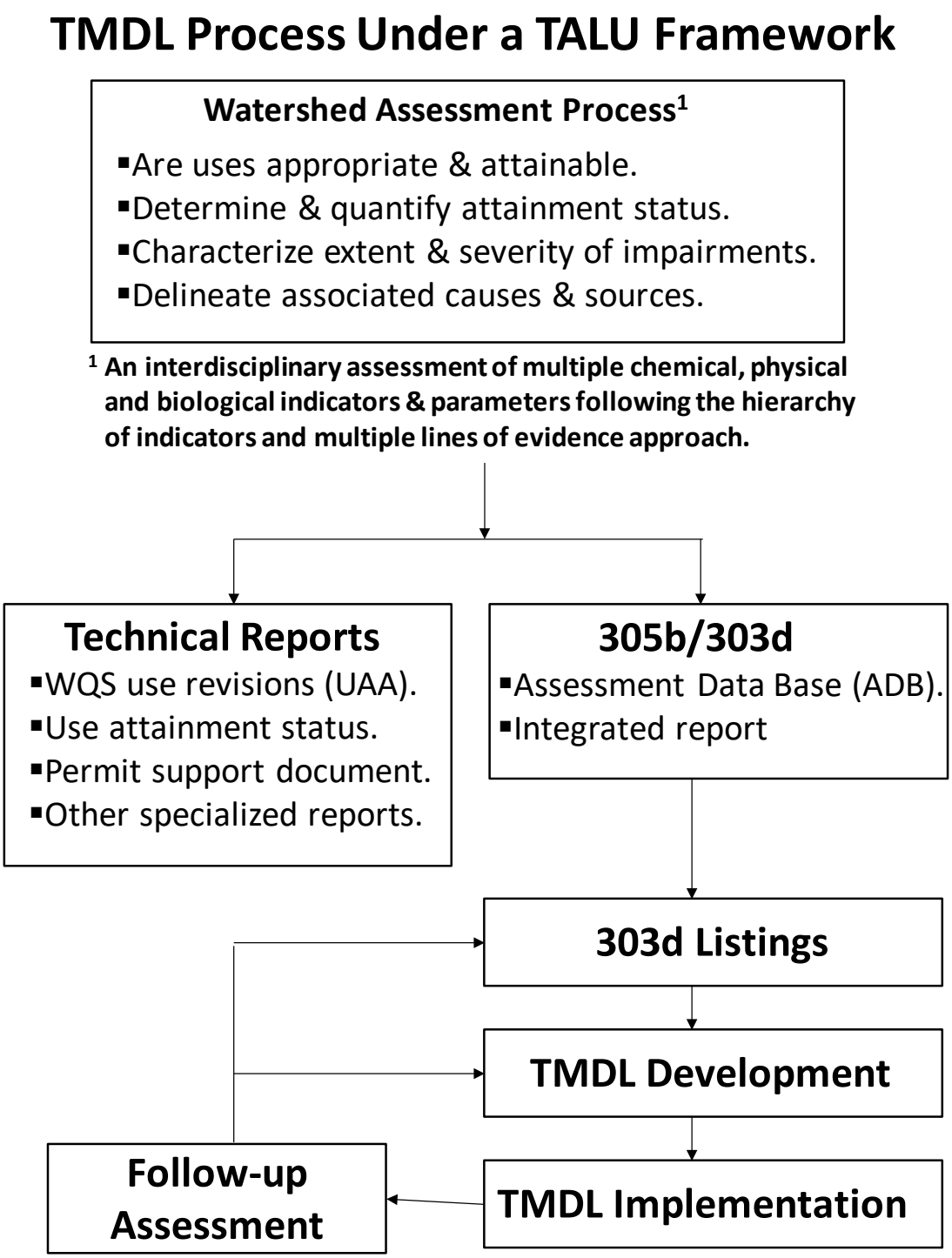

***Figure 4**. Key steps in a TMDL implementation framework within a TALU based framework supported by an intensive pollution survey monitoring design.*

assessment techniques are employed in bioassessments to meet three major objectives:

1. Determine if use designations and/or goals set for or assigned to a given water body are appropriate and attainable;

2. Determine the extent to which use designations (or equivalent classifications) assigned in the State WQS (or policies) are either attained or not attained and with the assignment of causes and sources for the latter; and,

3. Determine if changes in key ambient biological, chemical, or physical indicators have taken place over time, particularly before and after the implementation of point source pollution controls or best management practices for nonpoint sources.

The data gathered in a bioassessment is processed, evaluated, and synthesized in a comprehensive assessment report that addresses use attainability issues, future monitoring needs, problem discovery, or other actions which may be needed to resolve impairments or threats to designated uses. While the principal focus of a bioassessment is on the status of aquatic life, the status of other uses such as recreation and water supply, as well as human health concerns can also be addressed provided the data in support of those uses is collected and analyzed within the monitoring and assessment design.

MILWAUKEE RIVER BASIN AND MMSD SERVICE AREA WATERSHED BIOASSESSMENT

Proposed MMSD Watershed Monitoring Program

The MMSD Watershed Monitoring Plan was developed under the following general principles and concepts by:

1. Employing the principles of Adequate Monitoring (ITFM 1992, 1995; Yoder 1998) in selecting indicators and parameters and casting their role as indicators of stress, exposure, and response;

2. Employing an intensive pollution survey design that evaluates pollution from all sources and in keeping with its definition in the CWA. This requires more sites than a condition survey which relies on a comparatively greater extrapolation of data from a handful of sampled sites to many more unsampled sites and reaches.

3. Deriving regionally-based stressor thresholds using the database generated by the paired collection of biological, habitat, and chemical/physical data and subsequent analyses utilizing attributes of the two primary biological assemblages, fish and macroinvertebrates; and,

4. Providing a spatially comprehensive regional dataset to develop an Integrated Prioritization System (IPS) and affiliated "tool set" for more effectively managing river and stream quality and for setting priorities for restoration and protection.

The initial step in the development of the Plan was to conduct an inventory of existing monitoring and assessment sites in the Milwaukee River Basin and MMSD Service Area operated by MMSD, Wisconsin DNR (WDNR), the United States Geological Survey (USGS), the National Oceanic and Atmospheric Administration (NOAA), and local government and nongovernmental groups such as Ozaukee County, the Southeastern Wisconsin Regional Planning Commission (SEWRPC), and the Milwaukee Riverkeeper (MRK). An initial scoping of sites was done using the WDNR Surface Water Integrated Monitoring System (SWIMS) which revealed at least 1700 distinct sites throughout the Milwaukee River Basin and the MMSD service area. Additional sites were also revealed in the coverages provided by some of the organizations listed above. Each site was screened to determine what type of sampling was conducted, which chemical, physical, and biological indicators were included, and other considerations such as frequency of sampling, years of sampling, and if it was part of a larger and established monitoring network. These existing monitoring sites ranged from fixed chemical water quality only stations (e.g., MMSD) to periodic surveys (e.g., WDNR, USGS) to "one-off" samples for select chemical parameters. In some areas there were multiple sites in such close proximity that each effectively represented the same conditions within a stream or river reach. The occurrence of multiple overlapping and independently operated networks made conducting the initial inventory more of a challenge than was originally envisioned.

In determining which of these existing sites would be part of the intensive pollution survey design of the Plan, deference was given to sites where any biological data had been collected and to all of the MMSD fixed chemical and continuous monitoring stations so as to ensure continuity with those efforts. As is common to the synoptic monitoring designs reflected by these existing networks, sampling sites occurred primarily on the larger streams and rivers – very few if any sites were located in the upstream or "headwaters" portions of adjoining subwatersheds. The intensive pollution survey design includes a geometric delineation of sites (see description in Appendix A) to enhance the coverage of the smaller watersheds and primary headwater streams. It includes sites that drain less than 1-5 square miles, a population of sites that is not covered by any existing network that we are aware. Targeted sites were added to fill gaps revealed by the geometric site delineation process whenever necessary to support the delineation of longitudinal pollution profiles in the larger mainstem rivers and tributaries. The net result is a watershed assessment design consisting of more than 700 sites (includes ~30 regional reference sites) throughout the Milwaukee River Basin and the portion of the MMSD Service Area that includes the Oak Creek and parts of the Root River subbasins over a total drainage area of 1200 square miles (Appendix B and C). Executing a monitoring program for an area this large will necessitate a schedule of rotation over multiple years such as is employed by

the MSDGC and the Northeastern Illinois watershed groups. For example a rotation period of five years would translate to 140-150 sites sampled each year most of which would be the more easily sampled headwater stream sites. This would be most effectively accomplished within the subwatersheds that occur at the HUC10 scale which will necessitate bundling some of the smaller HUC10 watersheds together in a given year. These assessments would be performed annually with an assessment report for each year and with the IPS fully developed after one full rotation cycle. Executing the Plan at this level will require a commitment of adequate resources for the duration of the rotating watershed assessments and the ensuing IPS development and maintenance.

A full scale implementation of the Plan is not the only option for a new monitoring and assessment program. Other considerations could include restricting the Plan to the MMSD service area boundaries and/or other jurisdictional considerations and needs or reducing the spatial "resolution" by reducing the number of headwater sites. However, in keeping with the original directive to support watershed management at the same scale at which it is applied now or as anticipated in the future, reducing the spatial coverage will be accompanied by limitations on meeting that original directive. One way to evaluate the potential limitations of a less intensive spatial design is to consider site density per units of drainage area and/or sites per lineal mile of river and stream. The recommended design results in 1.6 $mi.^2$/site, but that assumes all of the delineated headwater sites will be sampleable, i.e., with sufficient standing water. A reduced subset of sampleable sites results in 1.8 $mi.^2$/site which is essentially the same as the MSDGC surveys (1.5 $mi.^2$/site) and not much different than that accomplished for the existing series of Northeastern Illinois watershed groups at 2.5 $mi.^2$/site. A reduced coverage would mean not including a significant fraction of the geometric panel 8 and 9 sites all of which are in the 1-2 $mi.^2$ drainage area bin for a total closer to 500 sites. As in Northeast Illinois this results in a spatial coverage that is *ten times* that of the existing monitoring networks operated by state and federal agencies in the Milwaukee River basin.

The differences between these two widely divergent spatial coverages will be realized in the derivation of stressor thresholds, the revelation and ranking of specific stressors, and in the over extrapolation of data and results from a single site to many more unsampled sites for the latter. These differences will not only influence where watershed management efforts are placed, but what those programs are aware of in terms of specific stressors and the mosaic of pollution impacts.

The results and analysis of the monitoring and bioassessment program can be used by MMSD and others to accomplish the following:

1. Determine the status of service area rivers and streams in quantitative terms, i.e., not only if the waterbody is impaired, but the spatial extent and severity of any impairments and the degree to which high quality conditions prevail;

2. Evaluate the appropriateness of existing aquatic life and recreational use designations and make recommendations for any changes to those designations – this will likely evolve as WDNR develops tiered aquatic life uses and biological criteria;

3. Determine the proximate stressors that result in observed impairments for the purpose of targeting management actions to those stressors; and,

4. Develop an Integrated Prioritization System (IPS) following the example of the IPS developed for the DuPage River Salt Creek Working Group (DRSCWG; Miltner et al. 2010) and the MSD of Greater Cincinnati (MBI 2015). This will produce a quantitative model and dashboard that focuses on parameters and stressors that best relate to aquatic resource condition and water quality. It will assist MMSD in making decisions not only about how to prioritize abatement projects for impaired sites, reaches, and watersheds, but also determine where to protect high quality sites that either already attain standards or are in exceptional condition above the CWA minimum expectations.

Project Scope

The MMSD study area consists of eight HUC10 watersheds including the entirety of the Milwaukee River Basin and the parts of the MMSD Service Area in the Root River and Oak Creek HUC10 watersheds (Figure 5). The MMSD Service Area serves a population of 1.2 million persons across 28 different municipalities.

Combined Geometric and Intensive Pollution Survey Sites

The delineation of recommended sampling locations for the Milwaukee River Basin and MMSD Service Area watersheds bioassessment was developed following a stepwise process. The geometric site selection process first requires the delineation of geometric panels which are ranges of drainage area based on a consistent starting point at the terminus of a HUC10 watershed. Nine geometric panels were derived and had to account for the HUC10 watersheds having different drainage sizes and some watersheds not having all of the geometric panels (Table 2). The points at which each drainage panel occurred were then located using ArcGIS v10.3 with the drainage area of each site calculated using USGS Stream Stats (Appendix A). These were then snapped to the National Hydrography Database (NHD) Stream Stats lines to allow the batch processing of drainage areas. The existing monitoring locations described above were then added and some of the geometric sites were snapped to these locations. Where multiple historical sites existed in close proximity preference was given to sites with existing fish and/or macroinvertebrate data over chemical/physical data alone. Any apparent gaps remaining at this point were filled by targeted sites to adequately cover point sources (mostly Wastewater Treatment Plants, WWTPs), significant dams (impoundments and tailwaters), and to fill gaps in the longitudinal continuum along mainstem streams and rivers.

Figure 5. *The Milwaukee River Basin and MMSD Service Area showing HUC10 watersheds included in the watershed bioassessment plan.*

The result is just more than 700 potential sites in the eight HUC10 watersheds across nine geometric panels and including sites of ~1 mi.^{2} (Table 3). This is the platform from which a monitoring and assessment effort at the site, reach, and watershed levels would be executed.

Indicators and Parameters

The allocation of indicators and parameters was done following the principles outlined previously for the adequate monitoring framework (see Table 1 and Figure 1). The biological, chemical, and physical indicators listed for each of the proposed sites in the eight HUC10 watersheds in Appendix C are grouped by category in keeping with the concept of core and supplemental parameters. Fish and macroinvertebrate assemblages are the two primary biological indicator groups that comprise the core biological indicators. These are accompanied by a qualitative habitat assessment (QHEI; Rankin 1989, 1995; Ohio EPA 2006) and field measured chemical/physical parameters at all sites. Demand and nutrient parameters are to be collected at all sites, but at varying frequencies based on the inherent risk of variation due to stream size and local watershed complexity. Commonly occurring heavy metals are to be collected at the mainstem and tributary sites and upstream and downstream of significant discharges and other major stressors particularly within urban areas. Organic scans are recommended for water column samples at selected sites as listed in Appendix C. Sediment chemical analysis for heavy metals and organic scan are recommended for mainstem sites, larger tributaries, and upstream and downstream from significant discharges and other potential stressors. As such the recommended indicator, parameter, and frequency coverage is risk based, i.e., analytical costs are incurred when there is a reasonable expectation of detecting specific chemicals and measuring their effects. Specific chemical parameters that are generally included are in Table 4, but which are beyond the core groups of parameters can be added based on an inventory of potential stressors in each watershed.

Biological and Chemical/Physical Methods

Biological sampling for fish and macroinvertebrate assemblage data should follow the established protocols of the WDNR. An important assumption of this plan is that an economy of effort will be achieved in the 7, 8, and 9 geometric panel sites due to their small size. At least 4-6 (or more) of these sites can be sampled each field day with the appropriate methods. The appropriate sampling protocols will be determined with the assistance and approval of WDNR. The biological monitoring team will need to demonstrate a grasp of these concepts and prove the ability to make the correct equipment selection decisions in the field.

Determination of Sampleability

In the smallest headwater streams, particularly the panel 8 and 9 sites, the issue of

Table 3*. Panels of drainage areas derived as part of the selection of monitoring locations using a geometric site selection process (see Appendix A).*

HUC10 Code	HUC10 Basin	Drainage Area (Km^2)	Drainage Area (Mi^2)	Geometric Panels (Mi^2)								
				1	2	3	4	5	6	7	8	9
0404000306	Lower Milwaukee River	430	166	≥216	83.1	41.6	20.8	10.4	5.2	2.6	1.30	<1.3
0404000305	Kinnickinnic River	65	25				24.8	12.5	6.2	3.1	1.50	<1.5
0404000304	Menomonee River	361	140	≥125	69.8	34.9	17.4	8.7	4.4	2.2	1.10	<1.1
0404000303	Cedar Creek	329	127	≥125	63.5	31.7	15.9	7.9	4.0	2.0	1.05	<1.05
0404000302	Upper Milwaukee River	712	275	≥138	68.7	34.4	17.2	8.6	4.3	2.1	1.05	<1.05
0404000301	North Branch Milwaukee River	380	147	≥126	73.4	36.7	18.3	9.2	4.6	2.3	1.10	<1.1
0404000203	Root River	342	198	≥127	99.0	49.5	24.8	12.4	6.2	3.1	1.50	<1.5
0404000202	Root River Canal	173	67			33.4	16.7	8.4	4.2	2.1	1.05	<1.05
0404000201	Oak Creek	135	52				26.0	13.0	6.5	3.3	1.60	<1.6

Table 4*. Results of the delineation of sites using a combined intensive pollution survey and geometric site selection process for the Milwaukee River Basin and the MMSD Service Area HUC10 watersheds. Reference sites are to be determined later.*

HUC10 Code	HUC10 Basin	Drainage Area (Km^2)	Drainage Area (Mi^2)	Number of Sites									
				1	2	3	4	5	6	7	8	9	Total
0404000306	Lower Milwaukee River	430	166	46	1	0	0	16	10	17	10	35	**135**
0404000305	Kinnickinnic River	65	25	0	0	0	7	6	4	1	1	2	**21**
0404000304	Menomonee River	361	140	9	6	10	11	14	10	11	12	27	**110**
0404000303	Cedar Creek	329	127	0	17	4	5	8	12	14	0	28	**88**
0404000302	Upper Milwaukee River	712	275	18	5	13	5	11	14	20	26	44	**156**
0404000301	North Branch Milwaukee River	380	147	1	0	3	3	11	16	14	8	21	**77**
0404000203	Root River	342	198	12	1	2	3	4	6	14	13	8	**63**
0404000202	Root River Canal	173	67	0	0	3	2	3	1	5	9	14	**37**
0404000201	Oak Creek	135	52	0	0	0	1	3	4	0	4	5	**17**
	Reference Sites (WIDNR, other)			To Be Determined									**30**
	Totals	**2926**	**1196**	**86**	**30**	**35**	**37**	**76**	**77**	**96**	**83**	**184**	**734**

"sampleability" will need to be addressed. Some of these streams will likely have intermittent or ephemeral flows during the summer-fall index period. The guidelines to be followed for determining if a biological or chemical sample should be collected is simply based on the presence of sufficient standing water from which a sample can be collected. Sites with intermittent flows should be sampled provided there are pools of at least 20 centimeters in depth. The established protocols should be followed for determining a sampling reach regardless of intermittency. For example, the fish sampling protocol calls for site reach lengths of 35-40 stream widths. If flow at the site is intermittent, the dry areas between the intermittent pools are to be included in the contiguous reach even though the dry areas would not be directly sampled. The same applies to the qualitative macroinvertebrate protocols.

Water Quality Assessment

All water quality samples will be collected as grabs during normal summer-fall flow conditions. Because chemical/physical data is being used in a supporting role and as an exposure indicator, the statistical rigor needed to validate water quality criteria exceedances is reduced. The frequency and parameter requirements have been scaled to the risk or likelihood of detecting a particular substance or parameter. We have also reserved the ability to add other parameters not included in the core demand, nutrient, or heavy metal parameter groups in Appendix A.

We also recommend that Datasondes be deployed in specific mainstem and tributary segments with suspected or known D.O. and nutrient enrichment issues. These should consist of multiple Datasondes deployed at the biological sites in a longitudinal "pollution survey" design to develop and understand the D.O. profile under summer extremes of temperature and low flow. The deployments should be done during the lowest flow and highest temperature weeks of the study period which generally occur between mid-July and early September. The segments and number of sites will be determined during detailed study planning.

Reference Sites

We recommend that least impacted reference sites be located both within and outside of the MMSD service area for biological, habitat, and chemical/physical data. This may require the addition of as many as 30 sites both within and outside of the study area if insufficient analogs are available within the service area. The first choice will be to locate existing WDNR reference sites with respect to keeping similarities in ecoregions and subregions as a guiding principle.

LONG-TERM MONITORING STRATEGY

The Plan also includes an outline for a long-term monitoring strategy. In line with the approach used by the DRSCW and MSDGC designs, this will include consideration of a sustained watershed assessment

Table 5*. List of options for chemical analytes by parameter groups that are listed in Appendix C for each Milwaukee River Basin sampling site*

Parameter Groups						
Field (Fi):	**Demand (De):**	**Nutrients (Nu):**	**Metals (Me)**	**Supplemental**	**Organics (O):**	**Sediment:**
Conductivity	Alkalinity	Benthic Chl a	Ag	*E. coli*	BNAs	Metals[1]
D.O.	BOD_5	Chlorophyll a	Al	Other pathogens	Pesticides	BNAs/PAH
pH	Chloride	NH3-N	As		VOCs	PCB
Temp.	COD	NO2-N	Be			Pesticides[2]
	Conductivity	NO3-N	Bo			VOCs
	Fluoride	TKN	Ca			
	pH	Total P	Cd			
	SSC	D.O. (Sonde)	Co			
	Sulfate		Cr			
	TDS		Cr^{+6}			
	TOC		Cu			
	TSS		Fe			
			Mg			
			Mn			
			Na			
			Ni			
			Pb			
			Se			
			Sr			
			Vd			
			Zn			
	- option to include if suspected source present.					
[1] - same list as water column metals.						
[2] - may include new generation compounds detected in USGS study (Van Metre 2014; metachlor, bifenthrin, atrazine, metalaxyl, dithiopyr, imidacloprid, fipronil, etc.).						

approach. As such, the goals and objectives described previously are essentially the same. To meet that objective there will be a need to develop and maintain a capacity and infrastructure to generate data, manage information, and develop the assessments.

A Rotating Basin Approach

By choosing to base the monitoring design on a major watershed basis, the watershed

bioassessment program is amenable to a “rotating” approach through time. Within this approach there can be flexibility in terms of which parts of each subwatershed are the subject of what kind of sampling after the baseline is established, i.e., problem areas or “hot spots” identified by the baseline assessment could be followed up with specific types and designs of biological, chemical, and physical monitoring and assessment and other types of follow-up investigations. It is recommended that the term of a rotating approach be defined along with other important details in a Phase II of this project.

The sequence of events within a given year from the initial screening of issues to detailed study planning through the production of a final assessment report is described in Table 6. This includes the major milestones and activities including the selection of specific subwatershed areas for monitoring, planning the monitoring activities, conducting the monitoring, data custody, data management, QA/QC, transformation of data into information, assessment and interpretation of the results, and the making of conclusions and recommendations via formal report. The major milestones are arranged sequentially and by major task. The process operates in a continuous cycle such that work will take place on as many as 2 or 3 different years of monitoring at any given time, i.e., while year 1 reports are being completed, year 2 planning is underway, etc. The process should be coordinated by the same personnel who develop the detailed plan of study and who also manage and oversee the reporting and analysis of the results. A written study plan, which delineates the study area boundaries, the scope and objectives, specific sampling locations, indicators, parameters, frequencies, and index sampling periods, is prepared for each subwatershed year. This plan serves as the blueprint for the data collection phase. Individual teams involved in the sampling are each responsible for assuring data quality, integrity, and adherence to chain-of-custody procedures. Data collected via this process is validated in accordance with an approved Quality Assurance Project Plan (QAPP).

Table 6. *Important timelines and milestones in the planning and execution of annual monitoring and assessment for the MMSD watershed assessment program.*

Milestone	Description of Activity
November - January: (Months 1-3)	Screening of the major hydrologic areas takes place by soliciting input from the various program offices.
February - April: (Months 4 thru 6)	Final prioritization of issues and definition of study areas. Resource allocation takes place and study team assignments are made.
May - June: (Months 7 thru 8)	Study planning takes place and consists of detailed map reconnaissance, review of historical monitoring efforts, and initial sampling site selection by the study team. Final study plans are used to develop logistics for each field crew.
July - October: (Months 9 thru 12)	Field sampling takes place with field crews operating somewhat independently on a day-to-day basis, but coordinated by the study plan and team leader. Study team communication takes place as necessary, especially to resolve unexpected situations.
October - February: (Months 12 thru 16)	Laboratory sample analysis takes place for chemical and biological parameters. Raw data is entered into relational databases for reduction and analysis. The study team meets to review monitoring information and to coordinate the data analysis and reporting effort.
November - May: (Months 13 thru 17)	Information about indicator levels 3-6 is retrieved, compiled, and used to produce analyses which will support the evaluation of status and trends and causal associations within the study area. Integration of the information is initiated.
May - July: (Months 17 thru 19)	The assessment process is completed by producing working copies of the assessment for review by the study team and a final edit for internal review. Final assessment approved by work group for supporting 303d, National Pollution Discharge Elimination System (NPDES), water quality standards (WQS) (*e.g.,* use designation revisions), and other programs.

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Appendix A

Combined Geometric and Intensive Pollution Survey Site Selection Protocol for Comprehensive Watershed Assessment

Appendix A: Combined Geometric and Intensive Pollution Survey Site Selection Protocol for Comprehensive Watershed Assessment

Developing information-effective spatial monitoring designs is a critical first step in the process of an adequate watershed monitoring program. One such design that was first implemented in Ohio is termed the "Geometric Site Selection" process. It has been used as part of the statewide five-year rotating basin approach since the late 1990s for watershed monitoring and assessment that supports use attainability analyses, TMDLs, NPDES permitting, and watershed planning by Ohio EPA. MBI has since used it for watershed assessments in Illinois, Indiana, Ohio, and Wisconsin. The Geometric design is generally employed at the 10 digit HUC scale in order to provide monitoring and assessment that addresses multiple water quality management objectives and baseline status assessments with the same data and analyses. This design effectively scales monitoring and assessment to the same spatial scale at which regulatory and watershed management programs are applied, i.e., it eliminates the otherwise common practice over extending the extrapolation of monitoring data to unmonitored sites.

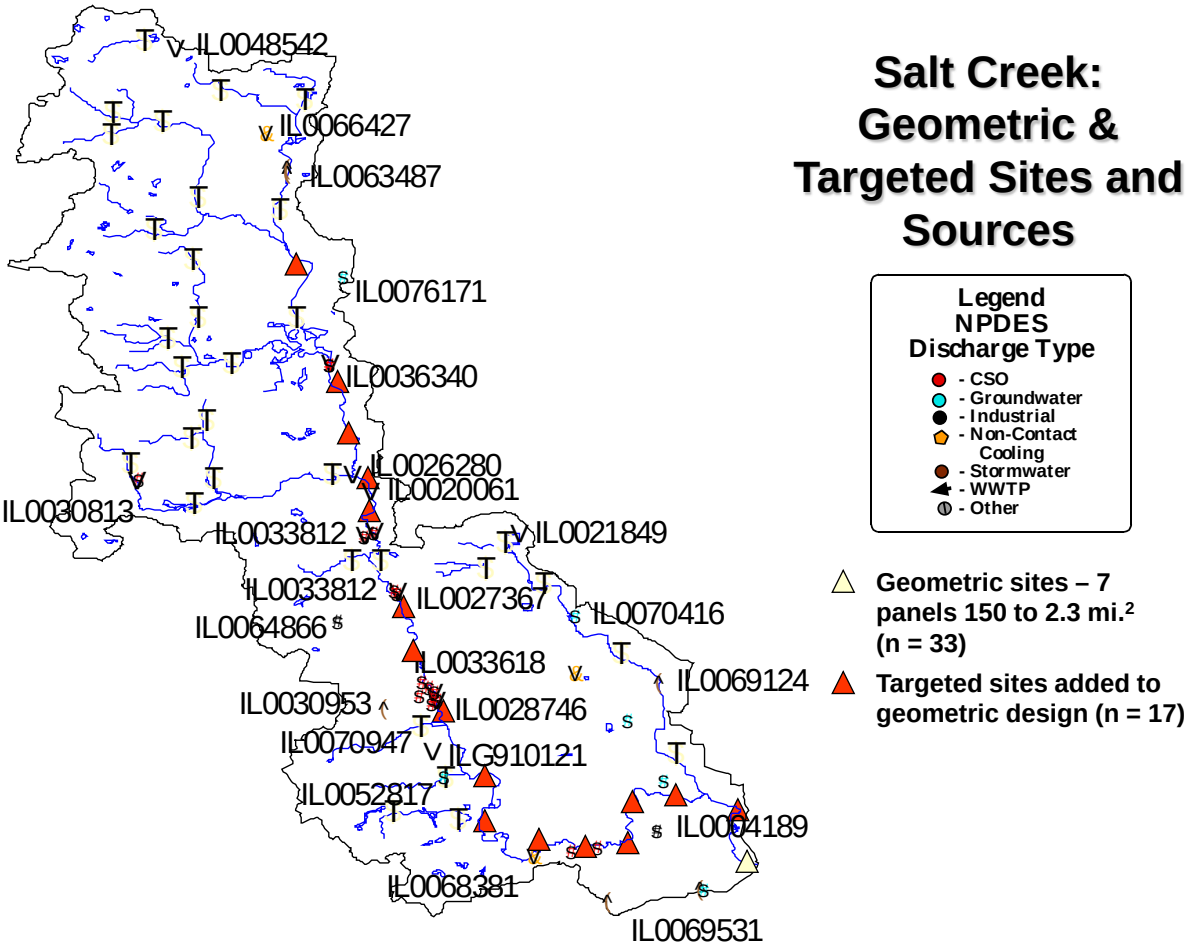
The Geometric Site Selection process allocates sites within a HUC10 watershed (generally 150-300 mi^2 in the Midwest U.S.) based on a geometric progression of drainage areas starting with the area at the mouth of the mainstem river or stream and proceeding upstream through the various tributaries to the primary headwaters (Table 1; Figure 1). Candidate sampling sites are

Appendix Table A-1*. Example of the derivation of geometric panels of drainage area in a trellised watershed based on the catchment size of the watershed at the mouth (316 mi^2). Panels are inverted from smallest to largest drainage areas.*

Geometric Panels	Inclusive Drainage Areas ($mi.^2$)	Geometric Sites[1]	Targeted Sites
Level 10:	<1 sq. mi.	22	0
Level 9:	1-2.5 sq. mi.	7	1
Level 8:	2.5-5 sq. mi.	4	10
Level 7:	5-10 sq. mi.	2	8
Level 6:	10-20 sq. mi.	3	3
Level 5:	20-40 sq. mi.	1	8
Level 4:	40-79 sq. mi.	0	2
Level 3:	79-158 sq. mi.	0	3
Level 2:	158-316 sq. mi.	1	8
Level 1:	>316 sq. mi.	1	2

[1] Geometric sites prior to desktop and field reconnaissance.

determined in a stratified-random manner and in accordance with the "available" stream and river sizes based on drainage area and mainstem and tributary system layout. This process alone, however, can leave gaps that can result in important pollution and stressor gradients not being covered and it is especially an issue with trellised (as opposed to dendritic) watersheds. To compensate, targeted sites are added to fill gaps that otherwise would leave important pollution gradients undetected. Therefore, it provides adequate coverage to better determine the extent and severity of impacts from point sources, habitat modifications, land use changes, and other stressors within a watershed (Appendix Figure 1). It also assures sufficient spatial coverage for conducting credible use attainability analyses. Together, the Geometric and targeted selection of sites comprise the Intensive Pollution Survey Design. The result is sufficient spatial coverage and the production of data that supports both status and stressor



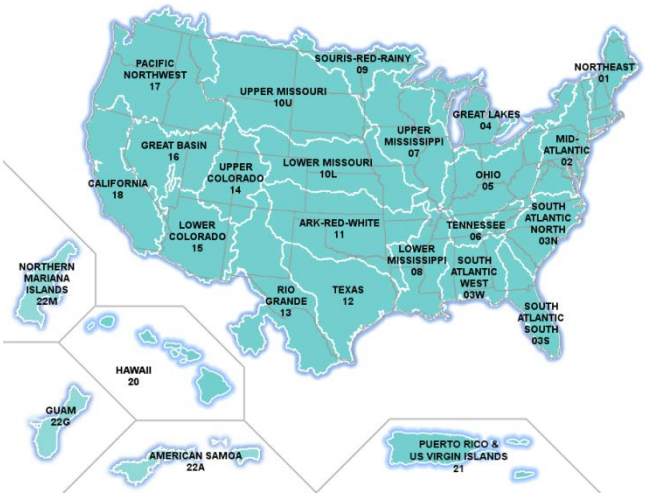
Appendix Figure A-1. *Results of applying the Intensive Pollution Survey Design in the Salt Creek (DuPage and Cook Counties, Illinois) subbasin. This design implemented for four surveys during 2007-2016.*

analyses that take into account overlying natural and human caused influences within the rivers and streams of a watershed and at *the same scale at which management programs are being applied.* It minimizes the need for the over extrapolation of monitoring results that can result in significant gaps and inaccuracies when management programs are implemented. It also resolves use attainability issues *before* status assessments are accomplished, standards are set, management requirements (e.g., via a TMDL) are formulated, and management actions are developed, not afterwards. As such it fosters proactive as opposed to reactive management and provides stakeholders a better opportunity to observe and influence the use of data before management actions are adopted. The stepwise methodology for conducting a Geometric Site Selection follows.

Geometric Site Selection Procedure

The original process for geometric site selection used the NHDPlus V1 data set, however; we used NHDPlus V2 which has a number of improvements compared to V1 including: "greatly improved 1:100K National Hydrography Dataset (NHD), greatly improved 1 arc-second (approximately 30 meter ground spacing) National Elevation Dataset (NED) and Nationally complete Watershed Boundary Dataset (WBD)." (McKay et al. 2018)[1] The NHDPlusV2data is available from http://www.horizon-systems.com/NHDPlus/NHDPlusV2_data.php (see below).

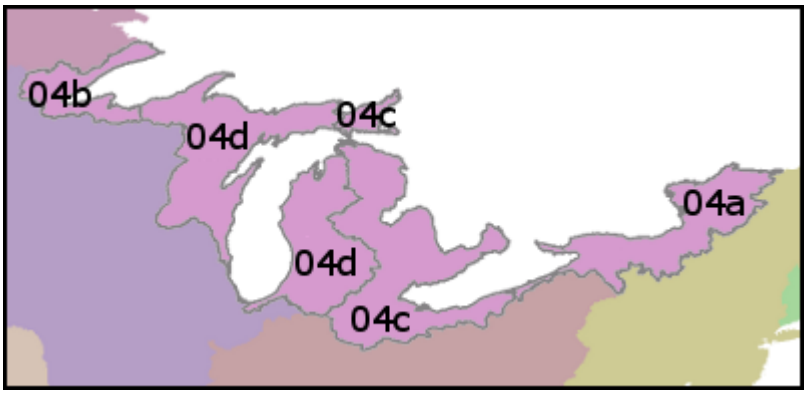
The first step was to select the region of interest from the map, which for the Milwaukee River basin is region 04:



***Appendix Figure A-2**. NHDPlus regions.*

[1] http://www.horizon-systems.com/nhdplus/nhdplusv2_home.php

Once a region was selected, users are directed to a new page containing the hydrologic regions of the drainage area. The map (pictured below) matches the file download list. For Milwaukee 04d was the area of interest.



***Appendix Figure A-3**. NHDPlus hydrologic regions.*

Each region has multiple files associated with it which vary and we downloaded all of them even though not all are needed for geometric site selection, other will be of use for other analyses. We then created a new ArcMap document and opened the NHD Plus V2 hydrology and the watershed boundaries for the Milwaukee River, Root River, Oak Creek and the Kinnickinnic River. Because of the large existing array of sampling sites we mapped all available sites coded by collecting entity and types of data available (e.g., fish, macroinvertebrate, water column chemistry (e.g., nutrients, chloride, sediment chemistry, continuous monitoring results). Our goal was to snap geometric sites to existing monitoring sites whenever possible.

Each NHDPlus V2 river segment has the downstream drainage area of the watershed above that pour point which we added as a label on the map. This allowed us to estimate the drainage size of sites to match the geometric site size panel of interest. We obtained existing sampling sites (chemistry, sediment, Wisconsin fish and benthos sites, Ozaukee Co. data, data from studies by USGS and NOAA) and used this data as a base coverage. We attempted to select sites by drainage panel in each Huc-10 watershed by using the estimated drainage area of NHD Plus V2 segments and if one of the existing data stations was nearby, we snapped the geometric site to these points. This helped create a link to historical data for trend assessment and links to stressor data. Where multiple historical sites existed we gave a preference to sites with existing fish and/or macroinvertebrate data over chemistry data alone. Where no existing sites were nearby we added a new station and these were put near access sites (bridges, nearby roads) where possible. This process was done in ArcGIS v10.3.

Exact drainage areas of each site will be calculated using the USGS Stream Stats v4 batch processing tool (USGS 2017).[1] We downloaded the hydrology coverage used by StreamStats and selected sites were snapped to this hydrology line to allow us to batch process these drainage areas in the future. After the geometric sites were added, additional sites upstream or downstream of WWTPs and significant dams (impoundment vs. tailwater) were added unless a geometric site could also serve to assess these potential stressor sources. In larger streams we added additional sites where the distance between sites was greater than about 3 miles or where fewer gaps occurred, but important potential stressor sources to a river (e.g., CSO/SSO pipes) intervened.

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[1] https://streamstatsags.cr.usgs.gov/ss_bp/

Appendix B

Allocation of Intensive Pollution Survey Sites by HUC10 Watershed in the Milwaukee River Basin and MMSD Service Area

Appendix Table B-1. *Delineation of intensive pollution survey sites for Milwaukee River Basin and MMSD Service Area rivers and streams organized by HUC10, geometric panel, and drainage area (largest to smallest in mi^2) for each site. The site origin and purpose and the coinciding MMSD, WDNR, SEWRPC, Ozaukee Co., NOAA, USGS, and Milwaukee River Keeper sites are cross-referenced with the MBI Site ID and Basin and Stream Code assigned to each (see below). The geometric panels are defined in the Plan text and Table 3. River miles were delineated by MBI from USGS Stream Stats in ArcMap (Excel file available from SWWT).*

***Appendix Table B-1**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Site Origin_Purpose	MMSD Site ID	Wisconsin DNR		Chloride Site ID	Total P Site ID	SEWRPC	Ozaukee Co. Fisheries Site ID	NOAA Site ID	USGS Site ID	Milwaukee River Keeper	Basin Code	Stream Code	Drainage Area (mi^2)	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location
					Fish Site ID	Macro Site ID																
0404000306	Lower Milwaukee River	MR01	Geometric, NOAA, CWQ	MS1170							M12	USGS 408717(		01	001	864	1	43.02457	-87.89806	0.1	Milwaukee River	Milwaukee Harbor Dst. I-794
0404000306	Lower Milwaukee River	MR02	Geometric	RI-08			10047960							01	001	700	1	43.03129	-87.91022	0.92	Milwaukee River	N. Water Str.
0404000306	Lower Milwaukee River	MR03	Geometric, CWQ	MS1102			413003							01	001	698	1	43.03374	-87.90980	1.1	Milwaukee River	Near Mouth
0404000306	Lower Milwaukee River	MR04	Chlorides, CWQ	MS1103; RI-07			413067							01	001	695	1	43.04056	-87.91158	1.59	Milwaukee River	Wells St. Bridge
0404000306	Lower Milwaukee River	MR05	NOAA								M11			01	001	695	1	43.04235	-87.91349	1.74	Milwaukee River	Between Juneau and E. State Str.
0404000306	Lower Milwaukee River	MR06	NOAA	RI-06							M10			01	001	694	1	43.05708	-87.89800	3.1	Milwaukee River	Dst. Humboldt Ave
0404000306	Lower Milwaukee River	MR07	Chlorides, Tailwater				10047992							01	001	690	1	43.05796	-87.89471	3.32	Milwaukee River	Between North Ave. Dam & N. Humboldt Ave.
0404000306	Lower Milwaukee River	MR08	Impoundment	RI-05										01	001	689	1	43.05950	-87.89384	3.43	Milwaukee River	North Avenue Impoundment U-1
0404000306	Lower Milwaukee River	MR09	WIDNR Fisheries, CWQ	MS1110	413072	413841								01	001	680	1	43.08311	-87.89251	5.12	Milwaukee River	Capital Drive
0404000306	Lower Milwaukee River	MR10	USGS				413640					USGS 0408700		01	001	679	1	43.09996	-87.90894	6.66	Milwaukee River	Estabrook Park
0404000306	Lower Milwaukee River	MR11	Chlorides				10012616	10012616					10012616	01	001	679	1	43.10139	-87.91028	6.78	Milwaukee River	Milwaukee River - S. of Estabrook Park Dam
0404000306	Lower Milwaukee River	MR12	Chlorides, Tailwater	RI-04			413927							01	001	679	1	43.10333	-87.91667	7.13	Milwaukee River	North Port Washington Rd.
0404000306	Lower Milwaukee River	MR13	Impoundment											01	001	666	1	43.10347	-87.91938	7.25	Milwaukee River	Estabrook Dam Impoundment
0404000306	Lower Milwaukee River	MR14	Chlorides	RI-03			413912							01	001	665	1	43.11889	-87.92028	8.78	Milwaukee River	Storm Sewer Outfall @Silver Spring Drive.
0404000306	Lower Milwaukee River	MR16	Impoundment											01	001	662	1	43.13387	-87.92831	10.36	Milwaukee River	6439 N Sunnypoint Lane
0404000306	Lower Milwaukee River	MR15	Total P					10040556					10040556	01	001	662	1	43.13250	-87.92821	10.27	Milwaukee River	Dst. Kletzsch Falls
0404000306	Lower Milwaukee River	MR17	Total P					413066						01	001	662	1	43.14313	-87.92610	11.52	Milwaukee River	Green Tree Rd..
0404000306	Lower Milwaukee River	MR18	Chlorides, CWQ	MS1111; RI-02			413663							01	001	650	1	43.17784	-87.95548	15.25	Milwaukee River	Brown Deer Rd..
0404000306	Lower Milwaukee River	MR19	Ozaukee Co. Fisheries							RBP1				01	001	642	1	43.19729	-87.96275	16.93	Milwaukee River	Dst. Trinity Cr. off Hwy 57 Park Access
0404000306	Lower Milwaukee River	MR20	Ozaukee Co. Fisheries							MT1				01	001	625	1	43.22167	-87.98111	18.95	Milwaukee River	Hwy 167
0404000306	Lower Milwaukee River	MR21	Tailwater											01	001	622	1	43.23092	-87.97968	19.74	Milwaukee River	Mequon-Thiensville Dam tailwater
0404000306	Lower Milwaukee River	MR22	Ozaukee Co. Fisheries					10017647		MT-I				01	001	621	1	43.23071	-87.97806	19.82	Milwaukee River	Thiensville Dam Impoundment
0404000306	Lower Milwaukee River	MR23	Ozaukee Co. Fisheries							MT-UD				01	001	615	1	43.23436	-87.95718	20.97	Milwaukee River	Mequon Boat Launch
0404000306	Lower Milwaukee River	MR24	Targeted											01	001	614	1	43.25175	-87.94301	23.38	Milwaukee River	Highland Road - Thiensville
0404000306	Lower Milwaukee River	MR25	USGS, CWQ	MS1101; RI-01								USGS 0408660	463098	01	001	601	1	43.28000	-87.94208	26.31	Milwaukee River	W. Pioneer Rd..
0404000306	Lower Milwaukee River	MR26	Ozaukee Co. Fisheries							Z1				01	001	600	1	43.28627	-87.95173	27.28	Milwaukee River	Dst. Cedar Creek
0404000306	Lower Milwaukee River	MR27	Tailwater; WWTP; Total P					10012501					10012501	01	001	471	1	43.30278	-87.95709	29.5	Milwaukee River	South End Of Lime Kiln Park - Grafton
0404000306	Lower Milwaukee River	MR28	Impoundment, WWTP							LK1				01	001	471	1	43.30593	-87.95302	29.82	Milwaukee River	Dst. Grafton WWTP; Lime Kiln Impound.
0404000306	Lower Milwaukee River	MR29	WWTP, Total P											01	001	471	1	43.30769	-87.95290	29.95	Milwaukee River	Ust. Grafton WWTP
0404000306	Lower Milwaukee River	MR30	WIDNR Fisheries, Tailwater		10010723									01	001	470	1	43.30939	-87.95142	30.08	Milwaukee River	Falls Rd..; former Chair Factory Dam
0404000306	Lower Milwaukee River	MR31	Impoundment											01	001	470	1	43.31139	-87.95028	30.25	Milwaukee River	Lime Kiln Impoundment
0404000306	Lower Milwaukee River	MR33	Tailwater										10012504	01	001	469	1	43.31839	-87.94900	30.76	Milwaukee River	Bridge Str. Dam tailwater
0404000306	Lower Milwaukee River	MR32	Ozaukee Co. Fish., Impound.											01	001	469	1	43.31887	-87.94937	30.8	Milwaukee River	Bridge Str. Dam impoundment
0404000306	Lower Milwaukee River	MR34	WIDNR Fisheries		10033845		10008816	10012505					10012505	01	001	468	1	43.33528	-87.94699		Milwaukee River	Ust. Interurban Br; Bridge St impoundment
0404000306	Lower Milwaukee River	MR35	WWTP; Total P											01	001	458	1	43.36747	-87.94665	35.21	Milwaukee River	Dst. Saukville WWTP; Cedar Sauk Rd.
0404000306	Lower Milwaukee River	MR36	WWTP; Total P											01	001	457	1	43.37500	-87.94231	35.8	Milwaukee River	Dst. Saukville WWTP
0404000306	Lower Milwaukee River	MR37	WWTP; Total P											01	001	456	1	43.37605	-87.94211	35.88	Milwaukee River	Ust. Saukville WWTP
0404000306	Lower Milwaukee River	MR38	WIDNR Fisheries		10047699	10047699		10047699		EH1			10047699	01	001	447	1	43.40818	-87.94090		Milwaukee River	Ehlers Park; upstream of Ehlers Creek
0404000306	Lower Milwaukee River	MR39	WIDNR Fisheries, Impound.		10033974	10033974								01	001	439	1	43.44040	-87.97174	41.91	Milwaukee River	East Hawthorne Drive
0404000306	Lower Milwaukee River	MR40	Geometric											01	001	432	1	43.46449	-87.96785	43.68	Milwaukee River	Dst. Waubedonia Park
0404000306	Lower Milwaukee River	MR41	Ozaukee Co. Fisheries					10018035		WAUB1			10018035	01	001	429	1	43.46838	-87.97308	44.15	Milwaukee River	Fredonia Canoe Launch
0404000306	Lower Milwaukee River	MR42	WWTP; Total P											01	001	428	1	43.47607	-87.97968		Milwaukee River	Dst. Fredonia WWTP; Off Co. Hwy. I
0404000306	Lower Milwaukee River	MR43	WIDNR Macroinv.			10037508		10037508					10037508	01	001	427	1	43.47320	-87.98971	45.48	Milwaukee River	Milwaukee River Dst. Co. Hwy. H
0404000306	Lower Milwaukee River	MR44	Tailwater, WWTP; Total P											01	001	427	1	43.47227	-87.99149	45.59	Milwaukee River	Ust. Fredonia WWTP - Waubeka VFW Park
0404000306	Lower Milwaukee River	MR45	Impoundment											01	001	427	1	43.47187	-87.99278	45.66	Milwaukee River	Waubeka Impoundment
0404000306	Lower Milwaukee River	MR46	Total P					10014722					10014722	01	001	426	1	43.47753	-88.00725	46.55	Milwaukee River	Waubeka (River Rd..)
0404000306	Lower Milwaukee River	GRAN02	Total P					10033652					10033652	01	2GC	85	2	43.08509	-88.04833	0.05	Grantosa Creek	At mouth
0404000306	Lower Milwaukee River	LINC01	Geometric											01	300	20	5	43.10929	-87.93008	0.34	Lincoln Creek	At mouth
0404000306	Lower Milwaukee River	LINC02	Chlorides	LC-05			10038205							01	300	20	5	43.11378	-87.93353	0.76	Lincoln Creek	Green Bay Ave.
0404000306	Lower Milwaukee River	LINC03	Total P					10043574					10043574	01	300	19.0	5	43.11158	-87.94251	1.24	Lincoln Creek	Meaux Park
0404000306	Lower Milwaukee River	LINC04	Ozaukee Co. Fisheries		10014165					LC1				01	300	18.5	5	43.10893	-87.95118	1.75	Lincoln Creek	Between Lancaster and Fairmont Streets
0404000306	Lower Milwaukee River	LINC05	WIDNR Macroinv.			413746								01	300	18.0	5	43.10242	-87.95309	2.23	Lincoln Creek	32nd Street
0404000306	Lower Milwaukee River	LINC06	WIDNR Macroinv.			413739								01	300	17.0	5	43.09689	-87.95806	2.91	Lincoln Creek	36th and Congress Street
0404000306	Lower Milwaukee River	LINC07	USGS	LC-04			413738					SGS 04086941		01	300	16.6	5	43.09718	-87.97225	3.62	Lincoln Creek	47th Street
0404000306	Lower Milwaukee River	LINC09	Geometric; WIDNR Macroinv.			10010570								01	300	15.0	5	43.10009	-87.98083	4.12	Lincoln Creek	54TH Street
0404000306	Lower Milwaukee River	LINC10	WIDNR Macroinv.			413743								01	300	14.8	5	43.10352	-87.98678	4.55	Lincoln Creek	60th St.
0404000306	Lower Milwaukee River	LINC11	WIDNR Macroinv.			10010573								01	300	14.7	5	43.10663	-87.99066	4.86	Lincoln Creek	Dst. W. Stark Street
0404000306	Lower Milwaukee River	LINC12	Ozaukee Co. Fisheries	LC-03		10012162	413778			LC2				01	300	14.0	5	43.11959	-87.98390	6	Lincoln Creek	Silver Spring Rd..
0404000306	Lower Milwaukee River	LINC13	WIDNR Macroinv.			10010575								01	300	12.2	5	43.12506	-87.97807	6.55	Lincoln Creek	Dst. RR E. of N. 55th Street
0404000306	Lower Milwaukee River	LINC14	WIDNR Macroinv.			10012164								01	300	12.1	5	43.12919	-87.97669	6.87	Lincoln Creek	Foot bridge in Havenswoods
0404000306	Lower Milwaukee River	LINC15	Geometric	LC-02		10010576	10004042							01	300	12.0	5	43.13359	-87.97584	7.2	Lincoln Creek	51st and Woolworth
0404000306	Lower Milwaukee River	PC01	Geometric					10012500						01	020	12.0	5	43.23208	-87.98326		Pigeon Creek	Dst. Cedarburg
0404000306	Lower Milwaukee River	PC02	USGS					10012500				SGS 0408669	10012500	01	020	11.5	5	43.23388	-87.98558		Pigeon Creek	Williamsburg Drive - Theinsville
0404000306	Lower Milwaukee River	PC03	Ozaukee Co. Fisheries			10022036				PC1				01	020	10.0	6	43.23488	-87.99007		Pigeon Creek	Seminary Drive Bridge
0404000306	Lower Milwaukee River	PC04	Ozaukee Co. Fisheries					463206		PC2			463206	01	020	9.0	6	43.25075	-87.99058		Pigeon Creek	Highland Road - Thiensville
0404000306	Lower Milwaukee River	MOLE01	Chlorides				10008817	10008817					10008817	01	040	8.0	6	43.34898	-87.96560		Un Creek	Maple Road
0404000306	Lower Milwaukee River	PC05	Geometric											01	020	8.0	6	43.25234	-87.99200		Pigeon Creek	Along Ozaukee Interurban Trail Highland Rd.
0404000306	Lower Milwaukee River	MOLE02	Chlorides				10008815							01	040	7.5	6	43.35253	-87.97122		Un Cr	Ust. Pleasant Valley Road
0404000306	Lower Milwaukee River	MOLE03	Chlorides				10016375							01	040	6.0	6	43.36789	-87.96857		Uncr (Mole Creek)	Ust. Cedar Sauk Rd..
0404000306	Lower Milwaukee River	PC06	Total P					10030238					10030238	01	020	6.0	6	43.25517	-88.00333		U.T. to Pigeon Creek	Dst. Wauwautosa Rd..

***Appendix Table B-1**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Site Origin_Purpose	MMSD Site ID	Wisconsin DNR		Chloride Site ID	Total P Site ID	SEWRPC	Ozaukee Co. Fisheries Site ID	NOAA Site ID	USGS Site ID	Milwaukee River Keeper	Basin Code	Stream Code	Drainage Area (mi^2)	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location
					Fish Site ID	Macro Site ID																
0404000306	Lower Milwaukee River	FC01	Geometric					10039638					10039638	01	050	5.2	6	43.46793	-87.95410	0.9	Fredonia Creek	Wenzel Ave.
0404000306	Lower Milwaukee River	MOLE04	Geometric				10046985							01	040	5.2	6	43.37650	-87.96831		Mole Creek	S. of Hillcrest
0404000306	Lower Milwaukee River	UL01	Geometric			10028774				UC2			10028773	01	030	5.2	6	43.30942	-87.91398		Ulao Creek	Falls Rd.. E. of St. Hwy 43
0404000306	Lower Milwaukee River	PC07	Geometric											01	022	5.1	7	43.25894	-88.00978		U.T. to Pidgeon Creek	Ust. W. Hawthorne Rd..
0404000306	Lower Milwaukee River	GRAN01	Ozaukee Co. Fisheries							UN6-1				01	2??	5.0	7	0.00000	0.00000		Grantosa Creek	Webster Park
0404000306	Lower Milwaukee River	MOLE05	Chlorides				10047105							01	040	5.0	7	43.38750	-87.96750		Mole Creek	Dst. St. Hwy. 33 - Restoration Reach
0404000306	Lower Milwaukee River	UL02	OZAUKEE				10046983			UC-G				01	030	4.8	7	43.31740	-87.91680		Ulao Creek	Gateway RR crossing
0404000306	Lower Milwaukee River	TC01	Geometric					10033530		TC1			10033530	01	015	4.0	7	43.20032	-87.96890	0.33	Trinity Creek	Cedarburg Rd.. - Mequon
0404000306	Lower Milwaukee River	LINC16	Geometric			10012165				LC3				01	300	4.0	7	43.13947	-87.97485		Lincoln Creek	Dst. W. Green Tree Rd..
0404000306	Lower Milwaukee River	UL03	Ozaukee Co. Fisheries			10031114	10028775			UC3				01	030	4.0	7	43.32057	-87.91661		Ulao Creek	St. Hwy. 60
0404000306	Lower Milwaukee River	UL04	Chlorides				10046982							01	030	3.9	7	43.32420	-87.91601		Ulao Creek	Dst. Helms Creek
0404000306	Lower Milwaukee River	UL05	Ozaukee Co. Fisheries				10046981			UC4				01	030	3.8	7	43.32490	-87.91590		Ulao Creek	Ust. Helms Creek
0404000306	Lower Milwaukee River	BC01	Geometric					10037441		BC1			10037441	01	014	3.2	7	43.18352	-87.96418	0.3	Beaver Creek	St. Hwy. 57
0404000306	Lower Milwaukee River	U.T.L17	Geometric	SB-04			10047971	10037442						01	013	2.9	7	43.17231	-87.96216	0.17	U.T. at RM 14.91	Ust. N. Green Bay Court
0404000306	Lower Milwaukee River	IC01	Geometric	IC-04			10029949	10029949		IC1				01	010	2.8	7	43.16242	-87.93145	0.13	Indian Creek	Dst. Bradley Road
0404000306	Lower Milwaukee River	RC01	Geometric											01	048	2.6	7	43.41971	-87.94134	0.05	Riverside Drive Creek	At confluence with Milwaukee R.
0404000306	Lower Milwaukee River	U.T.L15	Geometric											01	052	2.6	7	43.47993	-88.00635	0.1	2nd U.T. to L. Milwaukee R	Ust. River Drive
0404000306	Lower Milwaukee River	FC02	Geometric											01	050	2.6	7	43.49004	-87.95661		Fredonia Creek	Ust. Willow Valley Road
0404000306	Lower Milwaukee River	MOLE06	Geometric											01	040	2.6	7	43.39348	-87.97678		Mole Creek	St. Hwy 33
0404000306	Lower Milwaukee River	PC08	Geometric											01	022	2.6	7	43.27202	-88.01375		U.T. to Pidgeon Creek	Ust. W. Bonniwell Rd..
0404000306	Lower Milwaukee River	U.T.L02	Chlorides	SB-03			10047970						10047970	01	013	2.5	8	43.16716	-87.97003		Southbranch Creek	Ust. N. 47th Street
0404000306	Lower Milwaukee River	U.T.L06	Geometric											01	027	2.4	8	43.23449	-87.94151	0.1	U.T. to Milwaukee River	N. County Lane - Theinsville
0404000306	Lower Milwaukee River	UL06	Geometric				10046976							01	030	2.2	8	43.33424	-87.90898		Ulao Creek	Dst. Kaul Creek
0404000306	Lower Milwaukee River	TC02	Geometric							TC2				01	015	2.1	8	43.19621	-87.98402		Trinity Creek	Baehr Rd..
0404000306	Lower Milwaukee River	U.T.L13	Geometric											01	051	2.0	8	43.46955	-87.98781	0.2	U.T. to L Milwaukee R	Co. Hwy. H
0404000306	Lower Milwaukee River	IC01	WIDNR Macroinv.			10022032								01	010	1.8	8	43.16522	-87.92670	0.45	Indian Creek	N. River Rd.
0404000306	Lower Milwaukee River	LINC17	Geometric	LC-01			10047956							01	300	1.6	8	43.15417	-87.98495		Lincoln Creek	Dst. N. 60th Street
0404000306	Lower Milwaukee River	IC02	Chlorides	IC-02			10047773							01	010	1.5	8	43.16935	-87.90785	1.92	Indian Creek	E. Dean Road
0404000306	Lower Milwaukee River	U.T.L03	Chlorides	SB-02			10047969							01	013	1.4	8	43.16455	-87.97953		Southbranch Creek	Dst. N 55th Street
0404000306	Lower Milwaukee River	U.T.L04	Geometric	SB-01			413934							01	013	1.3	8	43.16317	-87.98271		Southbranch Creek	Bradley Rd..
0404000306	Lower Milwaukee River	IC03	Geometric	IC-03			10047955			IC2				01	010	1.2	9	43.16696	-87.91138	1.62	Indian Creek	Ust. N. Port Washington Road
0404000306	Lower Milwaukee River	IC05	Geometric											01	011	1.0	9	43.16317	-87.92711	0.1	U.T. to Indian Creek	W. Bradley Road
0404000306	Lower Milwaukee River	KC01	Geometric							KC1				01	033	1.0	9	43.33437	-87.90870	0.1	Kaul Creek	Ust. confluence with Ulao Creek
0404000306	Lower Milwaukee River	MK01	Geometric	10043982				10043982						01	021	1.0	9	43.25310	-87.99176	0.1	Mee-Kwon Creek	Ust. confluence with Pigeon Creek
0404000306	Lower Milwaukee River	MOLE08	Geometric											01	041	1.0	9	43.33780	-87.96110	0.1	U.T. to Mole Creek	Cedara Creek Rd.
0404000306	Lower Milwaukee River	MOLE09	Geometric											01	042	1.0	9	43.38904	-87.96670	0.1	U.T. to Mole Creek	State Hwy. 33
0404000306	Lower Milwaukee River	PC09	Geometric											01	022	1.0	9	43.25382	-87.99838	0.1	U.T. to Pidgeon Creek	N. Wauwatosa Rd..
0404000306	Lower Milwaukee River	PC11	Geometric											01	023	1.0	9	43.25821	-88.02018	0.1	U.T. to U.T. to Pidgeon Creek	W. Hawthorne Rd..
0404000306	Lower Milwaukee River	TC04	Geometric							TC3				01	016	1.0	9	43.20109	-87.97793	0.1	U.T. to Trinity Creek	N. Meadow Rd..
0404000306	Lower Milwaukee River	U.T.L05	Geometric											01	026	1.0	9	43.22899	-87.94237	0.1	U.T. to Milwaukee R. @RM	W. Ranch Road
0404000306	Lower Milwaukee River	U.T.L08	Ozaukee Co. Fisheries							UN3-1				01	028	1.0	9	43.24945	-87.94401	0.1	U.T. to Milwaukee R. @RM	N. Fieldwood Rd.. - Rotary Park Creek
0404000306	Lower Milwaukee River	U.T.L09	Geometric											01	045	1.0	9	43.38384	-87.94060	0.1	U.T. to Milwaukee R. @RM	Ust. Dekora Str. - Grady Park
0404000306	Lower Milwaukee River	U.T.L10	Geometric											01	046	1.0	9	43.38361	-87.93312	0.1	U.T. to Milwaukee R. @RM	E. Green Bay Ave.
0404000306	Lower Milwaukee River	U.T.L11	Geometric											01	047	1.0	9	43.40851	-87.93826	0.1	U.T. to Milwaukee R. @RM	Ust. C o. Hwy. W
0404000306	Lower Milwaukee River	U.T.L12	Geometric											01	049	1.0	9	43.44188	-87.96808	0.1	U.T. to Milwaukee R. @RM	Ust. Hawthorne Drive
0404000306	Lower Milwaukee River	PC12	Geometric											01	024	1.0	9	43.26397	-88.00514	0.2	U.T. to Pidgeon Creek	Ust. W. Bonniwell Rd..
0404000306	Lower Milwaukee River	LDCC01	Geometric					10048220		UN4-1			10048220	01	017	1.0	9	43.19848	-87.95692	0.26	Lac du Cours Creek	W. Le Mont Blvd.
0404000306	Lower Milwaukee River	BDP01	Geometric				10040929	10040929		BDC2, BDC1				01	012	1.0	9	43.16203	-87.95245	0.84	Brown Deer Park Creek	Brown Deer Park
0404000306	Lower Milwaukee River	IC04	Chlorides	IC-01			10047954							01	010	1.0	9	43.17103	-87.90254	2.26	Indian Creek	Dst. N. Manor Lane
0404000306	Lower Milwaukee River	BC01	Geometric							BC2				01	014	1.0	9	43.17843	-87.99433		Beaver Creek	Ust. Brown Deer Road
0404000306	Lower Milwaukee River	CWC01	Total P					10047916					10047916	01	301	1.0	9	43.12355	-87.93954		Crestwood Creek	Marne Ave.
0404000306	Lower Milwaukee River	FC03	Geometric											01	050	1.0	9	43.50444	-87.95483		Fredonia Creek	Ust. Belgium Kohler Rd..
0404000306	Lower Milwaukee River	MOLE07	Geometric											01	040	1.0	9	43.41115	-87.97467		Mole Creek	W. Center Rd..
0404000306	Lower Milwaukee River	PC10	Geometric											01	022	1.0	9	43.28281	-88.02376		U.T. to Pidgeon Creek	Home Corners Road
0404000306	Lower Milwaukee River	RC02	Geometric											01	048	1.0	9	43.43570	-87.93415		Riverside Drive Creek	Dst. E Hawthorne Drive
0404000306	Lower Milwaukee River	TC03	Geometric											01	015	1.0	9	43.19502	-87.99706		Trinity Creek	Dst. N. Wauwatosa Rd..
0404000306	Lower Milwaukee River	U.T.L07	Geometric											01	027	1.0	9	43.22133	-87.92022		U.T. to Milwaukee R. @RM	Mequon Rd.. and St. Hwy 43
0404000306	Lower Milwaukee River	U.T.L14	Geometric											01	051	1.0	9	43.45510	-87.98936		U.T. to Milwaukee R. @RM	Dst. River Park Road
0404000306	Lower Milwaukee River	U.T.L16	Geometric											01	052	1.0	9	43.48663	-87.99544		U.T. to Milwaukee R. @RM	Co. Hwy. H
0404000306	Lower Milwaukee River	VGC01	Geometric											01	025	1.0	9	43.23966	-87.95154		Villa Grove Park Creek	W. Freistadt Rd..
0404000306	Lower Milwaukee River	UL07	Geometric											01	030	0.9	9	43.33520	-87.90883	0.1	Ulao Creek	Kaul Property
0404000306	Lower Milwaukee River	LINC18	Geometric			10010581								01	300	0.8	9	43.15174	-88.00058		Lincoln Creek	N. 76th Street
0404000306	Lower Milwaukee River	UL08	Geometric											01	032	0.7	9	43.28265	-87.92687	0.1	U.T. to Ulao Creek	Ust. W. Pioneer Rd.
0404000306	Lower Milwaukee River	UL09	Geometric											01	032	0.7	9	43.28288	-87.92255	0.1	U.T. to Ulao Creek	N. Port Washington Rd.
0404000306	Lower Milwaukee River	CREST01	Geometric											01	301	0.5	9	43.12084	-87.93978	0.56	Crestwood Creek	Raleigh Ave.
0404000305	Kinnickinnic River	KR01	Geometric; NOAA	RI-19			10047962				M18			01	100	24.8	4	43.02361	-87.90361	0.12	Kinnickinic River	Opposite River Front Launch Site

***Appendix Table B-1**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Site Origin_Purpose	MMSD Site ID	Wisconsin DNR Fish Site ID	Wisconsin DNR Macro Site ID	Chloride Site ID	Total P Site ID	SEWRPC	Ozaukee Co. Fisheries Site ID	NOAA Site ID	USGS Site ID	Milwaukee River Keeper	Basin Code	Stream Code	Drainage Area (mi^2)	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location
0404000305	Kinnickinnic River	KR02	Chlorides	RI-18			10047961							01	100	24.0	4	43.01694	-87.90194		Kinnickinnic River	E. Greenfield Avenue
0404000305	Kinnickinnic River	KR03	NOAA, CWQ	MS1104; RI-14	I									01	100	23.3	4	43.00896	-87.90726	1.25	Kinnickinnic River	Dst. Kinnickinnic Ave.
0404000305	Kinnickinnic River	KR04	NOAA								M17			01	100	23.0	4	43.00623	-87.91402	1.75	Kinnickinnic River	Ust. W. Beecher Street
0404000305	Kinnickinnic River	KR05	Chlorides, CWQ	MS1108			413907							01	100	20.0	4	42.99611	-87.91334	2.49	Kinnickinnic River	Ust. S. 1st Street and St. Hwy. 38
0404000305	Kinnickinnic River	KR06	USGS	RI-13			413741					SGS 04087160		01	100	19.0	4	42.99640	-87.91908	2.85	Kinnickinnic River	43rd St.
0404000305	Kinnickinnic River	KR07	USGS				413817					SGS 0408715		01	100	18.8	4	42.99728	-87.92616	3.22	Kinnickinnic River	11th Street
0404000305	Kinnickinnic River	WP01	Geometric	RI-35			10047965							01	110	12.0	5	42.99038	-87.95245	0.03	Wilson Park Creek	Ust. Confluence with Kinnickinnic R.
0404000305	Kinnickinnic River	ULAO01	Ozaukee Co. Fisheries			10028773	10028773	10028773		UC1				01	130	12.0	5	43.26544	-87.93427	0.62	Ulao Creek	Bonniwell Rd.. at Oriole Lane
0404000305	Kinnickinnic River	ULAO02	Geometric							UN1-1				01	130	11.0	5	43.28008	-87.92705		Ulao Creek	Pioneer Rd.. - Mequon
0404000305	Kinnickinnic River	WP02	Ozaukee Co. Fisheries							WP1				01	110	10.0	5	42.98753	-87.95203	0.3	Wilson Park Creek	St. Lukes Hospital
0404000305	Kinnickinnic River	KR08	Chlorides	RI-12			415022							01	100	10.0	5	42.99111	-87.94861	4.94	Kinnickinnic River	27th Street
0404000305	Kinnickinnic River	KR09	Geometric											01	100	8.0	5	42.99050	-87.95480	5.29	Kinnickinnic River	St. Lukes Hospital
0404000305	Kinnickinnic River	KR10	Geometric	RI-34				10030403					10030403	01	100	6.0	6	42.99714	-87.96768	6.48	Kinnickinnic River	43rd Street
0404000305	Kinnickinnic River	WP03	Geometric; Ozaukee Co. Fish.					413814		WP2			413814	01	110	6.0	6	42.97271	-87.94009		Wilson Park Creek	20th Place
0404000305	Kinnickinnic River	KR11	Geometric			10037429		10032024					10032024	01	100	3.1	6	42.99982	-87.97706	7.11	Kinnickinnic River	KK River Pkwy. Pedestrian Bridge
0404000305	Kinnickinnic River	WP04	Geometric											01	110	3.1	6	42.95687	-87.90684		Wilson Park Creek	Gmia Outfall 7
0404000305	Kinnickinnic River	ULAO03	Geometric							UN2-1				01	131	1.6	7	43.26527	-87.93097		U.T. to Ulao Creek	W. Bonniwell Road
0404000305	Kinnickinnic River	HCO1	Geometric											01	112	1.4	8	42.95942	-87.91372	0.1	Holmes Ave. Creek	Dst. Layton Ave
0404000305	Kinnickinnic River	KR12	Geometric					10037439					10037439	01	100	1.0	9	42.98338	-87.98495	8.94	Kinnickinnic River	57th Street and Holt - Lyons Park
0404000305	Kinnickinnic River	EC01	Geometric											01	111	1.0	9	42.95301	-87.88393		Edgerton Channel	Pennsylvania Ave.
0404000304	Menomonee River	MEN01	Geometric	RI-17			413013							01	200	139	1	43.03242	-87.91226	0.08	Menomonee River	2nd Street
0404000304	Menomonee River	MEN02	Geometric			10037446								01	200	139	1	43.03240	-87.92153	0.58	Menomonee River	Ust. N. 6th Street
0404000304	Menomonee River	MEN03	Chlorides	RI-11			413014							01	200	138	1	43.03194	-87.92583	0.8	Menomonee River	Between 16th St. and 6th St. Viaduct
0404000304	Menomonee River	MEN04	NOAA, CWQ	CT07RL										01	200	138	1	43.03284	-87.93464	1.36	Menomonee River	Valley Fields
0404000304	Menomonee River	MEN05	NOAA, Chlorides	RI-20			10047963				M13			01	200	137	1	43.03252	-87.94508	1.79	Menomonee River	Ust. 25th Street
0404000304	Menomonee River	MEN06	Geometric	RI-10				10031609					10031609	01	200	136	1	43.02462	-87.95921	2.79	Menomonee River	Canoe Launch W. of S. 35th Street
0404000304	Menomonee River	MEN07	WIDNR Fisheries		10011253	10021356								01	200	135	1	43.02502	-87.96568	3.12	Menomonee River	Miller Park - Dst. S. Bridge)
0404000304	Menomonee River	MEN08	Targeted											01	200	135	1	43.04291	-87.97636	4.89	Menomonee River	50th Place Dst. Pedestrian Bridge
0404000304	Menomonee River	MEN09	Targeted	RI-09										01	200	125	1	43.04271	-87.99317		Menomonee River	Jacobus Park
0404000304	Menomonee River	MEN10	USGS; Geometric; CWQ	MS1105			413675					SGS 0408712		01	200	123	2	43.04550	-88.00030	6.16	Menomonee River	70th Street Bridge
0404000304	Menomonee River	MEN11	Targeted											01	200	111	2	43.04880	-88.00791	6.74	Menomonee River	Hart Park
0404000304	Menomonee River	MEN12	Targeted											01	200	109	2	43.05581	-88.02483	7.92	Menomonee River	Dst. 90th Street Outfall
0404000304	Menomonee River	MEN13	Geometric					10011232					10011232	01	200	88	2	43.06139	-88.03559	8.65	Menomonee River	Ust. North Ave.
0404000304	Menomonee River	MEN14	Targeted; Chlorides	RI-32			10032513							01	200	83	2	43.07500	-88.03649	9.76	Menomonee River	Burleigh Street
0404000304	Menomonee River	LMEN01	Geometric	RI-22			10032512							01	250	80	2	43.10522	-88.05471	0.01	Little Menomonee River	At mouth
0404000304	Menomonee River	MEN15	WIDNR Fisheries	RI-21	10011261			10011261					10011261	01	200	49	3	43.11260	-88.07131	13.95	Menomonee River	127th Str. - Butler Frontier Park
0404000304	Menomonee River	MEN16	Total P					10030026					10030026	01	200	47	3	43.11923	-88.07421	14.82	Menomonee River	Silver Spring Rd..
0404000304	Menomonee River	LILY01	Geometric				10032538	10032538						01	232	42	3	43.14481	-88.08115		Lilly Creek	Ust. Brentwood Drive
0404000304	Menomonee River	LILY03	WIDNR Macroinv.			10037395		10011397						01	232	40	3	43.10910	-88.08180	0.3	Lilly Creek	Ust. Overview Drive
0404000304	Menomonee River	MEN17	WIDNR Fisheries		10010588	10010588		10030048					10030048	01	200	40	3	43.16840	-88.08460	19.87	Menomonee River	Ust. Lily Road
0404000304	Menomonee River	LILY02	WIDNR Macroinv.			10031952								01	232	40	3	43.10485	-88.10043		Lilly Creek	Co. Hwy. YK
0404000304	Menomonee River	MEN18	WIDNR Fisheries		10030680			10030680					10030680	01	200	35	3	43.17482	-88.08958	20.45	Menomonee River	Menomonee Falls
0404000304	Menomonee River	MEN19	Total P					10016155					10016155	01	200	35	3	43.17362	-88.09355	20.67	Menomonee River	Riverside Park - Ust. Nor-X-Way Tributary
0404000304	Menomonee River	MEN20	USGS; Geometric; CWQ	MS1130								SGS 0408703		01	200	35	3	43.17296	-88.10405	21.23	Menomonee River	Pilgrim Rd..
0404000304	Menomonee River	MEN21	Total P; Tailwater					10014605					10014605	01	200	32	3	43.17860	-88.11374	21.92	Menomonee River	Lepper Dam tailwater
0404000304	Menomonee River	MEN22	Impoundment											01	200	30	4	43.17860	-88.11374		Menomonee River	Lepper Dam impoundment
0404000304	Menomonee River	MEN23	Tailwater											01	200	28	4	43.18496	-88.11685		Menomonee River	Sugar Co. Dam tailwater
0404000304	Menomonee River	MEN24	Impoundment											01	200	28	4	43.18496	-88.11685		Menomonee River	Sugar Co. Dam impoundment
0404000304	Menomonee River	MEN25	Total P	RI-16			10032510							01	200	25	4	43.19223	-88.13300	23.62	Menomonee River	Co. Hwy. Q
0404000304	Menomonee River	LMEN02	Ozaukee Co. Fisheries							LM1				01	250	20	4	43.11259	-88.05181	0.58	Little Menomonee River	West Willard Ave.
0404000304	Menomonee River	LMEN03	USGS					10032540				SGS 0408707	10032540	01	250	19.7	4	43.12350	-88.04357	1.52	Little Menomonee River	Bike Trail Bridge off of W. Boblink Ave.
0404000304	Menomonee River	LMEN04	WIDNR Fisheries		10037783	10037783		10032540						01	250	19.0	4	43.12516	-88.04121	1.66	Little Menomonee River	Ust. Appleton Ave
0404000304	Menomonee River	UND01	USGS; Geometric	UC-07			10047977					SGS 0408708		01	230	18.5	4	43.05483	-88.04639	0.81	Underwood Creek	Ust. U.S. 45 - Wauwatosa
0404000304	Menomonee River	UND02	Ozaukee Co. Fisheries, CWQ	MS1132		10037398				UWC1		USGS 4087088		01	230	18.0	4	43.04858	-88.04687	1.26	Underwood Creek	Dst. St. Hwy. 100 overpass
0404000304	Menomonee River	MEN26	Geometric					10016339					10016339	01	200	17.7	4	43.21392	-88.13974	25.43	Menomonee River	Ust. Of Lilac Rd.. - Schoen Laufen Park
0404000304	Menomonee River	LMEN05	Geometric		10031614	10031614	10032751							01	250	17.0	4	43.13635	-88.03236	2.63	Little Menomonee River	W. Leon Terrace
0404000304	Menomonee River	UND03	Ozaukee Co. Fisheries	UC-06		10014159	413779			UWC2				01	230	15.0	5	43.04322	-88.05786	2.01	Underwood Creek	115th Street
0404000304	Menomonee River	LMEN06	Ozaukee Co. Fisheries	ML-02			10047958			LM2				01	250	14.2	5	43.14942	-88.02605	3.69	Little Menomonee River	Ust. N. Granville Road
0404000304	Menomonee River	LMEN07	Ozaukee Co. Fisheries			10039298				LM3				01	250	14.0	5	43.15591	-88.02683	4.15	Little Menomonee River	Calumet Rd.. W
0404000304	Menomonee River	LMEN08	WIDNR Macroinv.			10037401								01	250	12.0	5	43.16293	-88.02673	4.66	Little Menomonee River	Dst. Bradley Rd..
0404000304	Menomonee River	MEN27	Chlorides	RI-36			10032509							01	200	11.0	5	43.23622	-88.11749	27.46	Menomonee River	St. Hwy. 145 bridge
0404000304	Menomonee River	HON01	USGS									SGS 0408711		01	220	10.7	5	43.04255	-88.01031		Honey Creek	N. of Aurora Hospice
0404000304	Menomonee River	HON02	USGS; Geometric							HC1		SGS 0408711		01	220	10.3	5	43.04416	-88.00432	0.13	Honey Creek	Honey Creek Parkway - Wauwatosa
0404000304	Menomonee River	UND04	Geometric	UC-03			10047973							01	230	10.0	5	43.03702	-88.06737	2.88	Underwood Creek	Ust. 124th Street at W. Bleumound Rd..
0404000304	Menomonee River	LMEN09	Geometric	ML-01			10016014			CLRD1				01	250	10.0	5	43.19208	-88.03813	6.94	Little Menomonee River	Dst. County Line Rd..
0404000304	Menomonee River	MEN28	Geometric											01	200	9.8	5	43.24052	-88.11218		Menomonee River	Ust. Fond du Lac Ave.

***Appendix Table B-1**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Site Origin_Purpose	MMSD Site ID	Wisconsin DNR Fish Site ID	Wisconsin DNR Macro Site ID	Chloride Site ID	Total P Site ID	SEWRPC	Ozaukee Co. Fisheries Site ID	NOAA Site ID	USGS Site ID	Milwaukee River Keeper	Basin Code	Stream Code	Drainage Area (mi^2)	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location
0404000304	Menomonee River	UND05	USGS				10043109	10043109				SGS 04087085		01	230	9.5	5	43.04290	-88.07926		Underwood Creek	Elm Grove Park
0404000304	Menomonee River	HON03	Chlorides	HC-03			10047938							01	220	9.0	5	43.03894	-88.01237		Honey Creek	Dst. W. Wisconsin Ave.
0404000304	Menomonee River	LMEN10	Geometric, CWQ	MS1135	10014154	10012125						USGS 4087050		01	250	8.0	5	43.20681	-88.03834	8.03	Little Menomonee River	W. Donges Bay Rd.. and N. Granville Rd..
0404000304	Menomonee River	HON04	Ozaukee Co. Fisheries			10037400				HC2				01	220	8.0	5	43.03424	-88.01380		Honey Creek	Dst. Honey Creek Pkwy.
0404000304	Menomonee River	UND06	WIDNR Fisheries		10014160	10012151		10041370					10043570	01	230	8.0	5	43.05898	-88.08808		Underwood Creek	Adj. Underwood Parkway
0404000304	Menomonee River	UND07	Total P				10043109	10043109					10043109	01	230	7.0	6	43.04616	-88.08119	3.99	Underwood Creek	Elm Grove Park
0404000304	Menomonee River	WILLC01	USGS		673269	673269	673269	673269				SGS 04087019	673269	01	242	6.3	6	43.20670	-88.14275	0.06	Willow Creek	Maple Rd.. - Germantown
0404000304	Menomonee River	UND08	Chlorides	UC-02			10047972							01	230	6.0	6	43.05600	-88.08700	4.81	Underwood Creek	Marcella Rd..
0404000304	Menomonee River	MEN29	Geometric											01	200	5.2	6	43.24007	-88.09379		Menomonee River	Pleasant View Drive
0404000304	Menomonee River	UND10	Geometric	UC-05			10047976							01	231	5.0	6	43.03014	-88.06738	0.1	South Branch	Dst. I-94
0404000304	Menomonee River	NX01	Geometric											01	240	5.0	6	43.17836	-88.08683	0.28	Nor-X Channel	Dst. Fountain Blvd.
0404000304	Menomonee River	WILLC02	Geometric											01	242	5.0	6	43.20960	-88.15389	0.68	Willow Creek	Ust. Co. Hwy. Y
0404000304	Menomonee River	UND09	Geometric	UC-01			10040624							01	230	5.0	6	43.06404	-88.10657	7.01	Underwood Creek	Franklin Wirth Park
0404000304	Menomonee River	HON05	Chlorides	HC-02			10047936							01	220	5.0	6	43.02807	-88.01781		Honey Creek	84th Str. and W O'Connor Str.
0404000304	Menomonee River	GOLD01	Geometric					10044031					10044031	01	260	4.7	6	43.23413	-88.12643	0.17	Goldendale Creek	Friestadt Road
0404000304	Menomonee River	LILY04	USGS				10032538	10032538				SGS 04087031	10032538	01	232	4.3	7	43.14815	-88.08143		Lilly Creek	Good Hope Rd.. - Menomonee Falls
0404000304	Menomonee River	LMEN11	Geometric											01	250	4.2	7	43.21183	-88.03374	8.44	Little Menomonee River	Between Granville and Swan Roads
0404000304	Menomonee River	HON06	Chlorides	HC-01			10047934							01	220	4.0	7	42.99889	-88.01454		Honey Creek	Ust. W. Arthur Avenue
0404000304	Menomonee River	HON07	Chlorides	HC-05			10047950							01	220	3.0	7	42.96916	-87.98939		Honey Creek	S. Honey Creek Drive. near Armour Park
0404000304	Menomonee River	LMC01	WIDNR Fisheries		10011234	10011234								01	255	2.8	7	43.22207	-88.04368	1.09	Little Menomonee Creek	Ust. Mequon Rd. (St. Hwy. 167)
0404000304	Menomonee River	LMC02	WIDNR Fisheries		10022033	10022033								01	255	2.5	7	43.22456	-88.04908	1.43	Little Menomonee Creek	E. of Asbury Woods Drive
0404000304	Menomonee River	MEN35	Geometric											01	272	2.2	7	43.25651	-88.11778	0.2	U.T. to Menomone R. @RM	Dst. Rockfield Road
0404000304	Menomonee River	NOY01	Geometric					413011					413011	01	251	2.2	7	43.14092	-88.02528	0.22	Noyes Creek at RM 3.05	91st Street
0404000304	Menomonee River	MEN30	Geometric											01	200	2.2	7	43.25400	-88.07563		Menomonee River	W. Highland or Wasaukee Rd.s.
0404000304	Menomonee River	DP01	Geometric					10033651					10033651	01	238	2.0	8	43.16278	-88.06054	0.2	Driveetzka Park Creek	W. Bradley Rd..
0404000304	Menomonee River	DD01	Geometric											01	235	2.0	8	43.05616	-88.10710	0.32	Dousman Ditch	W. Roualt Street
0404000304	Menomonee River	GOLD02	Geometric											01	260	2.0	8	43.24403	-88.16255	2.2	Goldendale Creek	Goldendale Rd..
0404000304	Menomonee River	LMC03	Geometric											01	255	2.0	8	43.23580	-88.04693	2.26	Little Menomonee Creek	W. Friestadt Rd..
0404000304	Menomonee River	LMEN12	Geometric											01	250	2.0	8	43.22503	-88.02551	9.45	Little Menomonee River	Ust. Mequon Road
0404000304	Menomonee River	NX02	Geometric											01	240	2.0	8	43.20156	-88.07664		Nor-X Channel	Donges Bay Road
0404000304	Menomonee River	UND11	Geometric											01	231	2.0	8	43.01579	-88.06558		S Branch Underwood Creek	Greenfield Park Golf Course
0404000304	Menomonee River	GOLD04	Geometric											01	261	1.8	8	43.23786	-88.14557	0.1	U.T. to Goldendale Creek	Maple Road
0404000304	Menomonee River	WILLC05	Geometric											01	243	1.8	8	43.21097	-88.15864	0.1	U.T. to Willow Creek	Dst. Hilltop Rd..
0404000304	Menomonee River	WILLC03	Geometric											01	242	1.8	8	43.20123	-88.16461		Willow Creek	Beech Drive
0404000304	Menomonee River	MEN38	Geometric											01	274	1.7	8	43.24321	-88.08877	0.1	U.T. to Upper Menomone R. @	E. Lovers Lane
0404000304	Menomonee River	LMC05	Geometric											01	25?	1.1	8	43.21854	-88.04346		U.T. to L. Menomonee (L. Menom. Cr.?)	N. Granville Rd..
0404000304	Menomonee River	DD03	Geometric											01	237	1.0	9	43.06387	-88.11130	0.1	U.T. to Dousman Ditch	Wirth Park
0404000304	Menomonee River	LILY06	Geometric											01	234	1.0	9	43.09194	-88.10096	0.1	U.T. to Lily Creek	Dst. W. Capitol Drive
0404000304	Menomonee River	LMEN14	Geometric											01	253	1.0	9	43.18863	-88.03602	0.1	U.T. to L. Menomonee R. @RM. 6.64	Joseph Lichter Park
0404000304	Menomonee River	MEN32	Geometric											01	204	1.0	9	43.22659	-88.12593	0.1	U.T. to Menomonee R. @RM	Division Road
0404000304	Menomonee River	MEN33	Geometric											01	241	1.0	9	43.19923	-88.13817	0.1	U.T. to Menomonee R. @RM	350 m E. of Maple Rd.
0404000304	Menomonee River	MEN37	Geometric											01	273	1.0	9	43.24658	-88.10561	0.1	U.T. to Menomone R. @RM	Driveway off of Pleasant Valley Drive
0404000304	Menomonee River	UND12	Geometric	UC-04										01	236	1.0	9	43.01616	-88.05918	0.1	U.T. to S. Branch Underwood Cr.	Ust. Greenfield Avenue
0404000304	Menomonee River	WILLC07	Geometric											01	244	1.0	9	43.19645	-88.16576	0.1	U.T. to Willow Creek	County Line Rd..
0404000304	Menomonee River	NOY03	Geometric											01	252	1.0	9	43.14292	-88.01165	0.2	Noyes Creek	W. Denver Ave.
0404000304	Menomonee River	LMC04	Geometric											01	255	1.0	9	43.24476	-88.04335	2.93	Little Menomonee River	N. Granville Road
0404000304	Menomonee River	LMEN13	Geometric											01	250	1.0	9	43.23590	-88.02038	10.25	Little Menomonee River	Freistadt Road
0404000304	Menomonee River	DD02	Geometric											01	235	1.0	9	43.04241	-88.12169		Dousman Ditch	N. of Lake Rd. - opposite side of lake
0404000304	Menomonee River	DP02	Geometric											01	238	1.0	9	43.17892	-88.06581		Driveetzka Park Creek	N. 124th Street
0404000304	Menomonee River	GOLD03	Geometric											01	260	1.0	9	43.23906	-88.17356		Goldendale Creek	Johnson Lane
0404000304	Menomonee River	GOLD05	Geometric											01	261	1.0	9	43.23668	-88.16042		U.T. to Goldendale Creek	Datebrook Drive
0404000304	Menomonee River	HON08	Chlorides	HC-04			10047953							01	220	1.0	9	42.95675	-87.97192		Honey Creek	Dst. W. Loomis Road
0404000304	Menomonee River	LILY05	Geometric											01	233	1.0	9	43.15901	-88.08332		U.T. to Lily Creek	Lily Road
0404000304	Menomonee River	MEN31	Geometric											01	200	1.0	9	43.25840	-88.06872		Menomonee River	Wasaukee Road
0404000304	Menomonee River	MEN34	Geometric											01	271	1.0	9	43.24463	-88.11578		U.T. to Menomone R. @RM	Dst. Division Road
0404000304	Menomonee River	MEN36	Geometric											01	272	1.0	9	43.26580	-88.13974		U.T. to Menomone R. @RM	Dst. Maple Rd..
0404000304	Menomonee River	MEN39	Geometric											01	274	1.0	9	43.23156	-88.08369		U.T. to Menomone R. @RM	County Aire Drive
0404000304	Menomonee River	NOY02	Geometric											01	252	1.0	9	43.13778	-88.01720		U.T. to Little Menomonee R, @RM	N. 85th Street
0404000304	Menomonee River	NX03	Geometric											01	240	1.0	9	43.21474	-88.06269		Nor-X Channel	Mequin Road
0404000304	Menomonee River	WILLC04	Geometric											01	242	1.0	9	43.19695	-88.18262		Willow Creek	Amy Belle Rd..
0404000304	Menomonee River	WILLC06	Geometric											01	243	1.0	9	43.21395	-88.17089		U.T. to Willow Creek	Appleton Ave.
0404000304	Menomonee River	BURC01	Chlorides				413932							01	210	0.20	9	43.02639	-87.92553	0.79	Burnham Canal	11th Street
0404000304	Menomonee River	BURC02	NOAA								M15			01	210	0.13	9	43.08260	-87.92531	0.76	Burnham Canal	Ust. I-43
0404000303	Cedar Creek	CC01	Geometric											01	400	126	1	43.29060	-87.95098	0.05	Cedar Creek	Ust. confluence with Milwaukee River
0404000303	Cedar Creek	CC02	Ozaukee Co. Fisheries			10037504				CC1				01	400	125	1	43.28414	-87.97157	1.36	Cedar Creek	Ust. Green Bay Rd..
0404000303	Cedar Creek	CC03	WWTP; Total P											01	400	124	2	43.28770	-87.97190	1.61	Cedar Creek	Dst. Cedarburg WWTP - Hamilton Dam Imp.

Appendix Table B-1. *Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Site Origin_Purpose	MMSD Site ID	Wisconsin DNR		Chloride Site ID	Total P Site ID	SEWRPC	Ozaukee Co. Fisheries Site ID	NOAA Site ID	USGS Site ID	Milwaukee River Keeper	Basin Code	Stream Code	Drainage Area (mi^2)	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location
					Fish Site ID	Macro Site ID																
0404000303	Cedar Creek	CC04	WIDNR Fisheries		463141	463084		463084		CC2			463084	01	400	124	2	43.29430	-87.97019	2.31	Cedar Creek	Ust. Co. Hwy. T
0404000303	Cedar Creek	CC05	Tailwater											01	400	124	2	43.30149	-87.96658	3.5	Cedar Creek	Dst. Wire & Nail Dam - Cedarburg
0404000303	Cedar Creek	CC07	Impoundment											01	400	124	2	43.30100	-87.97127	3.75	Cedar Creek	Wire & Nail Dam impoundment - Cedarburg
0404000303	Cedar Creek	CC08	Tailwater											01	400	124	2	43.30103	-87.97444	3.75	Cedar Creek	Columbia Mill Dam tailwater
0404000303	Cedar Creek	CC09	Impoundment											01	400	124	2	43.29946	-87.97644	3.75	Cedar Creek	Columbia Mill Dam impoundment
0404000303	Cedar Creek	CC10	Tailwater											01	400	123	2	43.29716	-87.98604	4.67	Cedar Creek	Columbia Road - Cedarburg
0404000303	Cedar Creek	CC11	Impoundment											01	400	123	2	43.29797	-87.98708	4.75	Cedar Creek	Ruck Millpond
0404000303	Cedar Creek	CC12	WWTP; Total P											01	400	123	2	43.29114	-87.97523		Cedar Creek	Ust. Cedarburg WWTP - Hamilton Pond
0404000303	Cedar Creek	CC13	Tailwater											01	400	122	2	43.30097	-87.98822	4.97	Cedar Creek	Cedarburg Woolen Mill Tailwater - Bridge Str.
0404000303	Cedar Creek	CC14	Impoundment											01	400	122	2	43.30177	-87.98832	5.03	Cedar Creek	Cedarburg Woolen Mill Imp. - Bridge Street
0404000303	Cedar Creek	CC15	Ozaukee Co. Fisheries					10034839		GLP			10034839	01	400	120	2	43.32103	-87.97778	6.56	Cedar Creek	Dst. St. Hwy 60 off of Keup Rd..
0404000303	Cedar Creek	CC16	Ozaukee Co. Fisheries, CWQ	MS1158; CC01			10028907	10028907		CCCB			10028907	01	400	117	2	43.33829	-88.00330	9.95	Cedar Creek	Covered Bridge Road
0404000303	Cedar Creek	CC17	WIDNR Macroinv.			10034010								01	400	115	2	43.34443	-88.00448	10.67	Cedar Creek	Ust. Kaehlers Mill Road
0404000303	Cedar Creek	CC18	Total P					673108					673108	01	400	85	2	43.34455	-88.07755	16.25	Cedar Creek	Co. Hwy. M
0404000303	Cedar Creek	CC19	Tailwater											01	400	73	2	43.33509	-88.11781	19.1	Cedar Creek	Division Rd.. - Dst. Jackson Marsh
0404000303	Cedar Creek	CC20	Geometric; Impoundment											01	400	65	2	43.33542	-88.12215	19.34	Cedar Creek	Co. Hwy. G near Jackson
0404000303	Cedar Creek	CC21	Tailwater											01	400	63	3	43.33382	-88.12603		Cedar Creek	Dst. Jackson Marsh WLA Pool 2
0404000303	Cedar Creek	CC22	Impoundment											01	400	63	3	43.33382	-88.12603		Cedar Creek	Ust. Jackson Marsh WLA Pool 2
0404000303	Cedar Creek	CC23	WWTP; Total P											01	400	55	3	43.32351	-88.14237	20.4	Cedar Creek	S. 60th W. of Jackson
0404000303	Cedar Creek	CC24	WWTP; Total P											01	400	54	3	43.32351	-88.14237	20.76	Cedar Creek	S. 60th W of Jackson
0404000303	Cedar Creek	CC25	Total P					10016327					10016327	01	400	18.0	4	43.32859	-88.19884	23.35	Cedar Creek	Dst. Mayfield Rd..
0404000303	Cedar Creek	LCC01	Geometric											01	450	18.0	4	43.29492	-88.16021		Little Cedar Creek	Western Ave.
0404000303	Cedar Creek	CC26	Geometric; Tailwater											01	400	17.6	4	43.33240	-88.21439		Cedar Creek	Lily Road to Schweitzer Dam
0404000303	Cedar Creek	CC27	Tailwater											01	400	16.2	4	43.33763	-88.22543	27.27	Cedar Creek	Ust. Co. Hwy. C
0404000303	Cedar Creek	CC28	Impoundment											01	400	16.0	4	43.33228	-88.21925	26.67	Cedar Creek	Schweitzer Dam impoundment
0404000303	Cedar Creek	CC29	Impoundment											01	400	15.0	5	43.33785	-88.22657	27.27	Cedar Creek	Wacker Dam impoundment
0404000303	Cedar Creek	CC30	Total P					673249					673249	01	400	14.0	5	43.35358	-88.23397	29.06	Cedar Creek	Ust. Pleasant Valley Rd..
0404000303	Cedar Creek	NBCC01	WIDNR Fisheries		10022038	10022038								01	420	11.8	5	43.36218	-88.06961		N. Branch Cedar Creek	Ust. Co. Hwy. NN
0404000303	Cedar Creek	LCC01	Total P					10008847					10008847	01	450	11.0	5	43.28024	-88.15816		Little Cedar	Pioneer Rd.
0404000303	Cedar Creek	CC31	Geometric					10016204					10016204	01	400	10.0	5	43.37825	-88.24641	32.16	Cedar Creek	Dst. Hillside Drive.
0404000303	Cedar Creek	CC36	Geometric		10030345	10030345								01	403	8.0	5	43.35281	-88.04879		Mud Creek	Co. Hwy NN
0404000303	Cedar Creek	KBCC01	Geometric											01	455	8.0	5	43.28029	-88.13531		Kressen Branch L. Cedar Cr.	Dst. Division Road
0404000303	Cedar Creek	LCC02	Geometric											01	450	8.0	5	43.27245	-88.18189		Little Cedar Creek	Ust. Shadow Lane
0404000303	Cedar Creek	NBCC02	Geometric											01	420	7.7	6	43.36817	-88.06425		N Br Cedar Creek	Ust. Co. Hwy. NN
0404000303	Cedar Creek	EVGC01	Geometric											01	435	7.6	6	43.34002	-88.11864	0.1	Evergreen Creek	Dst. Division Road
0404000303	Cedar Creek	CC43	Geometric		10034008	10034008								01	430	6.0	6	43.32442	-88.08395		U.T. to ?	Dst. Co. Hwy. M
0404000303	Cedar Creek	CBC01	Geometric					10038233					10038233	01	430	5.0	6	43.32224	-88.06950		Cedarburg Creek	Ust. St. Hwy. 60
0404000303	Cedar Creek	LCC03	Geometric											01	450	5.0	6	43.27454	-88.20218		Little Cedar Creek	Ust. Mayfield Rd.. - Ofrichfield
0404000303	Cedar Creek	MUD01	Geometric					10012522					10012522	01	403	4.2	6	43.36715	-88.03960		Mud Creek	Cedar Sauk Rd..
0404000303	Cedar Creek	NBCC06	Geometric											01	421	4.0	6	43.36721	-88.06962	0.1	U.T. to N. Br. Cedar Creek	Co, Hwy. SS
0404000303	Cedar Creek	PSC01	Geometric					10008829					10008829	01	460	4.0	6	43.30765	-88.18137	0.44	Polk Spring	Co. Hwy. P - Jackson
0404000303	Cedar Creek	EVGC02	Geometric					10016886					10016886	01	435	4.0	6	43.35425	-88.12684		Evergreen Creek	Ust. Feed Lot
0404000303	Cedar Creek	FRC01	Geometric											01	440	4.0	6	43.33849	-88.15984		Friedans Creek	Cedar Creek Rd..
0404000303	Cedar Creek	KBCC02	Geometric											01	455	4.0	6	43.27675	-88.10415		Kressen Br. L. Cedar Creek	Pioneer Rd..?
0404000303	Cedar Creek	NBCC03	Geometric											01	420	4.0	6	43.38663	-88.05208		N. Branch Cedar Creek	Ust. St. Augustine Road
0404000303	Cedar Creek	CC37	Geometric											01	405	3.9	7	43.32390	-88.13178	0.1	U.T. to Cedar Creek	St. Hwy. 60
0404000303	Cedar Creek	FRC02	Geometric											01	440	2.6	7	43.34593	-88.17893		Friedans Creek	Dst. Co. Hwy. P
0404000303	Cedar Creek	LEC01	Geometric					10015917					10015917	01	465	2.4	7	43.32345	-88.21214	0.61	Lehner Creek	Ust. St. Hwy. 60
0404000303	Cedar Creek	LCC04	Geometric											01	450	2.2	7	43.26771	-88.20744		Little Cedar Creek	Ust.St. Hwy. 175 or Dst. Pleasant Hill Rd..
0404000303	Cedar Creek	LCC07	Geometric											01	452	2.0	7	43.26963	-88.17482	0.1	2nd U.T. to L Cedar Creek	Dst. Shadow Lane
0404000303	Cedar Creek	LCC09	Geometric											01	453	2.0	7	43.28013	-88.20587	0.1	3rd U.T. to L Cedar Creek	Dst. Pioneer Road
0404000303	Cedar Creek	CBC02	Geometric											01	430	2.0	7	43.31337	-88.03922		Cedarburg Creek	Ust. Granville Road
0404000303	Cedar Creek	CC32	Geometric											01	400	2.0	7	43.36508	-88.26440		Cedar Creek	Dst. Fontana Road
0404000303	Cedar Creek	CC38	Geometric											01	405	2.0	7	43.31623	-88.11846		U.T. to Cedar Creek	Dst. Division Rd..
0404000303	Cedar Creek	EVGC03	Geometric											01	435	2.0	7	43.36768	-88.14225		Evergreen Creek	Ust. Maple Road
0404000303	Cedar Creek	KBCC03	Geometric											01	455	2.0	7	43.28541	-88.07788		Kressen Br L Cedar Creek	Ust. N. County Aire Rd..
0404000303	Cedar Creek	MUD02	Geometric											01	403	2.0	7	43.38107	-88.01574		Mud Creek	Cedarburg Bog Natural Area?
0404000303	Cedar Creek	NBCC04	Geometric											01	420	2.0	7	43.39957	-88.05632		N Br Cedar Creek	Ust. Knollwood Rd..
0404000303	Cedar Creek	PSC02	Geometric											01	460	2.0	7	43.30753	-88.20135		Polk Springs Creek	Mayfield Rd..
0404000303	Cedar Creek	CBC04	Geometric											01	431	1.0	9	43.33205	-88.10210	0.1	U.T. to Cedarburg Creek	Ust. St. Hwy. 60
0404000303	Cedar Creek	CC34	Geometric											01	401	1.0	9	43.28351	-87.96827	0.1	U.T. to Cedar Creek	Cedar Valley Rd.. off of W. Pioneer Rd..
0404000303	Cedar Creek	CC42	Geometric											01	424	1.0	9	43.33937	-88.10757	0.1	U.T. to Cedar Creek	350 m S. of Spring Valley Rd.
0404000303	Cedar Creek	EVGC05	Geometric											01	436	1.0	9	43.37108	-88.13380	0.1	U.T. to Evergreen Creek	Ust. Co. Hwy. NN
0404000303	Cedar Creek	FRC04	Geometric											01	441	1.0	9	43.34811	-88.18339	0.1	U.T. to Friedans Creek	Ust. Co. Hwy. P
0404000303	Cedar Creek	LCC11	Geometric											01	454	1.0	9	43.30207	-88.17015	0.1	U.T. to Cedar Creek	Scenic Road
0404000303	Cedar Creek	PSC04	Geometric											01	461	1.0	9	43.30882	-88.18631	0.1	U.T. to Polk Springs Creek	Ust. U.S. 45

Appendix Table B-1. *Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Site Origin_Purpose	MMSD Site ID	Wisconsin DNR Fish Site ID	Wisconsin DNR Macro Site ID	Chloride Site ID	Total P Site ID	SEWRPC	Ozaukee Co. Fisheries Site ID	NOAA Site ID	USGS Site ID	Milwaukee River Keeper	Basin Code	Stream Code	Drainage Area (mi^2)	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location
0404000303	Cedar Creek	CBC05	Geometric											01	432	1.0	9	43.30766	-88.06772	0.3	U.T. to Cedarburg Creek	Sherman Road
0404000303	Cedar Creek	CBC03	Geometric											01	430	1.0	9	43.30290	-88.04826		Cedarburg Creek	Ust. Granville Rd..
0404000303	Cedar Creek	CC33	Geometric											01	400	1.0	9	43.35031	-88.25449		Cedar Creek	Arthur Road - Diefenbach Corners
0404000303	Cedar Creek	CC35	Geometric											01	402	1.0	9	43.33601	-88.00836		U.T. to Cedar Creek	Dst. Cedar Creek Road
0404000303	Cedar Creek	CC39	Geometric											01	405	1.0	9	43.30737	-88.10501		U.T. to Cedar Creek	Ust. Sherman Road
0404000303	Cedar Creek	CC40	Geometric											01	406	1.0	9	43.32410	-88.17461		U.T. to Cedar Creek	St. Hwy 60
0404000303	Cedar Creek	CC41	Geometric											01	423	1.0	9	43.34752	-88.09669		U.T. to Cedar Creek	Dst. Pleasant Valley Rd..
0404000303	Cedar Creek	EVGC04	Geometric											01	435	1.0	9	43.36602	-88.16022		Evergreen Creek	Dst. S. River Road
0404000303	Cedar Creek	FRC03	Geometric											01	440	1.0	9	43.34261	-88.19542		Friedans Creek	Ust. U.S.45 or Dst. N. Mayfield Rd..
0404000303	Cedar Creek	GL01	Geometric											01	408	1.0	9	43.42047	-88.25493		Gilbert Lake Tributary	Upstream of spring Near West Bend
0404000303	Cedar Creek	KBCC04	Geometric											01	455	1.0	9	43.28525	-88.06554		Kressen Br. Cedar Creek	700 m N. of Co. Hwy. M
0404000303	Cedar Creek	KBCC05	Geometric											01	456	1.0	9	43.28389	-88.11443		U.T. to Kressen Br. L Creek	350 m N. of Co. Hwy. M
0404000303	Cedar Creek	LCC05	Geometric											01	450	1.0	9	43.25760	-88.20662		Little Cedar Creek	Ust. Pleasant Hill Road
0404000303	Cedar Creek	LCC08	Geometric											01	452	1.0	9	43.25776	-88.17812		U.T. to Cedar Creek	Ust. Rockfield Rd..
0404000303	Cedar Creek	LCC10	Geometric											01	453	1.0	9	43.28204	-88.22351		U.T. to Cedar Creek	Ust. St. Hwy. 145
0404000303	Cedar Creek	LEC02	Geometric											01	465	1.0	9	43.31520	-88.22131		Lehner Creek	Scenic Road
0404000303	Cedar Creek	NBCC05	Geometric											01	420	1.0	9	43.40623	-88.04104		N. Br. Cedar Creek	Dst. Co.f Hwy Y - Newberg
0404000303	Cedar Creek	NBCC07	Geometric											01	421	1.0	9	43.38451	-88.09725		U.T. to N. Br. Cedar Creek	Ust. Paradise Drive
0404000303	Cedar Creek	NBCC08	Geometric											01	422	1.0	9	43.36911	-88.09741		U.T. to U.T. to N. Br. Cedar Creek	Dst. N. Church Rd..
0404000303	Cedar Creek	PSC03	Geometric											01	460	1.0	9	43.30814	-88.21776		Polk Springs Creek	Dst. Scenic Road
0404000303	Cedar Creek	LCC06	Geometric											01	451	0.80	9	43.27288	-88.17508		U.T. to Cedar Creek	Springside Lane
0404000302	Upper Milwaukee River	MR47	WIDNR Fisheries		673106	673106								01	001	275	1	43.46929	-88.05385	48.34	Milwaukee River	Co. Hwy. A
0404000302	Upper Milwaukee River	MR48	WIDNR Fisheries		10021355	10021355								01	001	271	1	43.45391	-88.03181	51.62	Milwaukee River	Dst. River Park Rd..
0404000302	Upper Milwaukee River	MR49	Total P, WWTP; Total P					10012518						01	001	266	1	43.43488	-88.03380	54.03	Milwaukee River	Dst. Newburg WWTP - Streamside Rearing
0404000302	Upper Milwaukee River	MR50	WWTP; Total P		10047696					FPRK1				01	001	265	1	43.43377	-88.04372	54.7	Milwaukee River	Ust. Newburg WWTP - Firemans Park
0404000302	Upper Milwaukee River	MR51	Tailwater											01	001	265	1	43.43414	-88.04857	54.97	Milwaukee River	Newburg Dam Tailwater at Co. Hwy. MY
0404000302	Upper Milwaukee River	MR52	Impoundment											01	001	264	1	43.43380	-88.04925	55.01	Milwaukee River	Newburg Dam Impoundment
0404000302	Upper Milwaukee River	MR53	WIDNR Macroinv.			673105		673105						01	001	256	1	43.42427	-88.07877	57.95	Milwaukee River	Co. Hwy. M
0404000302	Upper Milwaukee River	MR54	WWTP; Total P											01	001	243	1	43.41992	-88.14642		Milwaukee River	Dst. West Bend WWTP - Ust. Airport
0404000302	Upper Milwaukee River	MR55	WWTP; Total P											01	001	242	1	43.41628	-88.14771	0	Milwaukee River	Ust. West Bend WWTP - Dst. Quaas Creek
0404000302	Upper Milwaukee River	MR56	Tailwater (Old)											01	001	236	1	43.42645	-88.16171		Milwaukee River	Dst. Old Dam - Co. Hwy. G
0404000302	Upper Milwaukee River	MR57	WIDNR Fisheries		673224									01	001	235	1	43.42565	-88.16361	65.6	Milwaukee River	Ust. Old Dam - Co. Hwy. G
0404000302	Upper Milwaukee River	MR58	WIDNR Macroinv.			10021354								01	001	234	1	43.42061	-88.18016	66.99	Milwaukee River	Dst. Veterans Ave.
0404000302	Upper Milwaukee River	MR59	Tailwater											01	001	232	1	43.42728	-88.18285	67.48	Milwaukee River	West Bend Dam tailwater - St. Hwy 33
0404000302	Upper Milwaukee River	MR60	Impoundment											01	001	232	1	43.42833	-88.18399		Milwaukee River	West Bend Dam tailwater - St. Hwy 33
0404000302	Upper Milwaukee River	MR61	Impoundment											01	001	222	1	43.45340	-88.18738		Milwaukee River	Barton Dam impoundment
0404000302	Upper Milwaukee River	MR62	Impoundment											01	001	221	1	43.44250	-88.18194		Milwaukee River	Ust. Gadow Mill Dam
0404000302	Upper Milwaukee River	MR63	Tailwater											01	001	221	1	43.44200	-88.18115		Milwaukee River	Dst. Gadow Mill Dam
0404000302	Upper Milwaukee River	MR64	WWTP; Total P											01	001	153	1	43.50778	-88.21592		Milwaukee River	Dst. Kewaskum WWTP
0404000302	Upper Milwaukee River	MR65	IMPOUND											01	001	135	2	43.52080	-88.22204	77.66	Milwaukee River	Dst. St. Hwy. 28 - Togolf Course Kewaskum
0404000302	Upper Milwaukee River	MR66	Tailwater; WWTP;Total P											01	001	135	2	43.51637	-88.22214		Milwaukee River	Kewaskum Dam tailwater
0404000302	Upper Milwaukee River	MR67	WIDNR Fisheries		10029089	10029089								01	001	101	2	43.51286	-88.07517		Milwaukee River	Ust. Co. Hwy. XX
0404000302	Upper Milwaukee River	MR68	WIDNR Macroinv.			10040060								01	001	71	2	43.55743	-88.23621	81.82	Milwaukee River	Ust. Old Bridge Road
0404000302	Upper Milwaukee River	MR69	Geometric											01	001	70	2	43.56496	-88.23270	82.44	Milwaukee River	Auburn-Ashford Drive
0404000302	Upper Milwaukee River	MR70	WIDNR Macroinv.			10031949								01	001	66	3	43.59404	-88.25191	85.25	Milwaukee River	Co. Hwy. YY
0404000302	Upper Milwaukee River	EBMR01	Geometric											01	700	59	3	43.50045	-88.19794	0.11	East Branch Milwaukee River	Upstream confluence with Milwaukee R.
0404000302	Upper Milwaukee River	EBMR02	WIDNR Macroinv.			203093		203093						01	700	56	3	43.55053	-88.18834	6.12	East Branch Milwaukee River	Co. Hwy. S
0404000302	Upper Milwaukee River	MR71	WWTP; Total P											01	001	56	3	43.60075	-88.25863	86.96	Milwaukee River	Dst. Campbellsport WWTP - Sunset Rd..
0404000302	Upper Milwaukee River	EBMR03	Impoundment											01	700	55	3	43.55626	-88.18852	6.61	East Branch Milwaukee River	Mill Road
0404000302	Upper Milwaukee River	MR72	WWTP; Total P											01	001	54	3	43.59469	-88.27002	87.82	Milwaukee River	Ust. Campbellsport WWTP - Dst. Co. Hwy. Y
0404000302	Upper Milwaukee River	EBMR04	USGS									USGS 0408619		01	700	53	3	43.56500	-88.18454	7.39	East Branch Milwaukee River	Near New Fane
0404000302	Upper Milwaukee River	MR73	Total P					10039339						01	001	53	3	43.59817	-88.27129	88.17	Milwaukee River	St. Hwy. 67
0404000302	Upper Milwaukee River	MR74	Tailwater											01	001	50	3	43.55612	-88.18900		Milwaukee River	New Fane Dam tailwater - Ust. Mill Rd..
0404000302	Upper Milwaukee River	WBMR01	Geometric											01	600	50	3	43.54262	-88.23663	0.74	W Br Milwaukee River	S. 45th Ave.
0404000302	Upper Milwaukee River	MR75	Impoundment											01	001	50	3	43.60014	-88.26984		Milwaukee River	Campbellsport Dam
0404000302	Upper Milwaukee River	WBMR02	Geometric; Tailwater											01	600	37	3	43.55460	-88.28200	4.43	West Branch Milwaukee River	Ust. Rustic Road
0404000302	Upper Milwaukee River	EBMR05	Geometric											01	700	36	3	43.59795	-88.18697	11.32	East Branch Milwaukee River	Dst . Lake to Lake Bike Trail
0404000302	Upper Milwaukee River	EBMR06	WIDNR Macroinv.			10010620								01	700	33	4	43.61391	-88.18295	13.03	East Branch Milwaukee River	Dst. Kettle Moraine Scenic Drive
0404000302	Upper Milwaukee River	MR76	Geometric											01	001	32	4	43.62875	-88.27166		Milwaukee River	Dst. Co. Hwy. W
0404000302	Upper Milwaukee River	EBMR07	WIDNR Macroinv.			10012158								01	700	28	4	43.63386	-88.17118	14.82	East Branch Milwaukee River	Ust. Trail Bridge from Haushalter Lane
0404000302	Upper Milwaukee River	EBMR08	Total P					10042450						01	700	24	4	43.64920	-88.17690	18.12	East Branch Milwaukee River	Natural Meander E of Channelized Flow
0404000302	Upper Milwaukee River	MR77	Geometric											01	001	23	4	43.65527	-88.32496		Milwaukee River	Dst. Co. Hwy F
0404000302	Upper Milwaukee River	WCC01	Geometric											01	706	17.0	5	43.69397	-88.17085	21.37	Watercress Creek	At mouth
0404000302	Upper Milwaukee River	WBMR03	Geometric											01	600	17.0	5	43.60482	-88.37981		W Br Milwaukee River	Super Drive
0404000302	Upper Milwaukee River	MBMR01	Geometric; WIDNR Macroinv.			10009250								01	800	16.5	5	43.65174	-88.25987		Middle Branch Milwaukee River	Ust. S. 45th Street
0404000302	Upper Milwaukee River	AL01	Geometric											01	060	13.2	5	43.57971	-88.23748	0.05	Auburn Lake Creek	Ust. mouth at Milwaukee R.

***Appendix Table B-1**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Site Origin_Purpose	MMSD Site ID	Wisconsin DNR		Chloride Site ID	Total P Site ID	SEWRPC	Ozaukee Co. Fisheries Site ID	NOAA Site ID	USGS Site ID	Milwaukee River Keeper	Basin Code	Stream Code	Drainage Area (mi^2)	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location
					Fish Site ID	Macro Site ID																
0404000302	Upper Milwaukee River	CLC01	Geometric			10008830								01	710	13.0	5	43.59776	-88.17934	0.3	Crooked Lake Creek	Ust. Mauthe Lake Beach Access Road
0404000302	Upper Milwaukee River	CLC02	WIDNR Macroinv.			10037506								01	710	12.5	5	43.59784	-88.16988		Crooked Lake Creek	Ust. Co.Hwy. GGG
0404000302	Upper Milwaukee River	KEW01	Total P					673125						01	090	11.5	5	43.51687	-88.22561	0.18	Kewaskum Creek	Ust. U.S. 45 - Kewaskum
0404000302	Upper Milwaukee River	MR78	Geometric											01	001	11.0	5	43.67701	-88.32041	98.04	Milwaukee River	Eagle Rd..
0404000302	Upper Milwaukee River	U.T.U04	Geometric											01	068	10.0	5	43.65470	-88.34564		U.T. to Milwaukee R. @RM 95.97	Ust. G23
0404000302	Upper Milwaukee River	SC01	Total P					10008886						01	080	9.0	5	43.43153	-88.19070	0.33	Silver Creek	Regner Park
0404000302	Upper Milwaukee River	WCC02	Total P					603457						01	706	9.0	5	43.71010	-88.15377	1.02	Watercress Creek	S. 67th Ave.
0404000302	Upper Milwaukee River	QC01	Geometric					10043573						01	470	8.5	6	43.41567	-88.14881	0.05	Quas Creek	Quas Creek Park
0404000302	Upper Milwaukee River	KEW02	Geometric											01	090	8.5	6	43.49734	-88.24165		Kewaskum Creek	Ust. Kettleview Rd..
0404000302	Upper Milwaukee River	PARC01	Geometric											01	720	8.0	6	43.64788	-88.16005	1.25	Parnell Creek at RM 17.43	Division Rd.. - Parnell
0404000302	Upper Milwaukee River	WCC03	Geometric											01	706	8.0	6	43.71325	-88.14822	1.45	Watercress Creek	Watercress Rd.. Ust. St. Hwy 67
0404000302	Upper Milwaukee River	CLC03	Geometric											01	710	8.0	6	43.61543	-88.15455		Crooked Lake Creek	Downstream St. Hwy. 55
0404000302	Upper Milwaukee River	STC01	Geometric											01	610	8.0	6	43.52877	-88.27544		Stoffel Creek	Ust. S. 28th Street
0404000302	Upper Milwaukee River	MBMR02	Geometric											01	800	7.9	6	43.65850	-88.22054		Middle Branch Milwaukee River	Ust. Mud Lake
0404000302	Upper Milwaukee River	SC02	Geometric											01	080	6.9	6	43.42609	-88.19380	0.8	Silver Creek	Washington Street
0404000302	Upper Milwaukee River	AL02	Total P					10043571						01	060	6.5	6	43.59460	-88.21291	2.56	Auburn Lake Creek	Co. Hwy. DD
0404000302	Upper Milwaukee River	WCC04	WIDNR Macroinv.			10008873								01	706	6.0	6	43.71722	-88.13094	2.67	Watercress Creek	Ust. Watercress Road
0404000302	Upper Milwaukee River	KEW03	Geometric											01	090	5.0	6	43.47020	-88.25795		Kewaskum Creek	Downstream Co. Hwy D
0404000302	Upper Milwaukee River	QC02	Geometric											01	470	5.0	6	43.38391	-88.18089		Quas Creek	Ust. Co. Hwy. P - S. Main Str.
0404000302	Upper Milwaukee River	STC02	Geometric											01	610	4.3	6	43.51166	-88.28451		Stoffel Creek	Townline Road
0404000302	Upper Milwaukee River	UMR06	Geometric											01	475	4.3	6	43.43837	-88.09038		U.T. to Milwaukee R. @RM 57.4	N. Poplar Rd..
0404000302	Upper Milwaukee River	U.T.U12	Geometric											01	070	4.0	7	43.67793	-88.31532	0.1	U.T. to Milwaukee River	Ust. Preserve Lane
0404000302	Upper Milwaukee River	VC01	Geometric											01	065	4.0	7	43.58920	-88.22503	0.1	Virgin Creek at moU.T.h	At mouth
0404000302	Upper Milwaukee River	AL03	Geometric											01	060	4.0	7	43.62098	-88.20119	5.53	Auburn Lake Creek	Ust. Co. Hwy SS
0404000302	Upper Milwaukee River	CLC04	Geometric											01	710	4.0	7	43.62998	-88.14291		Crooked Lake Creek	Ust. Division Road
0404000302	Upper Milwaukee River	MR79	Geometric											01	001	4.0	7	43.68337	-88.27528		Milwaukee River	Ust. U.S. 45
0404000302	Upper Milwaukee River	PARC02	Geometric											01	720	4.0	7	43.67390	-88.13163		Parnell Creek	Co. Hwy. V
0404000302	Upper Milwaukee River	U.T.U05	Geometric			10021383								01	068	4.0	7	43.65993	-88.35543		U.T. to Milwaukee River	Co. Hwy. F
0404000302	Upper Milwaukee River	WBMR19	Geometric											01	608	4.0	7	43.62726	-88.42127		U.T. to W. Br. Milwaukee R.	Ust. Butternut. Rd..
0404000302	Upper Milwaukee River	U.T.U08	Geometric											01	069	4.0	7	43.65313	-88.34762		U.T. to U.T. to U Milwaukee R	Ust. Creekview Drive
0404000302	Upper Milwaukee River	WBMR04	Geometric											01	600	3.9	7	43.64175	-88.40453		W Br Milwaukee River	Ust. Campbell Road
0404000302	Upper Milwaukee River	MBMR03	Geometric											01	800	3.4	7	43.67500	-88.20900		Middle Branch Milwaukee River	Rustic Lane
0404000302	Upper Milwaukee River	WBMR24	Geometric											01	612	3.0	7	43.55403	-88.26028	0.2	U.T. to West Br. Milwaukee R.	Rustic Drive
0404000302	Upper Milwaukee River	U.T.U02	Geometric											01	067	2.6	7	43.63344	43.63344	0.1	U.T. to Milwaukee R. @RM 91.98	Ust. Middle Branch
0404000302	Upper Milwaukee River	SC03	Geometric											01	080	2.6	7	43.41975	-88.21583		Silver Creek	Ridge Run Park - North Lot
0404000302	Upper Milwaukee River	U.T.U18	Geometric											01	083	2.5	7	43.53825	-88.22463	0.1	U.T. to U Milwaukee R at RM 79.7	Dst. Co. Hwy. S
0404000302	Upper Milwaukee River	MBMR05	Geometric											01	801	2.4	7	43.66986	-88.24441	0.2	1st U.T. to Middle Br Milwaukee R.	Mitchell Rd..
0404000302	Upper Milwaukee River	RNCC01	Geometric					10012524						01	477	2.2	7	43.43993	-88.02636	0.1	Riveredge Nature Center Creek	Hawthorne Drive.
0404000302	Upper Milwaukee River	UMR02	Geometric											01	473	2.2	7	43.41510	-88.12802		6th U.T. to U Milwaukee R	Dst. Decorah Road
0404000302	Upper Milwaukee River	KEW04	Geometric											01	091	2.1	7	43.45834	-88.25649		Kewaskum Creek	Between Glacier Drive and Tower Drive
0404000302	Upper Milwaukee River	UMR07	Geometric											01	475	2.1	7	43.44499	-88.10020		4th U.T. to Milwaukee R	Dst. Wallace Lake Rd..
0404000302	Upper Milwaukee River	EBMR09	Geometric											01	705	2.0	8	43.68918	-88.16253	0.1	U.T. to E. Br. Milwaukee R. @RM	Confluence w Long Lake
0404000302	Upper Milwaukee River	WBMR16	Geometric											01	606	2.0	8	43.61092	-88.39819	0.2	6th U.T. to W. Br. Milwaukee R.	Dst. East Lane
0404000302	Upper Milwaukee River	VC02	Geometric											01	065	2.0	8	43.60289	-88.22286	1.44	Virgin Creek at RM 1.35	Lake Drive
0404000302	Upper Milwaukee River	MR80	Geometric											01	001	2.0	8	43.68954	-88.27545	101.45	Milwaukee River	Co. Hwy. W
0404000302	Upper Milwaukee River	AL04	Geometric											01	060	2.0	8	43.63296	-88.19903		Auburn Lake Creek	St. Hwy. 67?
0404000302	Upper Milwaukee River	CLC05	Geometric											01	710	2.0	8	43.63808	-88.13310		Crooked Lake Creek	Ust. Co. Rd.. W
0404000302	Upper Milwaukee River	PARC03	Geometric											01	720	2.0	8	43.68708	-88.12347		Parnell Creek	Dst. Scenic Drive
0404000302	Upper Milwaukee River	QC03	Geometric											01	470	2.0	8	43.37541	-88.18383		Quas Creek	Mile View Rd..
0404000302	Upper Milwaukee River	SC05	Geometric											01	082	2.0	8	43.42596	-88.22374		U.T. to Silver Creek	W. Washington Str.
0404000302	Upper Milwaukee River	STC03	Geometric											01	610	2.0	8	43.51656	-88.30100		Stoffel Creek	Lake Bernice Road
0404000302	Upper Milwaukee River	U.T.U06	Geometric											01	068	2.0	8	43.67208	-88.36047		U.T. to Milwaukee R. @RM	Dst. Timberlane Drive
0404000302	Upper Milwaukee River	U.T.U09	Geometric											01	069	2.0	8	43.64926	-88.35717		U.T. to U.T. to U Milwaukee R	Dst. Timberlane Drive
0404000302	Upper Milwaukee River	U.T.U11	Geometric											01	070	2.0	8	43.69890	-88.31050		Unnamed trib	Mink Road
0404000302	Upper Milwaukee River	U.T.U16	Geometric											01	082	2.0	8	43.52825	-88.23082		U.T. to U Milwaukee R at RM 78.7	Dst. Wildlife Drive
0404000302	Upper Milwaukee River	UMR04	Geometric			10037509		10037509						01	474	2.0	8	43.41198	-88.08085		U.T. to Myra Creek @RM 59.0	Ust. Tuscola Lane
0404000302	Upper Milwaukee River	WBMR05	Geometric											01	600	2.0	8	43.65519	-88.41250		W. Br. Milwaukee River	Dst. Co. Hwy. F
0404000302	Upper Milwaukee River	WBMR07	Geometric											01	601	2.0	8	43.54932	-88.27746		U.T. to West Br. Milwaukee R.	Dst. Badger Drive
0404000302	Upper Milwaukee River	WBMR09	Geometric											01	602	2.0	8	43.56816	-88.31454		2nd U.T. to W. Br. Milwaukee R.	Spring Drive
0404000302	Upper Milwaukee River	WBMR12	Geometric											01	604	2.0	8	43.59657	-88.34465		4th U.T. to W. Br. Milwaukee R.	Ust. Co. Hwy. 67
0404000302	Upper Milwaukee River	WBMR20	Geometric											01	608	2.0	8	43.63023	-88.43107		8th U.T. to W. Br. Milwaukee R.	Ust. Butternet Road
0404000302	Upper Milwaukee River	WBMR22	Total P					10029078						01	611	2.0	8	43.53914	-88.28139		U.T. to ?	Townline Rd.
0404000302	Upper Milwaukee River	JC01	Geometric											01	081	1.8	8	43.45387	-88.19242		Junk Creek	Eisenbahn State Trail
0404000302	Upper Milwaukee River	ENGC01	Total P					10008844						01	081	1.7	8	43.42278	-88.19409	0.31	Engmon Creek	N. Silverbrook Drive
0404000302	Upper Milwaukee River	UMR11	Geometric											01	479	1.4	8	43.45996	-88.06026		U.T. to Milwaukee River @RM 49.93	Dst. Co. Hwy. M
0404000302	Upper Milwaukee River	UMR12	Geometric											01	480	1.2	8	43.46858	-88.06045	0.2	U.T. to Milwaukee R. @RM 49.42	Co. Hwy. M

***Appendix Table B-1**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Site Origin_Purpose	MMSD Site ID	Wisconsin DNR		Chloride Site ID	Total P Site ID	SEWRPC	Ozaukee Co. Fisheries Site ID	NOAA Site ID	USGS Site ID	Milwaukee River Keeper	Basin Code	Stream Code	Drainage Area (mi^2)	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location
					Fish Site ID	Macro Site ID																
0404000302	Upper Milwaukee River	CLC07	Geometric											01	711	1.0	9	43.62459	-88.14223	0.1	U.T. to Crooked Lake Creek	N. Maple Tree Rd.
0404000302	Upper Milwaukee River	U.T.U14	Geometric											01	071	1.0	9	43.68814	-88.32092	0.1	U.T. to U.T. to U Milwaukee R. @RM	Eagle Rd..
0404000302	Upper Milwaukee River	WBMR11	Geometric											01	603	1.0	9	43.58615	-88.30189	0.1	U.T. to West Br. Milwaukee R. @RM	Dst. S. Barton Road
0404000302	Upper Milwaukee River	U.T.U15	Geometric											01	072	1.0	9	43.69390	-88.27198	0.2	U.T. to Milwaukee River @RM	Co. Hwy. W
0404000302	Upper Milwaukee River	VC03	Geometric											01	065	1.0	9	43.62305	-88.23891	3.5	Virgin Creek	Ust. St.Hwy 67
0404000302	Upper Milwaukee River	MR81	Geometric											01	001	1.0	9	43.69342	-88.29269	102.53	Milwaukee River	Co. Hwy B and Pine Rd.
0404000302	Upper Milwaukee River	AL05	Geometric											01	060	1.0	9	43.64361	-88.19678		Auburn Lake Creek	S. of Birchwood Drive
0404000302	Upper Milwaukee River	CLC06	Geometric											01	710	1.0	9	43.64411	-88.12032		Crooked Lake Creek	Dst. Co. Rd. F
0404000302	Upper Milwaukee River	EBMR10	Geometric											01	705	1.0	9	43.68073	-88.14699		U.T. to W. Br. Milwaukee R. @RM	Ust. Scenic Drive
0404000302	Upper Milwaukee River	KEW05	Geometric											01	091	1.0	9	43.45105	-88.25373		Kewaskum Creek	Beaver Dam Road
0404000302	Upper Milwaukee River	KEW06	Geometric											01	092	1.0	9	43.47028	-88.25997		U.T. to Kewaskum Creek	Co. Hwy. D
0404000302	Upper Milwaukee River	MBMR04	Geometric											01	800	1.0	9	43.70110	-88.22020		Middle Branch Milwaukee River	Co. Hwy. B
0404000302	Upper Milwaukee River	PARC04	Geometric											01	720	1.0	9	43.69993	-88.12388		Parnell Creek	Dst. Woodside Road
0404000302	Upper Milwaukee River	QC04	Geometric											01	471	1.0	9	43.38538	-88.18417		U.T. to Quas Creek	Ust. Co Hwy NN
0404000302	Upper Milwaukee River	RNCC02	Geometric					10012525						01	477	1.0	9	43.43271	-88.01601		Riveredge Creek	South Boundary Of RNC
0404000302	Upper Milwaukee River	SC04	Geometric											01	080	1.0	9	43.39572	-88.21651		Silver Creek	Dst. Silver Lake
0404000302	Upper Milwaukee River	STC04	Geometric											01	610	1.0	9	43.52215	-88.31904		Stoffel Creek	Co. Hwy. W
0404000302	Upper Milwaukee River	U.T.U01	Geometric											01	066	1.0	9	43.62269	-88.28004		U.T. to Milwaukee River @RM 90.32	Co. Hwy. W
0404000302	Upper Milwaukee River	U.T.U03	Geometric			10021421								01	067	1.0	9	43.64857	-88.28787		U.T. to Milwaukee River @RM 91.98	Middle Road
0404000302	Upper Milwaukee River	U.T.U07	Geometric											01	068	1.0	9	43.68243	-88.36251		U.T. to Milwaukee River @RM	Ust. Timberlane Drive
0404000302	Upper Milwaukee River	U.T.U10	Geometric											01	069	1.0	9	43.64885	-88.37282		U.T. to U.T. to Milwaukee R. @RM	Ust. Timberlane Drive
0404000302	Upper Milwaukee River	U.T.U13	Geometric											01	070	1.0	9	43.70293	-88.32179		U.T. to Milwaukee R. @RM 98.2	Sunny Road
0404000302	Upper Milwaukee River	U.T.U17	Geometric											01	082	1.0	9	43.52453	-88.23926		U.T. to Milwaukee R. @RM 78.7	Knights Ave.
0404000302	Upper Milwaukee River	U.T.U19	Geometric											01	083	1.0	9	43.54690	-88.21148		U.T. to Milwaukee R. @RM 79.7	Ust. County Line Road
0404000302	Upper Milwaukee River	UMR01	Geometric											01	472	1.0	9	43.42507	-88.13739		U.T. to Milwaukee R @RM	St. Hwy. 33 E or Chopper Drive
0404000302	Upper Milwaukee River	UMR03	Geometric											01	473	1.0	9	43.40646	-88.13121		U.T. to Milwaukee R @RM	Ust. Decorah Rd..
0404000302	Upper Milwaukee River	UMR05	Geometric											01	474	1.0	9	43.39806	-88.09112		U.T. to Milwaukee R @RM	Knollwood Rd..
0404000302	Upper Milwaukee River	UMR08	Geometric											01	475	1.0	9	43.45770	-88.10690		4th U.T. to Milwaukee R	W. Green Lake Drive
0404000302	Upper Milwaukee River	WBMR06	Geometric											01	600	1.0	9	43.66578	-88.41821		W Br Milwaukee River	Ust. Co. Hwy. F
0404000302	Upper Milwaukee River	WBMR08	Geometric											01	601	1.0	9	43.55474	-88.31043		U.T. to West Br. Milwaukee R. @RM	Ust. Badger Road
0404000302	Upper Milwaukee River	WBMR10	Geometric											01	602	1.0	9	43.57573	-88.32443		U.T. to West Br. Milwaukee R. @RM	Ust. Co. Hwy. W
0404000302	Upper Milwaukee River	WBMR13	Geometric											01	604	1.0	9	43.60550	-88.34037		U.T. to West Br. Milwaukee R. @RM	Rolling Drive
0404000302	Upper Milwaukee River	WBMR14	Geometric											01	605	1.0	9	43.59500	-88.35700		U.T. to West Br. Milwaukee R. @RM	Dst. Willow Lane
0404000302	Upper Milwaukee River	WBMR15	Geometric											01	605	1.0	9	43.60878	-88.36921		U.T. to West Br. Milwaukee R. @RM	Dst. Driveumlin Drive
0404000302	Upper Milwaukee River	WBMR17	Geometric											01	606	1.0	9	43.61542	-88.41225		U.T. to West Br. Milwaukee R. @RM	Dst. Co. Hwy. KK
0404000302	Upper Milwaukee River	WBMR18	Geometric											01	607	1.0	9	43.62513	-88.39533		U.T. to West Br. Milwaukee R. @RM	Ust. Co. Hwy. K or Dst. Campbell Drive
0404000302	Upper Milwaukee River	WBMR21	Geometric											01	609	1.0	9	43.64294	-88.40251		U.T. to West Br. Milwaukee R. @RM	Ust. Co. Hwy. K
0404000302	Upper Milwaukee River	WBMR23	Geometric											01	611	1.0	9	43.54096	-88.29544		U.T. to U.T. to W. Br Milwaukee R. @RM	Dst. Lake Bernice Drive
0404000302	Upper Milwaukee River	WBMR25	Geometric											01	612	1.0	9	43.56495	-88.26920		U.T. to W. Br. Milwaukee R. @RM	Auburn Ashford Drive
0404000302	Upper Milwaukee River	UMR10	Geometric											01	478	0.90	9	43.46012	-88.03321		U.T. to Milwaukee R. @RM 51.04	Dst. County Lane
0404000302	Upper Milwaukee River	MBMR06	Geometric											01	802	0.80	9	43.67831	-88.21106	0.1	U.T. to M. Br. Milwaukee R.	Sunrise Drive
0404000302	Upper Milwaukee River	U.T.U20	Geometric											01	084	0.80	9	43.54556	-88.21559	0.1	U.T. to U.T. to Milwaukee R. @RM 79.7	Ust. Co Line Rd.
0404000302	Upper Milwaukee River	WBMR26	Geometric											01	613	0.80	9	43.56521	-88.26742	0.1	U.T. to U.T. to W. Br. Milwaukee R.	Auburn Ashford Drive
0404000302	Upper Milwaukee River	UMR09	Geometric											01	476	0.70	9	43.44120	-88.10191		U.T. to U.T. to Milwaukee R. @RM 57.4	Wallace Lake Rd.
0404000301	N. Branch Milwaukee R.	NBMR01	Geometric		10031060									01	500	246	1	43.47790	-88.03491	0.36	N. Branch Milwaukee R.	500 meters Dst. Riverside Drive
0404000301	N. Branch Milwaukee R.	NBMR02	Geometric											01	500	69	3	43.55243	-88.05392		N. Branch Milwaukee R.	Dst. St. Hwy. 144 - dst. Mink Creek
0404000301	N. Branch Milwaukee R.	NBMR03	USGS									SGS 0408630		01	500	51	3	43.55695	-88.05279		N. Branch Milwaukee R.	S. 144th Ave.
0404000301	N. Branch Milwaukee R.	NBMR04	WIDNR Fisheries		10029086	10029086								01	500	40	3	43.57151	-88.03741		N. Branch Milwaukee R.	Ust. Abbott Drive
0404000301	N. Branch Milwaukee R.	NBMR05	Geometric											01	500	36	4	43.58621	-88.02373		N. Branch Milwaukee R.	Co. Hwy. SS
0404000301	N. Branch Milwaukee R.	NBMR06	WIDNR Fisheries		10031062									01	500	33	4	43.61476	-88.01815		N. Branch Milwaukee R.	Indian Mound Rd..
0404000301	N. Branch Milwaukee R.	NBMR07	Geometric				10015891							01	500	18.3	4	43.63044	-88.03629		N. Branch Milwaukee R.	Dst. Co. Hwy W
0404000301	N. Branch Milwaukee R.	STNC01	Geometric											01	520	18.0	5	43.52732	-88.08931		Stoney Creek	Co. Hwy. X - Boltonville
0404000301	N. Branch Milwaukee R.	MNKC01	Geometric											01	540	17.2	5	43.55662	-88.06229		Mink Creek	St. Hwy. 144
0404000301	N. Branch Milwaukee R.	SILVC01	Geometric					603299						01	530	17.0	5	43.55659	-88.03688		Silver Creek	S. 144th - Camp Awana Road
0404000301	N. Branch Milwaukee R.	STNC02	Total P					10008868						01	520	16.0	5	43.52787	-88.14783		Stoney Creek	Moraine Drive
0404000301	N. Branch Milwaukee R.	MNKC02	WIDNR Macroinv.			10029085								01	540	12.0	5	43.56354	-88.09792		Mink Creek	Dst. Boltonville Road
0404000301	N. Branch Milwaukee R.	WALLC01	Total P					10008840						01	510	11.5	5	43.49462	-88.10119		Un Cr	Ust. Boltonville Road
0404000301	N. Branch Milwaukee R.	NBMR08	Chlorides				10021197							01	500	11.0	5	43.64017	-88.01761		N. Branch Milwaukee R.	Cascade Road
0404000301	N. Branch Milwaukee R.	MNKC03	Geometric					10029058			Geometric			01	540	9.2	5	43.60288	-88.10068		Mink Creek	Co. Hwy. S
0404000301	N. Branch Milwaukee R.	NBMR09	Geometric, WWTP; Total P		10031057									01	500	9.2	5	43.65393	-88.00282		N. Branch Milwaukee R.	Dst. Cascade WWTP - Co. Hwy. NN
0404000301	N. Branch Milwaukee R.	SILVC02	Geometric; WWTP; Total P											01	530	9.2	5	43.55750	-87.97401		Silver Creek	Dst. Random Lake WWTP - St. Hwy. 44
0404000301	N. Branch Milwaukee R.	STNC03	Geometric											01	520	9.2	5	43.53205	-88.16101		Stoney Creek	E. Moraine Drive. and Westscott Rd..
0404000301	N. Branch Milwaukee R.	NBMR17	Geometric											01	504	9.0	6	43.52639	-88.06152	0.1	U.T. to N. Br. Milwaukee R.	Filmore Road
0404000301	N. Branch Milwaukee R.	NBMR10	Total P; WWTP					10008861						01	500	9.0	6	43.65838	-88.00777		North Branch	Ust. Cascade WWTP -St. Hwy. 28
0404000301	N. Branch Milwaukee R.	WALLC02	Geometric											01	510	9.0	6	43.48347	-88.11856		Wallace Creek	Dst. Shalom Drive
0404000301	N. Branch Milwaukee R.	AT01	Geometric				10021196							01	513	8.0	6	43.64331	-88.00026	0.2	Adell Tributary	Co. Hwy. NN

***Appendix Table B-1**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Site Origin_Purpose	MMSD Site ID	Wisconsin DNR		Chloride Site ID	Total P Site ID	SEWRPC	Ozaukee Co. Fisheries Site ID	NOAA Site ID	USGS Site ID	Milwaukee River Keeper	Basin Code	Stream Code	Drainage Area (mi^2)	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location
					Fish Site ID	Macro Site ID																
0404000301	N. Branch Milwaukee R.	NC01	WIDNR Fisheries		10038477									01	580	7.0	6	43.67366	-88.00897		Nichols Creek	Dst. Co. Hwy. V
0404000301	N. Branch Milwaukee R.	NC02	WIDNR Fisheries		10008856									01	580	6.0	6	43.68058	-88.02041		Nichols Creek	Cedar Lane Rd..
0404000301	N. Branch Milwaukee R.	NC03	USGS									USGS 0408627		01	580	5.5	6	43.68055	-88.02009		Nichols Creek	Cedar Lane Rd..
0404000301	N. Branch Milwaukee R.	WALLC03	Geometric											01	510	5.0	6	43.47696	-88.12658		Wallace Creek	Ust. S. Indian Lore Rd..
0404000301	N. Branch Milwaukee R.	MEC01	Geometric					603301						01	560	4.6	6	43.61996	-88.05008	0.2	Melius Creek	St. Hwy. 28
0404000301	N. Branch Milwaukee R.	AT02	Geometric											01	513	4.6	6	43.63326	-87.98056		Adell Tributary	Bates Rd..
0404000301	N. Branch Milwaukee R.	BATC01	Geometric					603121						01	550	4.6	6	43.59057	-88.05042		Batavia Creek	S. 28th Str. - Batavia
0404000301	N. Branch Milwaukee R.	MNKC04	Geometric											01	540	4.6	6	43.61544	-88.09757		Mink Creek	Co. Hwy. SS
0404000301	N. Branch Milwaukee R.	NBMR18	Geometric											01	504	4.6	6	43.51704	-88.02412		U.T. to N Br Milwaukee R.	Dst. Co. Hwy. E
0404000301	N. Branch Milwaukee R.	NC04	Geometric		10030491	10030491								01	580	4.6	6	43.68662	-88.03359		Nichols Creek	Dst. Co. Hwy.y N
0404000301	N. Branch Milwaukee R.	SILVC03	Geometric; WWTP; Total P			10030341								01	530	4.6	6	43.56811	-87.96059		Silver Creek	Dst. Allen Road
0404000301	N. Branch Milwaukee R.	STNC04	Geometric					10016968						01	520	4.6	6	43.56030	-88.14476		Stoney Creek	Ust. Co. Hwy. D
0404000301	N. Branch Milwaukee R.	CHC01	WIDNR Macroinv.			10008779								01	570	3.2	7	43.63050	-88.04160		Chambers Creek	Co. Hwy. W
0404000301	N. Branch Milwaukee R.	AT03	Geometric											01	513	2.6	7	43.61461	-87.95132		Adell Tributary	Co. Hwy. I
0404000301	N. Branch Milwaukee R.	CHC02	Geometric											01	570	2.6	7	43.63822	-88.04393		Chambers Creek	Dst. St. Hwy. 28
0404000301	N. Branch Milwaukee R.	NBMR19	Geometric											01	504	2.6	7	43.51978	-88.01406		U.T. to N Br Milwaukee R.	Pioneer Rd..
0404000301	N. Branch Milwaukee R.	NC05	Geometric					603334						01	580	2.6	7	43.68894	-88.03396		Nichols Creek	Co. Hwy N
0404000301	N. Branch Milwaukee R.	SILVC04	Geometric											01	530	2.6	7	43.58030	-87.93954		Silver Creek	St. Rt. 57
0404000301	N. Branch Milwaukee R.	STNC05	Geometric											01	520	2.6	7	43.57415	-88.14333		Stoney Creek	Brazelton
0404000301	N. Branch Milwaukee R.	WALLC07	Geometric											01	512	2.6	7	43.46202	-88.12921		2nd U.T. to Wallace Creek	Ust. S. Indian Lore Road
0404000301	N. Branch Milwaukee R.	BC03	Geometric											01	551	2.3	7	43.57967	-88.07609		U.T. to Batavia Creek	Ust. S Co. Hwy. A
0404000301	N. Branch Milwaukee R.	GV01	Geometric					10008877						01	545	2.3	7	43.59638	-87.99908		Gooseville Creek	E. of Lynn Rd.
0404000301	N. Branch Milwaukee R.	MEC02	Geometric											01	560	2.3	7	43.61502	-88.06574		Melius Creek	Co. Hwy. SS
0404000301	N. Branch Milwaukee R.	MNKC05	Geometric			10008851								01	540	2.3	7	43.63392	-88.08977		Mink Creek	Mink Creek Rd.
0404000301	N. Branch Milwaukee R.	RLC01	Geometric											01	531	2.3	7	43.56040	-87.95740		Random Lake	Dst. Random Lake - St. Hwy. 44
0404000301	N. Branch Milwaukee R.	WALLC04	Geometric											01	510	2.3	7	43.47122	-88.13993		Wallace Creek	Dst. Co Hwy. A
0404000301	N. Branch Milwaukee R.	MNKC07	Geometric											01	541	2.0	8	43.54232	-88.09043		North Branch Mink Creek	Ust.Cranberry Rd..
0404000301	N. Branch Milwaukee R.	NBMR13	Geometric											01	502	1.8	8	43.48521	-88.06274	0.1	U.T. to N. Br Milwaukee R	Ust. Co. Hwy. M
0404000301	N. Branch Milwaukee R.	STNC07	Geometric											01	521	1.8	8	43.53253	-88.09771	0.1	U.T. to Stoney Creek	1st U.T. to Stoney Creek, Bolton Drive
0404000301	N. Branch Milwaukee R.	NBMR15	Geometric											01	503	1.6	8	43.48816	-88.08077	0.1	U.T. to N. Br. Milwaukee R.	Trading Post Trail
0404000301	N. Branch Milwaukee R.	NBMR22	Geometric											01	506	1.6	8	43.64279	-88.02352	0.3	U.T. to N. Br. Milwaukee R.	Dusty Lane
0404000301	N. Branch Milwaukee R.	SILVC06	Geometric											01	532	1.2	8	43.55408	-88.02028	0.2	U.T. to Silver Creek	Co. Hwy. DE
0404000301	N. Branch Milwaukee R.	WALLC06	Geometric											01	511	1.1	8	43.49234	-88.12007	0.3	U.T. to Wallace Creek	Indian Lore Rd..
0404000301	N. Branch Milwaukee R.	MNKC09	Geometric											01	542	1.1	8	43.55890	-88.05596		U.T. to Mink Creek	Ust. St. Hwy. 144
0404000301	N. Branch Milwaukee R.	NBMR12	Geometric											01	501	1.0	9	43.47954	-88.04889	0.1	U.T. to N. Br. Milwaukee R. @RM	Riverside Drive
0404000301	N. Branch Milwaukee R.	NBMR21	Geometric											01	505	1.0	9	43.53021	-88.02591	0.1	U.T. to N. Br. Milwaukee R. @RM	Ust. Jay Road
0404000301	N. Branch Milwaukee R.	AT04	Geometric											01	513	1.0	9	43.61680	-87.94223		Adell Tributary	St. Hwy. 57
0404000301	N. Branch Milwaukee R.	BC02	Geometric											01	550	1.0	9	43.58981	-88.08308		Batavia Creek	Spring Rd.
0404000301	N. Branch Milwaukee R.	BC04	Geometric											01	551	1.0	9	43.57111	-88.07709		U.T. to Batavia Creek	Brazelton Rd.
0404000301	N. Branch Milwaukee R.	CHC03	Geometric											01	570	1.0	9	43.64842	-88.04362		Chambers Creek	Dst. Co. Hwy. F
0404000301	N. Branch Milwaukee R.	GV01	Geometric											01	545	1.0	9	43.58553	-87.98986		Gooseville Creek	Co. Hwy. SS
0404000301	N. Branch Milwaukee R.	MEC03	Geometric											01	560	1.0	9	43.60827	-88.07648		Melius Creek	E. of Trout Spring Rd.
0404000301	N. Branch Milwaukee R.	MEC04	Geometric											01	561	1.0	9	43.62481	-88.06456		U.T. to Melius Creek	SE of Co. Hwy. S
0404000301	N. Branch Milwaukee R.	MNKC06	Geometric											01	540	1.0	9	43.65356	-88.09750		Mink Creek	Co. Hwy. F
0404000301	N. Branch Milwaukee R.	MNKC08	Geometric											01	541	1.0	9	43.54991	-88.11556		N. Branch Mink Creek	Dst. N. Paradise Road
0404000301	N. Branch Milwaukee R.	NBMR11	Geometric											01	500	1.0	9	43.69232	-88.04895		N. Branch Milwaukee River	Driveway off of Kettleview Rd.
0404000301	N. Branch Milwaukee R.	NBMR14	Geometric											01	502	1.0	9	43.49592	-88.05317		U.T. to N. Br. Milwaukee R. @RM	Dst. Co. Hwy. H
0404000301	N. Branch Milwaukee R.	NBMR16	Geometric											01	503	1.0	9	43.48221	-88.09186		U.T. to N. Br. Milwaukee R. @RM	Ust. Orchard Valley Rd.
0404000301	N. Branch Milwaukee R.	NBMR20	Geometric											01	504	1.0	9	43.52090	-88.00156		U.T. to N. Br. Milwaukee R. @RM	E. of Pioneer Drive
0404000301	N. Branch Milwaukee R.	SILVC05	Geometric											01	530	1.0	9	43.57967	-87.92889		Silver Creek	Vorpahl Road
0404000301	N. Branch Milwaukee R.	SILVC07	Geometric											01	533	1.0	9	43.55408	-88.02028		U.T. to Silver Creek	St. Hwy. 144
0404000301	N. Branch Milwaukee R.	STNC06	Geometric											01	520	1.0	9	43.58165	-88.14440		Stoney Creek	Dst. Pond - access via Maple Tree Rd.
0404000301	N. Branch Milwaukee R.	STNC08	Geometric											01	521	1.0	9	43.54381	-88.12206		U.T. to Stoney Creek	N. Paradise Rd.
0404000301	N. Branch Milwaukee R.	WALLC05	Geometric											01	510	1.0	9	43.47022	-88.15838		Wallace Creek	Dst. Forest View Rd.
0404000301	N. Branch Milwaukee R.	WALLC08	Geometric											01	512	1.0	9	43.45288	-88.13880		U.T. to Wallace Creek	Ust. Newark Drive E.
0404000203	Root River	RR01	Geometric						S18					02	001	198	1	42.73398	-87.78539		Root River	Ust. S. Main Street Bridge
0404000203	Root River	RR02	WIDNR Macroinv.			10010426			S16					02	001	192	1	42.73270	-87.80695		Root River	Spring Street - Brose Park
0404000203	Root River	RR03	Tailwater						S15					02	001	188	1	42.74000	-87.81836		Root River	Racine Colonial Park Dam tailwater
0404000203	Root River	RR04	Impoundment											02	001	187	1	42.74170	-87.81732		Root River	Racine Colonial Park Dam impoundment
0404000203	Root River	RR05	Tailwater											02	001	186	1	42.74170	-87.81732		Root River	Horlicks Dam tailwater - Rapids Ct.
0404000203	Root River	RR06	Impoundment						S14					02	001	185	1	42.75364	-87.82396		Root River	Horlicks Dam impoundment - Rapids Ct
0404000203	Root River	RR07	WIDNR Macroinv.			10016284			S12					02	001	180	1	42.77456	-87.85319		Root River	Johnson Park
0404000203	Root River	RR08	WIDNR Macroinv.			523115								02	001	164	1	0.00000	0.00000		Root River	4 Mile Road
0404000203	Root River	RR09	WIDNR Macroinv.			10010428			S10					02	001	162	1	42.80480	-87.87022		Root River	East River Road
0404000203	Root River	RR10	WIDNR Macroinv.			523100								02	001	160	1	42.81406	-87.87262		Root River	6 Mile Road
0404000203	Root River	RR11	WIDNR Macroinv.			523168			S09					02	001	150	1	42.84187	-87.91343		Root River	St. Hwy. 38

Appendix Table B-1. *Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Site Origin_Purpose	MMSD Site ID	Wisconsin DNR		Chloride Site ID	Total P Site ID	SEWRPC	Ozaukee Co. Fisheries Site ID	NOAA Site ID	USGS Site ID	Milwaukee River Keeper	Basin Code	Stream Code	Drainage Area (mi^2)	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location
					Fish Site ID	Macro Site ID																
0404000203	Root River	RR12	WIDNR Macroinv.			10009355								02	001	138	1	42.84499	-87.93337		Root River	S. 13th Street
0404000203	Root River	RR13	Geometric	RR-06		413667								02	001	121	2	42.85571	-87.98994		Root River	S. 60th Street
0404000203	Root River	RR14	WIDNR Fisheries		10021357	10021357								02	001	57	3	0.00000	0.00000		Root River	W. Oakwood
0404000203	Root River	RR15	Chlorides, CWQ	MS1120; RR-05			413717					USGS 4087220		02	001	50	3	42.87269	-87.99488		Root River	W. Ryan Rd.
0404000203	Root River	RR16	WIDNR Macroinv.			425682								02	001	40	4	42.90167	-87.99381		Root River	W. DriveeXel Ave.
0404000203	Root River	RR17	WIDNR Macroinv.			413669								02	001	37	4	42.91662	-87.99606		Root River	W. Rawson Ave.
0404000203	Root River	RR18	Geometric											02	001	33	4	42.92743	-88.00497		Root River	S. Root River Parkway
0404000203	Root River	HC01	Chlorides				523106		S11					02	010	15.0	5	42.77273	-87.86633		Hoods Creek	Brook Road
0404000203	Root River	RR19	Geometric; CWQ	MS1112; RR-04			413716					USGS 4087214		02	001	15.0	5	42.94579	-88.01501		Root River	W. Orange Ave.
0404000203	Root River	HC02	WIDNR Macroinv.			523104								02	010	13.0	5	42.75933	-87.86344		Hoods Creek	Northwestern Ave.
0404000203	Root River	HC03	Geometric											02	010	12.4	5	42.75269	-87.87239		Hoods Creek	Dst. Airline Road
0404000203	Root River	TESS01	WIDNR Macroinv.			413666								02	076	10.4	6	42.92977	-88.02893		Tess Corners Creek	Whitnail Park Drive
0404000203	Root River	HU01	Geometric			523107			S08					02	030	10.0	6	42.83786	-87.92065	0.1	Husher Creek	Dst. 7-1/2 Mile Road
0404000203	Root River	TESS02	Geometric			10035021								02	076	10.0	6	42.92991	-88.02575		Tess Corners Creek	W. College Ave.
0404000203	Root River	HC04	WIDNR Macroinv.			523105								02	010	8.0	6	42.75475	-87.90222		Hood's Creek	N. Fancher Rd..
0404000203	Root River	TESS03	Geometric											02	076	7.3	6	42.90988	-88.05806		Tess Corners Creek	W. Forest Home Ave.
0404000203	Root River	HU02	Geometric											02	030	6.2	6	42.80452	-87.91219		Husher Creek	Ust. 5 Mile Road
0404000203	Root River	RR20	Geometric	RR-03		413665								02	001	6.2	6	42.98054	-88.05576		Root River	W. Beloit Rd..
0404000203	Root River	TESS04	Geometric											02	076	6.1	7	42.91370	-88.08487		Tess Corners Creek	Woods Road
0404000203	Root River	CRAY01	Geometric			10035053								02	020	6.0	7	42.84163	-87.88847	0.1	Crayfish Creek	Dst. County Line Rd..
0404000203	Root River	RR21	Geometric	RR-02										02	001	3.5	7	42.98923	-88.05762	3.5	Root River	W. Oklahoma Ave.
0404000203	Root River	LG01	Geometric			10036970			S01					02	075	3.5	7	42.89662	-87.99744		Legend Creek	S. 92nd Street
0404000203	Root River	WHPC01	Geometric											02	077	3.5	7	42.93465	-88.04633		Whitnall Park Creek	Whitnall Park Drive. Dst. S. 108th St
0404000203	Root River	HC05	Geometric			523103								02	010	3.3	7	42.72080	-87.92314		Hoods Creek	Washington Ave.
0404000203	Root River	RR29	Geometric			523108								02	005	3.2	7	42.83417	-87.96526	0.1	U.T. to Root River	Dst. 7 1/2 Mile Road
0404000203	Root River	EBRR01	Geometric			10034936								02	080	3.2	7	42.90017	-87.98044		East Br Root River	W Victory Creek Drive. - Pleasant View Park
0404000203	Root River	HU03	Geometric											02	030	3.2	7	42.78669	-87.91508		Husher Creek	Co. Hwy. H
0404000203	Root River	RR26	Geometric											02	004	3.2	7	42.85788	-88.00501		U.T. to Root River	Adj. W. Oakwood Road
0404000203	Root River	RYAN01	Geometric			10008087								02	070	3.2	7	42.86546	-88.02122		Ryan Creek	S. 92nd Street
0404000203	Root River	HC07	Geometric; WWTP; Total P											02	011	3.1	7	42.73345	-87.91827	0.2	U.T. to Hoods Creek	500 m S. of Co. Hwy. C
0404000203	Root River	CRAY02	Geometric											02	020	3.1	7	42.84784	-87.88397		Crayfish Creek	Dst. E. Elm Road
0404000203	Root River	TESS05	Geometric											02	076	3.1	7	42.92323	-88.09440		Tess Corners Creek	Tess Corners Drive
0404000203	Root River	HC06	Geometric											02	010	1.6	8	42.70966	-87.93554		Hoods Creek	Louis Sorenson Rd.. or International Drive.
0404000203	Root River	RR22	Geometric											02	001	1.6	8	43.00341	-88.08409		Root River	West Paddock Parkway
0404000203	Root River	CRAY03	Geometric											02	020	1.5	8	42.85655	-87.89535		Crayfish Creek	Dst. East Oakwood Drive
0404000203	Root River	CRAY04	Geometric											02	021	1.5	8	42.84127	-87.86118		U.T. to Crayfish Creek	Dst. County Line Road
0404000203	Root River	EBRR02	Geometric											02	080	1.5	8	42.93271	-87.95827		East Br. Root River	S. 33rd Street
0404000203	Root River	LG02	Geometric											02	075	1.5	8	42.89898	-88.02493		Legend Creek	Lion Legends Park
0404000203	Root River	RR24	Geometric			10021358								02	003	1.5	8	42.82226	-87.95935		U.T. to Root River	W. 6 1/2 Mile Road
0404000203	Root River	RR27	Geometric											02	004	1.5	8	42.84826	-88.04194		U.T. to Root R.	Driveway off of W. S. County Line Rd.
0404000203	Root River	RR31	Geometric											02	083	1.5	8	42.99350	-88.06818		U.T. to Root River	S. 124th Street
0404000203	Root River	RYAN02	Geometric											02	070	1.5	8	42.87471	-88.05605		Ryan Creek	W. Loomis Road
0404000203	Root River	TESS06	Geometric											02	076	1.5	8	42.93436	-88.10371		Tess Corners Creek	S. Moorland Rd..
0404000203	Root River	WHPC02	Geometric											02	077	1.5	8	42.93661	-88.06570		Whitnall Park Creek	S. Kurtz Rd.
0404000203	Root River	WILD01	Geometric			10035054								02	082	1.5	8	42.96608	-88.04836		Wildcat Creek	S. 108th Street
0404000203	Root River	RR30	Geometric											02	006	1.2	9	42.85416	-87.97846	0.1	U.T. to Root River	Dst. Oakwood Rd..
0404000203	Root River	DALE01	Geometric			10036930								02	081	1.0	9	42.93431	-87.99374	0.1	Dale Creek	Southway
0404000203	Root River	HU04	Geometric											02	031	1.0	9	42.80788	-87.91445	0.1	U.T. to Husher Creek	Co. Hwy. H
0404000203	Root River	HC08	Geometric											02	012	1.0	9	42.71468	-87.93799		U.T. to Hoods Creek	International Drive
0404000203	Root River	WHPC03	Geometric											02	078	1.0	9	42.94072	-88.05303		U.T. to Whitall Park Creek	Parnell Ave.
0404000203	Root River	RR23	Geometric						S13					02	002	0.80	9	42.78588	-87.83572	0.1	U.T. to Root River	4 Mile Rd.
0404000203	Root River	RR25	Geometric											02	003	0.80	9	42.82342	-87.87962	0.1	U.T. to Root River	West River Road
0404000203	Root River	RR28	Geometric											02	004	0.70	9	42.83049	-87.88276	0.1	U.T. to Root River	Ust. RR Bridge
0404000202	Root River Canal	RRC01	Geometric			413772								02	040	66	3	42.85226	-87.99429	0.2	Root River Canal	Ust. 60th Street
0404000202	Root River Canal	RRC02	WIDNR Macroinv.			523111			S07					02	040	62	3	42.82925	-87.99890		Root River Canal	West 7 Mile Rd..
0404000202	Root River Canal	RRC03	WIDNR Macroinv.											02	040	55	3	42.80085	-87.99214		Root River Canal	West 5 Mile Rd..
0404000202	Root River Canal	WBRRC01	Geometric			523116			S04					02	060	32	4	42.78795	-87.98857		West Br Root River Canal	Dst. 4 Mile Road
0404000202	Root River Canal	WBRRC02	WIDNR Macroinv.			10022291								02	060	29	4	42.75708	-87.99875		West Branch Root River Canal	2 Mile Road
0404000202	Root River Canal	WBRRC03	Geometric											02	060	16.0	5	42.73982	-88.00847		West Br Root River Canal	50th Street
0404000202	Root River Canal	EBRRC01	Geometric			10016033			S06					02	050	15.2	5	42.78851	-87.98412	0.1	East Br Root R Canal	Dst. 4 Mile Road
0404000202	Root River Canal	WBRRC09	Geometric											02	064	9.0	5	42.74201	-88.01038		U.T. to W. Br. Root River Canal	50th Street
0404000202	Root River Canal	WBRRC04	Geometric											02	060	8.0	6	42.70722	-88.01601		West Br Root River Canal	Spring Street
0404000202	Root River Canal	RAY01	Geometric			523109			S03					02	061	4.8	7	42.78619	-87.99526		Raymond Creek	Ust. 4 Mile Road
0404000202	Root River Canal	EBRRC02	Geometric			10020780								02	050	4.0	7	42.71966	-87.98253		East Br. Root R. Canal	Dst. Spring Street
0404000202	Root River Canal	WBRRC05	Geometric											02	060	4.0	7	42.69057	-88.02022		West Br. Root River Canal	RR Trestle
0404000202	Root River Canal	WBRRC10	Geometric											02	064	4.0	7	42.75867	-88.01350		U.T. to .U.T.. to W. Br. Root River Canal	2 Mile Road

***Appendix Table B-1**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Site Origin_Purpose	MMSD Site ID	Wisconsin DNR		Chloride Site ID	Total P Site ID	SEWRPC	Ozaukee Co. Fisheries Site ID	NOAA Site ID	USGS Site ID	Milwaukee River Keeper	Basin Code	Stream Code	Drainage Area (mi^2)	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location
					Fish Site ID	Macro Site ID																
0404000202	Root River Canal	WBRRC13	Geometric											02	065	4.0	7	42.74350	-88.01623		U.T. to U.T. to W. Br. Root River Canal	Raymond Ave.
0404000202	Root River Canal	EBRRC03	Geometric			10036980								02	050	3.0	8	42.73884	-87.97242		East Br. Root River Canal	50th Str.
0404000202	Root River Canal	EBRRC04	Geometric			10017142			S05					02	050	2.1	8	42.68045	-87.99282		East Br Root River Canal	Braun Road
0404000202	Root River Canal	RRC05	Geometric			10030352								02	042	2.1	8	42.82198	-88.01355		2nd U.T. to Root R. Canal	Dst. 76th Street
0404000202	Root River Canal	WBRRC06	Geometric; WWTP; Total P			523125			S02					02	060	2.1	8	42.68783	-88.02996		West Br Root River Canal	Dst. Union Grove WWTP - 67th Street
0404000202	Root River Canal	WBRRC16	Geometric											02	068	2.1	8	42.71771	-88.03317		2nd U.T. to W Br. Root R Canal	52nd Street
0404000202	Root River Canal	YC01	Geometric			523114								02	067	2.1	8	42.73363	-88.02765		Yorkville Creek	63rd Street
0404000202	Root River Canal	WBRRC11	Geometric											02	064	2.0	8	42.76859	-88.03189		U.T. to W Br Root R Canal	Dst. 3 Mile Road
0404000202	Root River Canal	RAY02	Geometric											02	061	2.0	8	42.80063	-88.01759	0.1	Raymond Creek	W. 5 Mile Road
0404000202	Root River Canal	WBRRC07	WWTP; Total P											02	060	1.8	8	42.69145	-88.03502		West Br. Root River Canal	67th Street
0404000202	Root River Canal	RRC07	Geometric											02	043	1.1	9	42.80813	-87.98799	0.1	U.T. to Root River Canal	6 Mile Road
0404000202	Root River Canal	RAY05	Geometric											02	062	1.0	9	42.80696	-88.01846	0.1	U.T. to Raymond Creek	76th Street
0404000202	Root River Canal	RRC04	Geometric											02	041	1.0	9	42.85511	-88.00362	0.1	U.T. to Root River Canal	Dst. S. 76th Street
0404000202	Root River Canal	EBRRC05	Geometric											02	050	1.0	9	42.65682	-87.98757		East Br. Root River Canal	7th Street
0404000202	Root River Canal	RAY03	Geometric											02	061	1.0	9	42.80121	-88.03670		Raymond Creek	W. 5 Mile Road
0404000202	Root River Canal	RAY04	Geometric											02	062	1.0	9	42.79692	-88.01260		U.T. to Raymond Creek	76th Street
0404000202	Root River Canal	RRC06	Geometric											02	042	1.0	9	42.83318	-88.03682		U.T. to Root River Canal	Dst. W. 7 Mile Road
0404000202	Root River Canal	WBRRC08	Geometric											02	060	1.0	9	42.69693	-88.05412		West Br. Root River Canal	S. Colony Ave.
0404000202	Root River Canal	WBRRC12	Geometric											02	064	1.0	9	42.78386	-88.04264		U.T. to W. Br. Root River Canal	4 Mile Road
0404000202	Root River Canal	WBRRC14	Geometric											02	065	1.0	9	42.74788	-88.05078		U.T. to U.T. to W. Br. Root R. Canal	108th Street
0404000202	Root River Canal	WBRRC17	Geometric											02	068	1.0	9	42.71899	-88.05227		U.T. to W. Br. Root River Canal	S. Colony Ave.
0404000202	Root River Canal	WBRRC18	Geometric											02	068	1.0	9	42.70722	-88.02593		U.T. to W. Br. Root River Canal	Dst. 67th Drive
0404000202	Root River Canal	YC02	Geometric											02	067	1.0	9	42.74012	-88.06075		Yorkville Creek	N. Colony Ave.
0404000202	Root River Canal	WBRRC15	Geometric											02	066	0.90	9	42.74935	-88.03514		U.T. to U.T. to U.T. to W. Br. Root R. Canal	Walden Drive
0404000201	Oak Creek	OAK01	Geometric; WIDNR Fisheries	OC-07	10028781	10010371			OC-01					02	100	27	4	42.90847	-87.84666	0.2	Oak Creek	Oak Creek Parkway
0404000201	Oak Creek	OAK08	SEWRPC	OC-05					OC-02					02	100	23	5	42.92500	-87.87100		Oak Creek	15th Ave
0404000201	Oak Creek	OAK02	WIDNR Fisheries	OC-04	10009331	10009331	413068		OC-03					02	100	20	5	42.90525	-87.88165		Oak Creek	Nichols Ave.
0404000201	Oak Creek	OAK03	WIDNR Fisheries		413074	413074								02	100	18.0	5	42.88640	-87.88572		Oak Creek	E. Puetz Road
0404000201	Oak Creek	OAK04	Geometric	OC-01, OC-2					OC-04					02	100	12.0	6	42.87497	-87.91966		Oak Creek	Ust. S. Howell Ave.
0404000201	Oak Creek	NBOAK01	Geometric		10039495	10039495			OC-08					02	120	6.5	6	42.88739	-87.92440		N. Br. Oak Creek	W. Puetz Rd..
0404000201	Oak Creek	MFDD01	Geometric		10008241	10008241			OC-07					02	110	3.3	6	42.91570	-87.89262		Mitchell Field Driveainage Ditch	E. Rawson Ave.
0404000201	Oak Creek	OAK05	Geometric			10011237			OC-05					02	100	3.3	6	42.87057	-87.93251		Oak Creek	S. 13th Street (near Park)
0404000201	Oak Creek	NBOAK02	Geometric		10044177	10044177			OC-09					02	120	2.0	8	42.91790	-87.92023		N. Br. Oak Creek	S. 6th Street
0404000201	Oak Creek	MFDD02	Geometric											02	110	1.6	8	42.93025	-87.89036		Mitchell Field Driveainage Ditch	E C.ollege Ave.
0404000201	Oak Creek	NBOAK06	Geometric											02	123	1.6	8	42.90710	-87.91970		U.T. to N. Br. Oak Creek	S. 6th Street
0404000201	Oak Creek	OAK06	Geometric											02	100	1.6	8	42.87039	-87.95645		Oak Creek	S. 31st Street
0404000201	Oak Creek	MFDD03	Geometric											02	110	1.2	9	42.93800	-87.90901		Mitchell Field Driveainage Ditch	S. Howell Ave.
0404000201	Oak Creek	OAK07	WIDNR Fisheries		10044098	10044098			OC-06					02	100	1.2	9	42.87256	-87.96500		Oak Creek	W. Ryan Rd..
0404000201	Oak Creek	NBOAK04	Geometric											02	121	1.0	9	42.88626	-87.92517	0.1	U.T. to N. Br. Oak Creek	Dst. Puetz Rd.
0404000201	Oak Creek	NBOAK05	Geometric											02	122	1.0	9	42.89801	-87.93124	0.1	U.T. to N. Br. Oak Creek	S. 13th Street
0404000201	Oak Creek	NBOAK03	Geometric											02	120	1.0	9	42.93435	-87.93175		N. Br. Oak Creek	W. Bowden Street

Site Origin Term or Acronym	Definition
Geometric	Site Selected as a Geometric Site (somethmes snapped to an existing site or access point).
Total P	Sites used for one or more studies of total phosphorus (e.g., Milwaukee River Keeper).
NOAA	NOAA (Cooksey et al. 2016) study of the Lower Milwaukee River lacustuary and harbor.
Oszaukee Co. Fisheries	Ozaukee Co. fish sampling sites.
WDNR Fisheries	Wisconsin DNR fish sampling sites.
Tailwater	Targeted tailwater site.
Impoundment	Targeted impoundment site.
CWQ	MMSD continuous monitoring site.
WDNR Macroinvertebrate	Wisconsin DNR macroinvertebrate site.
Chlorides	Sites where chlorides and related parameters were collected (e.g., Milwaukee River Keeper).
USGS	USGS Watercourse Study Phase V.
Targeted Site	Intensive pollution survey sites intended to fill gaps in longitudinal coverage.

Site ID Type	Description
MBI Site ID	MBI assigned site ID for paired sampling and analysis purposes.
MMSD Site ID	Current MMSD fixed station (water chemistry and continuous monitoring.
Fish Site ID	WIDNR fish sampling site (SWIMS ID).
Macro Site ID	WIDNR macroinvertebrate sampling site (SWIMS ID).
Chloride Site ID	Chlorides sampling site (SWIMS ID).
Total P Site ID	Nutrients (total P) sampling site (SWIMS ID).
Ozaukee Site ID	Ozaukee Co. fish sampling site.
NOAA Site ID	NOAA lower Milwaukee R. lacustuary and harbor site.
USGS Site ID	USGS Watercourse Study Phase V site.
SEWRPC	SEWRPC Root River and Oak Creek sampling sites (SWIMS ID).
Milwaukee River Keeper Site ID	Milwaukee River Keeper 2018 sampling sites (SWIMS ID).

Appendix C

Allocation of Indicators and Parameters by HUC10 Watershed in the Milwaukee River Basin and MMSD Service Area

Appendix Table C-1. *Indicators, parameters, and frequencies at intensive pollution survey sites in the Lower Milwaukee R. HUC10 organized by drainage area (largest to smallest in mi^2).*

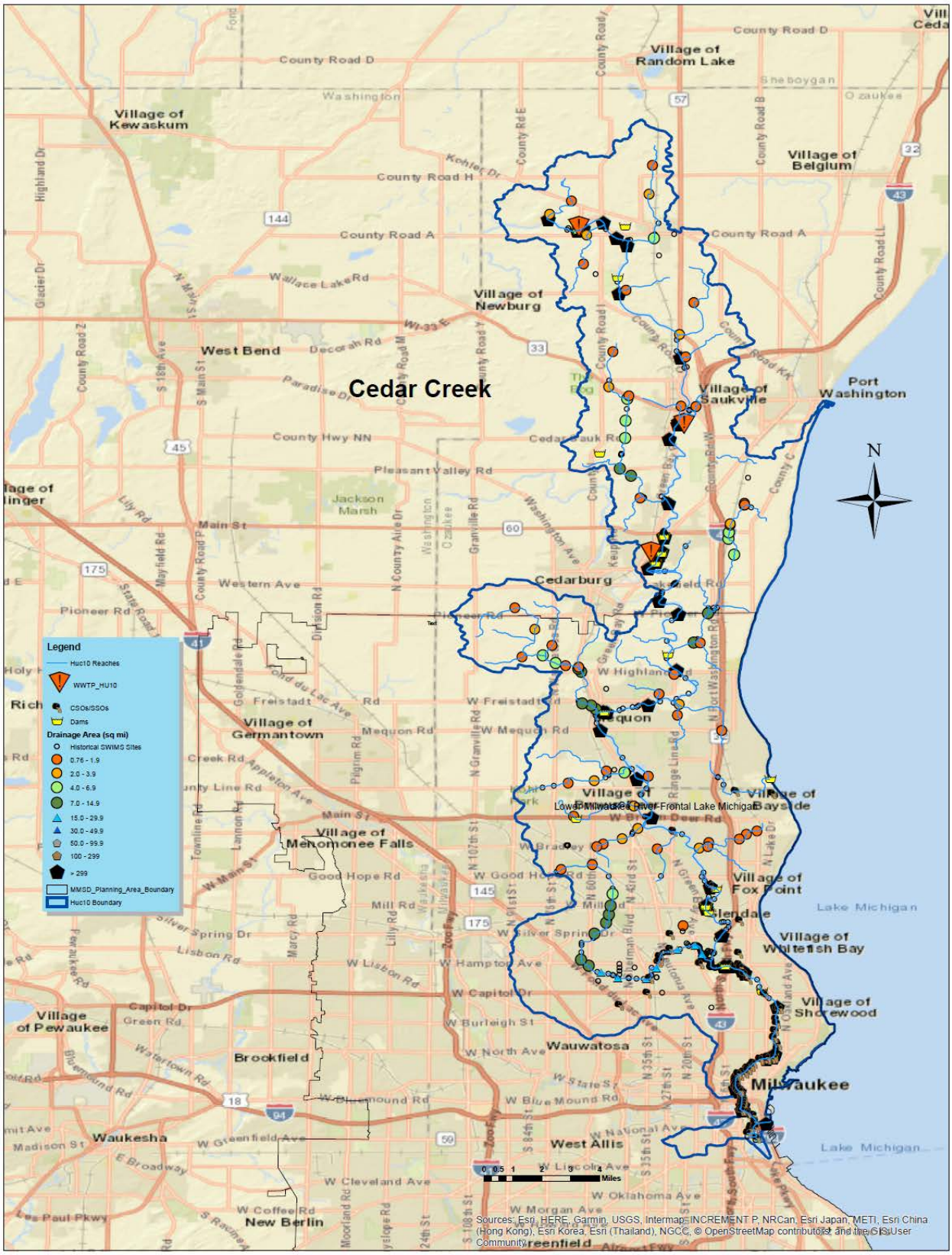
HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000306	Lower Milwaukee River	MR01	01	001	864	1	43.02457	-87.89806	0.1	Milwaukee River	Milwaukee Harbor Dst. I-794	X	X	QHEI	10X	MS1170	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR02	01	001	700	1	43.03129	-87.91022	0.92	Milwaukee River	N. Water Str.	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR03	01	001	698	1	43.03374	-87.90980	1.1	Milwaukee River	Near Mouth	X	X	QHEI	10X	MS1102	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR05	01	001	695	1	43.04235	-87.91349	1.74	Milwaukee River	Between Juneau and E. State Str.	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR04	01	001	695	1	43.04056	-87.91158	1.59	Milwaukee River	Wells St. Bridge	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR06	01	001	694	1	43.05708	-87.89800	3.1	Milwaukee River	Dst. Humboldt Ave	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR07	01	001	690	1	43.05796	-87.89471	3.32	Milwaukee River	Between North Ave. Dam and N. Humboldt Ave.	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR08	01	001	689	1	43.05950	-87.89384	3.43	Milwaukee River	North Avenue Impoundment U-1	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR09	01	001	680	1	43.08311	-87.89251	5.12	Milwaukee River	Capital Drive	X	X	QHEI	10X	MS1110	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR10	01	001	679	1	43.09996	-87.90894	6.66	Milwaukee River	Estabrook Park	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR11	01	001	679	1	43.10139	-87.91028	6.78	Milwaukee River	Milwaukee River - S. of Estabrook Park Dam	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR12	01	001	679	1	43.10333	-87.91667	7.13	Milwaukee River	North Port Washington Rd.	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR13	01	001	666	1	43.10347	-87.91938	7.25	Milwaukee River	Estabrook Dam Impoundment	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR14	01	001	665	1	43.11889	-87.92028	8.78	Milwaukee River	Storm Sewer Outfall @Silver Spring Drive.	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR16	01	001	662	1	43.13387	-87.92831	10.36	Milwaukee River	6439 N Sunnypoint Lane	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR15	01	001	662	1	43.13250	-87.92821	10.27	Milwaukee River	Dst. Kletzsch Falls	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR17	01	001	662	1	43.14313	-87.92610	11.52	Milwaukee River	Green Tree Rd..	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR18	01	001	650	1	43.17784	-87.95548	15.25	Milwaukee River	Brown Deer Rd..	X	X	QHEI	10X	MS1111	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR19	01	001	642	1	43.19729	-87.96275	16.93	Milwaukee River	Dst. Trinity Cr. off Hwy 57 Park Access	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR20	01	001	625	1	43.22167	-87.98111	18.95	Milwaukee River	Hwy 167	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR21	01	001	622	1	43.23092	-87.97968	19.74	Milwaukee River	Mequon-Thiensville Dam tailwater	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR22	01	001	621	1	43.23071	-87.97806	19.82	Milwaukee River	Thiensville Dam Impoundment	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR23	01	001	615	1	43.23436	-87.95718	20.97	Milwaukee River	Mequon Boat Launch	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR24	01	001	614	1	43.25175	-87.94301	23.38	Milwaukee River	Highland Road - Thiensville	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR25	01	001	601	1	43.28000	-87.94208	26.31	Milwaukee River	W. Pioneer Rd..	X	X	QHEI	10X	MS1101	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR26	01	001	600	1	43.28627	-87.95173	27.28	Milwaukee River	Dst. Cedar Creek	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR27	01	001	471	1	43.30278	-87.95709	29.5	Milwaukee River	South End Of Lime Kiln Park - Grafton	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR28	01	001	471	1	43.30593	-87.95302	29.82	Milwaukee River	Dst. Grafton WWTP; Lime Kiln Impoundment	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR29	01	001	471	1	43.30769	-87.95290	29.95	Milwaukee River	Ust. Grafton WWTP	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR30	01	001	470	1	43.30939	-87.95142	30.08	Milwaukee River	Falls Rd..; former Chair Factory Dam	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR31	01	001	470	1	43.31139	-87.95028	30.25	Milwaukee River	Lime Kiln Impoundment	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR33	01	001	469	1	43.31839	-87.94900	30.76	Milwaukee River	Bridge Str. Dam tailwater	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR32	01	001	469	1	43.31887	-87.94937	30.8	Milwaukee River	Bridge Str. Dam impoundment	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR34	01	001	468	1	43.33528	-87.94699		Milwaukee River	Ust. Interurban Br; Bridge St impoundment	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR35	01	001	458	1	43.36747	-87.94665	35.21	Milwaukee River	Dst. Saukville WWTP; Cedar Sauk Rd.	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR36	01	001	457	1	43.37500	-87.94231	35.8	Milwaukee River	Dst. Saukville WWTP	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR37	01	001	456	1	43.37605	-87.94211	35.88	Milwaukee River	Ust. Saukville WWTP	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR38	01	001	447	1	43.40818	-87.94090		Milwaukee River	Ehlers Park; upstream of Ehlers Creek	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR39	01	001	439	1	43.44040	-87.97174	41.91	Milwaukee River	East Hawthorne Drive	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR40	01	001	432	1	43.46449	-87.96785	43.68	Milwaukee River	Dst. Waubedonia Park	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR41	01	001	429	1	43.46838	-87.97308	44.15	Milwaukee River	Fredonia Canoe Launch	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR42	01	001	428	1	43.47607	-87.97968		Milwaukee River	Dst. Fredonia WWTP; Off Co. Hwy. I	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR43	01	001	427	1	43.47320	-87.98971	45.48	Milwaukee River	Milwaukee River Dst. Co. Hwy. H	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR44	01	001	427	1	43.47227	-87.99149	45.59	Milwaukee River	Ust. Fredonia WWTP - Waubeka (VFW Park)	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR45	01	001	427	1	43.47187	-87.99278	45.66	Milwaukee River	Waubeka Impoundment	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	MR46	01	001	426	1	43.47753	-88.00725	46.55	Milwaukee River	Waubeka (River Rd..)	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	GRAN02	01	2GC	85	2	43.08509	-88.04833	0.05	Grantosa Creek	At mouth	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000306	Lower Milwaukee River	LINC02	01	300	20	5	43.11378	-87.93353	0.76	Lincoln Creek	Green Bay Ave.	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	LINC01	01	300	20	5	43.10929	-87.93008	0.34	Lincoln Creek	At mouth	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	LINC03	01	300	19.0	5	43.11158	-87.94251	1.24	Lincoln Creek	Meaux Park	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	LINC04	01	300	18.5	5	43.10893	-87.95118	1.75	Lincoln Creek	Between Lancaster and Fairmont Streets	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	LINC05	01	300	18.0	5	43.10242	-87.95309	2.23	Lincoln Creek	32nd Street	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	LINC06	01	300	17.0	5	43.09689	-87.95806	2.91	Lincoln Creek	36th and Congress Street	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	LINC07	01	300	16.6	5	43.09718	-87.97225	3.62	Lincoln Creek	47th Street	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	LINC09	01	300	15.0	5	43.10009	-87.98083	4.12	Lincoln Creek	54TH Street	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	LINC10	01	300	14.8	5	43.10352	-87.98678	4.55	Lincoln Creek	60th St.	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	LINC11	01	300	14.7	5	43.10663	-87.99066	4.86	Lincoln Creek	Dst. W. Stark Street	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	LINC12	01	300	14.0	5	43.11959	-87.98390	6	Lincoln Creek	Silver Spring Rd..	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	LINC13	01	300	12.2	5	43.12506	-87.97807	6.55	Lincoln Creek	Dst. RR E. of N. 55th Street	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	LINC14	01	300	12.1	5	43.12919	-87.97669	6.87	Lincoln Creek	Foot bridge in Havenswoods	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X

***Appendix Table C-1**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000306	Lower Milwaukee River	LINC15	01	300	12.0	5	43.13359	-87.97584	7.2	Lincoln Creek	51st and Woolworth	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	PC01	01	020	12.0	5	43.23208	-87.98326		Pigeon Creek	Dst. Cedarburg	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	PC02	01	020	11.5	5	43.23388	-87.98558		Pigeon Creek	Williamsburg Drive - Theinsville	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000306	Lower Milwaukee River	PC03	01	020	10.0	6	43.23488	-87.99007		Pigeon Creek	Seminary Drive Bridge	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000306	Lower Milwaukee River	PC04	01	020	9.0	6	43.25075	-87.99058		Pigeon Creek	Highland Road - Thiensville	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000306	Lower Milwaukee River	MOLE01	01	040	8.0	6	43.34898	-87.96560		Un Creek	Maple Road	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000306	Lower Milwaukee River	PC05	01	020	8.0	6	43.25234	-87.99200		Pigeon Creek	Along Ozaukee Interurban Trail ust. Highland Rd.	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000306	Lower Milwaukee River	MOLE02	01	040	7.5	6	43.35253	-87.97122		Un Cr	Ust. Pleasant Valley Road	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000306	Lower Milwaukee River	MOLE03	01	040	6.0	6	43.36789	-87.96857		Uncr (Mole Creek)	Ust. Cedar Sauk Rd..	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000306	Lower Milwaukee River	PC06	01	020	6.0	6	43.25517	-88.00333		U.T. to Pigeon Creek	Dst. Wauwautosa Rd..	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000306	Lower Milwaukee River	FC01	01	050	5.2	6	43.46793	-87.95410	0.9	Fredonia Creek	Wenzel Ave.	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000306	Lower Milwaukee River	MOLE04	01	040	5.2	6	43.37650	-87.96831		Mole Creek	S. of Hillcrest	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000306	Lower Milwaukee River	UL01	01	030	5.2	6	43.30942	-87.91398		Ulao Creek	Falls Rd.. E. of St. Hwy 43	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000306	Lower Milwaukee River	PC07	01	022	5.1	7	43.25894	-88.00978		U.T. to Pidgeon Creek	Ust. W. Hawthorne Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	GRAN01	01	2??	5.0	7	0.00000	0.00000		Grantosa Creek	Webster Park	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	MOLE05	01	040	5.0	7	43.38750	-87.96750		Mole Creek	Dst. St. Hwy. 33 - Restoration Reach	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	UL02	01	030	4.8	7	43.31740	-87.91680		Ulao Creek	Gateway RR crossing	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	TC01	01	015	4.0	7	43.20032	-87.96890	0.33	Trinity Creek	Cedarburg Rd.. - Mequon	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	LINC16	01	300	4.0	7	43.13947	-87.97485		Lincoln Creek	Dst. W. Green Tree Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	UL03	01	030	4.0	7	43.32057	-87.91661		Ulao Creek	St. Hwy. 60	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	UL04	01	030	3.9	7	43.32420	-87.91601		Ulao Creek	Dst. Helms Creek	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	UL05	01	030	3.8	7	43.32490	-87.91590		Ulao Creek	Ust. Helms Creek	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	BC01	01	014	3.2	7	43.18352	-87.96418	0.3	Beaver Creek	St. Hwy. 57	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	U.T.L17	01	013	2.9	7	43.17231	-87.96216	0.17	U.T. at RM 14.91	Ust. N. Green Bay Court	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	IC01	01	010	2.8	7	43.16242	-87.93145	0.13	Indian Creek	Dst. Bradley Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	U.T.L15	01	052	2.6	7	43.47993	-88.00635	0.1	2nd U.T. to L. Milwaukee R	Ust. River Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	RC01	01	048	2.6	7	43.41971	-87.94134	0.05	Riverside Drive Creek	At confluence with Milwaukee R.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	FC02	01	050	2.6	7	43.49004	-87.95661		Fredonia Creek	Ust. Willow Valley Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	MOLE06	01	040	2.6	7	43.39348	-87.97678		Mole Creek	St. Hwy 33	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	PC08	01	022	2.6	7	43.27202	-88.01375		U.T. to Pidgeon Creek	Ust. W. Bonniwell Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	U.T.L02	01	013	2.5	8	43.16716	-87.97003		Southbranch Creek	Ust. N. 47th Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	U.T.L06	01	027	2.4	8	43.23449	-87.94151	0.1	U.T. to Milwaukee River	N. County Lane - Theinsville	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	UL06	01	030	2.2	8	43.33424	-87.90898		Ulao Creek	Dst. Kaul Creek	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	TC02	01	015	2.1	8	43.19621	-87.98402		Trinity Creek	Baehr Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	U.T.L13	01	051	2.0	8	43.46955	-87.98781	0.2	U.T. to L Milwaukee R	Co. Hwy. H	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	IC01	01	010	1.8	8	43.16522	-87.92670	0.45	Indian Creek	N. River Rd.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	LINC17	01	300	1.6	8	43.15417	-87.98495		Lincoln Creek	Dst. N. 60th Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	IC02	01	010	1.5	8	43.16935	-87.90785	1.92	Indian Creek	E. Dean Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	U.T.L03	01	013	1.4	8	43.16455	-87.97953		Southbranch Creek	Dst. N 55th Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	U.T.L04	01	013	1.3	8	43.16317	-87.98271		Southbranch Creek	Bradley Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000306	Lower Milwaukee River	IC03	01	010	1.2	9	43.16696	-87.91138	1.62	Indian Creek	Ust. N. Port Washington Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	IC04	01	010	1.0	9	43.17103	-87.90254	2.26	Indian Creek	Dst. N. Manor Lane	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	BDP01	01	012	1.0	9	43.16203	-87.95245	0.84	Brown Deer Park Creek	Brown Deer Park	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	LDCC01	01	017	1.0	9	43.19848	-87.95692	0.26	Lac du Cours Creek	W. Le Mont Blvd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	PC12	01	024	1.0	9	43.26397	-88.00514	0.2	U.T. to Pidgeon Creek	Ust. W. Bonniwell Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	IC05	01	011	1.0	9	43.16317	-87.92711	0.1	U.T. to Indian Creek	W. Bradley Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	KC01	01	033	1.0	9	43.33437	-87.90870	0.1	Kaul Creek	Ust. confluence with Ulao Creek	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	MK01	01	021	1.0	9	43.25310	-87.99176	0.1	Mee-Kwon Creek	Ust. confluence with Pigeon Creek	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	MOLE08	01	041	1.0	9	43.33780	-87.96110	0.1	U.T. to Mole Creek	Cedara Creek Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	MOLE09	01	042	1.0	9	43.38904	-87.96670	0.1	U.T. to Mole Creek	State Hwy. 33	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	PC09	01	022	1.0	9	43.25382	-87.99838	0.1	U.T. to Pidgeon Creek	N. Wauwatosa Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	PC11	01	023	1.0	9	43.25821	-88.02018	0.1	U.T. to U.T. to Pidgeon Creek	W. Hawthorne Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	TC04	01	016	1.0	9	43.20109	-87.97793	0.1	U.T. to Trinity Creek	N. Meadow Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	U.T.L05	01	026	1.0	9	43.22899	-87.94237	0.1	U.T. to Milwaukee R. @RM	W. Ranch Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	U.T.L08	01	028	1.0	9	43.24945	-87.94401	0.1	U.T. to Milwaukee R. @RM	N. Fieldwood Rd.. - Rotary Park Creek	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	U.T.L09	01	045	1.0	9	43.38384	-87.94060	0.1	U.T. to Milwaukee R. @RM	Ust. Dekora Str. - Grady Park	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	U.T.L10	01	046	1.0	9	43.38361	-87.93312	0.1	U.T. to Milwaukee R. @RM	E. Green Bay Ave.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	U.T.L11	01	047	1.0	9	43.40851	-87.93826	0.1	U.T. to Milwaukee R. @RM	Ust. C o. Hwy. W	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	U.T.L12	01	049	1.0	9	43.44188	-87.96808	0.1	U.T. to Milwaukee R. @RM	Ust. Hawthorne Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	BC01	01	014	1.0	9	43.17843	-87.99433		Beaver Creek	Ust. Brown Deer Road	X	X	QHEI	3X		2X	2X			Bact 2X		

***Appendix Table C-1**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000306	Lower Milwaukee River	CWC01	01	301	1.0	9	43.12355	-87.93954		Crestwood Creek	Marne Ave.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	FC03	01	050	1.0	9	43.50444	-87.95483		Fredonia Creek	Ust. Belgium Kohler Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	MOLE07	01	040	1.0	9	43.41115	-87.97467		Mole Creek	W. Center Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	PC10	01	022	1.0	9	43.28281	-88.02376		U.T. to Pidgeon Creek	Home Corners Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	RC02	01	048	1.0	9	43.43570	-87.93415		Riverside Drive Creek	Dst. E Hawthorne Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	TC03	01	015	1.0	9	43.19502	-87.99706		Trinity Creek	Dst. N. Wauwatosa Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	U.T.L07	01	027	1.0	9	43.22133	-87.92022		U.T. to Milwaukee R. @RM	Mequon Rd.. and St. Hwy 43	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	U.T.L14	01	051	1.0	9	43.45510	-87.98936		U.T. to Milwaukee R. @RM	Dst. River Park Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	U.T.L16	01	052	1.0	9	43.48663	-87.99544		U.T. to Milwaukee R. @RM	Co. Hwy. H	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	VGC01	01	025	1.0	9	43.23966	-87.95154		Villa Grove Park Creek	W. Freistadt Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	UL07	01	030	0.9	9	43.33520	-87.90883	0.1	Ulao Creek	Kaul Property	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	LINC18	01	300	0.8	9	43.15174	-88.00058		Lincoln Creek	N. 76th Street	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	UL08	01	032	0.7	9	43.28265	-87.92687	0.1	U.T. to Ulao Creek	Ust. W. Pioneer Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	UL09	01	032	0.7	9	43.28288	-87.92255	0.1	U.T. to Ulao Creek	N. Port Washington Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000306	Lower Milwaukee River	CREST01	01	301	0.0	9	43.12084	-87.93978	0.56	Crestwood Creek	Raleigh Ave.	X	X	QHEI	3X		2X	2X			Bact 2X		



Appendix Figure C-1. *Map of intensive pollution survey and geometric sites in the Cedar Creek HUC10 watershed.*

***Appendix Table C-2**. Indicators, parameters, and frequencies at intensive pollution survey sites in the Kinnickinnic River HUC10 organized by drainage area (largest to smallest in mi^2).*

HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supplemental	Sediment Metals	Sediment Organics
0404000305	Kinnickinnic River	KR01	01	100	24.8	4	43.02361	-87.90361	0.12	Kinnickinic River	Opposite River Front Launch Site	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000305	Kinnickinnic River	KR02	01	100	24.0	4	43.01694	-87.90194		Kinnickinnic River	E. Greenfield Avenue	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000305	Kinnickinnic River	KR03	01	100	23.3	4	43.00896	-87.90726	1.25	Kinnickinnic River	Dst. Kinnickinnic Ave.	X	X	QHEI	10X	MS1104	8X	8X	4X	4X	Bact 8X	1X	1X
0404000305	Kinnickinnic River	KR04	01	100	23.0	4	43.00623	-87.91402	1.75	Kinnickinnic River	Ust. W. Beecher Street	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000305	Kinnickinnic River	KR05	01	100	20.0	4	42.99611	-87.91334	2.49	Kinnickinnic River	Ust. S. 1st Street and St. Hwy. 38	X	X	QHEI	10X	MS1108	8X	8X	4X	4X	Bact 8X	1X	1X
0404000305	Kinnickinnic River	KR06	01	100	19.0	4	42.99640	-87.91908	2.85	Kinnickinnic River	43rd St.	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000305	Kinnickinnic River	KR07	01	100	18.8	4	42.99728	-87.92616	3.22	Kinnickinnic River	11th Street	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000305	Kinnickinnic River	ULAO01	01	130	12.0	5	43.26544	-87.93427	0.62	Ulao Creek	Bonniwell Rd.. at Oriole Lane	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000305	Kinnickinnic River	WP01	01	110	12.0	5	42.99038	-87.95245	0.03	Wilson Park Creek	Ust. Confluence with Kinnickinnic R.	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000305	Kinnickinnic River	ULAO02	01	130	11.0	5	43.28008	-87.92705		Ulao Creek	Pioneer Rd.. - Mequon	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000305	Kinnickinnic River	KR08	01	100	10.0	5	42.99111	-87.94861	4.94	Kinnickinnic River	27th Street	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000305	Kinnickinnic River	WP02	01	110	10.0	5	42.98753	-87.95203	0.3	Wilson Park Creek	St. Lukes Hospital	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000305	Kinnickinnic River	KR09	01	100	8.0	5	42.99050	-87.95480	5.29	Kinnickinnic River	St. Lukes Hospital	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000305	Kinnickinnic River	KR10	01	100	6.0	6	42.99714	-87.96768	6.48	Kinnickinnic River	43rd Street	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000305	Kinnickinnic River	WP03	01	110	6.0	6	42.97271	-87.94009		Wilson Park Creek	20th Place	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000305	Kinnickinnic River	KR11	01	100	3.1	7	42.99982	-87.97706	7.11	Kinnickinnic River	KK River Pkwy. Pedestrian Bridge	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000305	Kinnickinnic River	WP04	01	110	3.1	7	42.95687	-87.90684		Wilson Park Creek	Gmia Outfall 7	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000305	Kinnickinnic River	ULAO03	01	131	1.6	8	43.26527	-87.93097		U.T. to Ulao Creek	W. Bonniwell Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000305	Kinnickinnic River	HCO1	01	112	1.4	9	42.95942	-87.91372	0.1	Holmes Ave. Creek	Dst. Layton Ave	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000305	Kinnickinnic River	KR12	01	100	1.0	9	42.98338	-87.98495	8.94	Kinnickinnic River	57th Street and Holt - Lyons Park	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000305	Kinnickinnic River	EC01	01	111	1.0	9	42.95301	-87.88393		Edgerton Channel	Pennsylvania Ave.	X	X	QHEI	3X		2X	2X			Bact 2X		

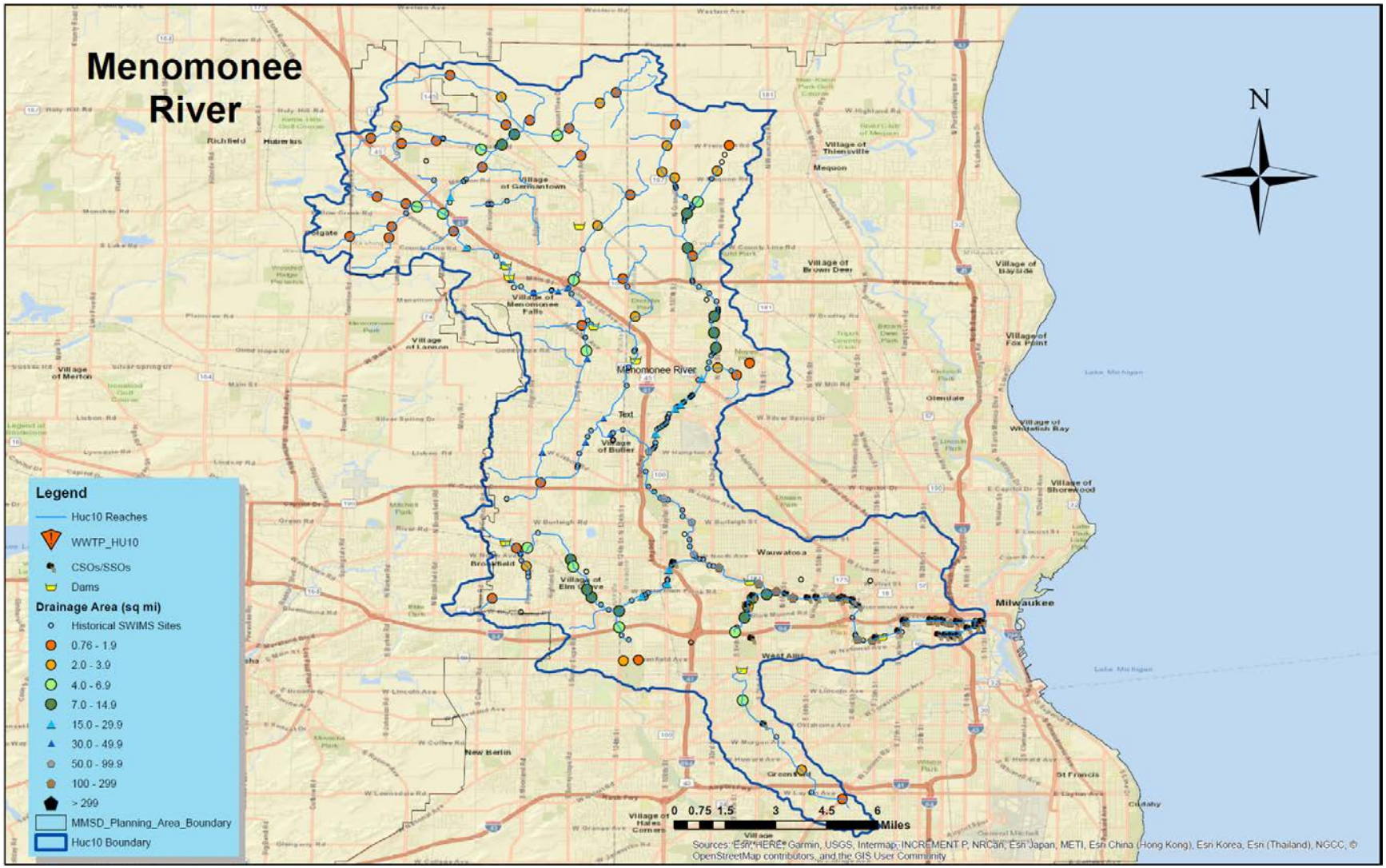
Appendix Figure C-2. *Map of intensive pollution survey and geometric sites in the Kinnickinnic River HUC10 watershed.*

***Appendix Table C-3**. Indicators, parameters, and frequencies at intensive pollution survey sites in the Menomonee River HUC10 organized by drainage area (largest to smallest in mi²).*

HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000304	Menomonee River	MEN01	01	200	139	1	43.03242	-87.91226	0.08	Menomonee River	2nd Street	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN02	01	200	139	1	43.03240	-87.92153	0.58	Menomonee River	Ust. N. 6th Street	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN03	01	200	138	1	43.03194	-87.92583	0.8	Menomonee River	Between 16th St. and 6th St. Viaduct	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN04	01	200	138	1	43.03284	-87.93464	1.36	Menomonee River	Valley Fields	X	X	QHEI	10X	CT07RL	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN05	01	200	137	1	43.03252	-87.94508	1.79	Menomonee River	Ust. 25th Street	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN06	01	200	136	1	43.02462	-87.95921	2.79	Menomonee River	Canoe Launch W. of S. 35th Street	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN08	01	200	135	1	43.04291	-87.97636	4.89	Menomonee River	50th Place Dst. Pedestrian Bridge	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN07	01	200	135	1	43.02502	-87.96568	3.12	Menomonee River	Miller Park - Dst. S. Bridge)	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN09	01	200	125	1	43.04271	-87.99317		Menomonee River	Jacobus Park	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN10	01	200	123	2	43.04550	-88.00030	6.16	Menomonee River	70th Street Bridge	X	X	QHEI	10X	MS1105	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN11	01	200	111	2	43.04880	-88.00791	6.74	Menomonee River	Hart Park	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN12	01	200	109	2	43.05581	-88.02483	7.92	Menomonee River	Dst. 90th Street Outfall	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN13	01	200	88	2	43.06139	-88.03559	8.65	Menomonee River	Ust. North Ave.	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN14	01	200	83	2	43.07500	-88.03649	9.76	Menomonee River	Burleigh Street	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	LMEN01	01	250	80	2	43.10522	-88.05471	0.01	Little Menomonee River	At mouth	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN15	01	200	49	3	43.11260	-88.07131	13.95	Menomonee River	127th Str. - Butler Frontier Park	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN16	01	200	47	3	43.11923	-88.07421	14.82	Menomonee River	Silver Spring Rd..	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	LILY01	01	232	42	3	43.14481	-88.08115		Lilly Creek	Ust. Brentwood Drive	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN17	01	200	40	3	43.16840	-88.08460	19.87	Menomonee River	Ust. Lily Road	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	LILY03	01	232	40	3	43.10910	-88.08180	0.3	Lilly Creek	Ust. Overview Drive	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	LILY02	01	232	40	3	43.10485	-88.10043		Lilly Creek	Co. Hwy. YK	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN18	01	200	35	3	43.17482	-88.08958	20.45	Menomonee River	Menomonee Falls	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN19	01	200	35	3	43.17362	-88.09355	20.67	Menomonee River	Riverside Park - Ust. Nor-X-Way Tributary	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN20	01	200	35	3	43.17296	-88.10405	21.23	Menomonee River	Pilgrim Rd..	X	X	QHEI	10X	MS1130	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN21	01	200	32	4	43.17860	-88.11374	21.92	Menomonee River	Lepper Dam tailwater	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN22	01	200	30	4	43.17860	-88.11374		Menomonee River	Lepper Dam impoundment	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN23	01	200	28	4	43.18496	-88.11685		Menomonee River	Sugar Co. Dam tailwater	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN24	01	200	28	4	43.18496	-88.11685		Menomonee River	Sugar Co. Dam impoundment	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN25	01	200	25	4	43.19223	-88.13300	23.62	Menomonee River	Co. Hwy. Q	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	LMEN02	01	250	20	4	43.11259	-88.05181	0.58	Little Menomonee River	West Willard Ave.	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	LMEN03	01	250	19.7	4	43.12350	-88.04357	1.52	Little Menomonee River	Bike Trail Bridge off of W. Boblink Ave.	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	LMEN04	01	250	19.0	4	43.12516	-88.04121	1.66	Little Menomonee River	Ust. Appleton Ave	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	UND01	01	230	18.5	4	43.05483	-88.04639	0.81	Underwood Creek	Ust. U.S. 45 - Wauwatosa	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	UND02	01	230	18.0	4	43.04858	-88.04687	1.26	Underwood Creek	Dst. St. Hwy. 100 overpass	X	X	QHEI	10X	MS1132	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	MEN26	01	200	17.7	4	43.21392	-88.13974	25.43	Menomonee River	Ust. Of Lilac Rd.. - Schoen Laufen Park	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000304	Menomonee River	LMEN05	01	250	17.0	5	43.13635	-88.03236	2.63	Little Menomonee River	W. Leon Terrace	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000304	Menomonee River	UND03	01	230	15.0	5	43.04322	-88.05786	2.01	Underwood Creek	115th Street	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000304	Menomonee River	LMEN06	01	250	14.2	5	43.14942	-88.02605	3.69	Little Menomonee River	Ust. N. Granville Road	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000304	Menomonee River	LMEN07	01	250	14.0	5	43.15591	-88.02683	4.15	Little Menomonee River	Calumet Rd.. W	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000304	Menomonee River	LMEN08	01	250	12.0	5	43.16293	-88.02673	4.66	Little Menomonee River	Dst. Bradley Rd..	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000304	Menomonee River	MEN27	01	200	11.0	5	43.23622	-88.11749	27.46	Menomonee River	St. Hwy. 145 bridge	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000304	Menomonee River	HON01	01	220	10.7	5	43.04255	-88.01031		Honey Creek	N. of Aurora Hospice	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000304	Menomonee River	HON02	01	220	10.3	5	43.04416	-88.00432	0.13	Honey Creek	Honey Creek Parkway - Wauwatosa	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000304	Menomonee River	LMEN09	01	250	10.0	5	43.19208	-88.03813	6.94	Little Menomonee River	Dst. County Line Rd..	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000304	Menomonee River	UND04	01	230	10.0	5	43.03702	-88.06737	2.88	Underwood Creek	Ust. 124th Street at W. Bleumound Rd..	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000304	Menomonee River	MEN28	01	200	9.8	5	43.24052	-88.11218		Menomonee River	Ust. Fond du Lac Ave.	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000304	Menomonee River	UND05	01	230	9.5	5	43.04290	-88.07926		Underwood Creek	Elm Grove Park	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000304	Menomonee River	HON03	01	220	9.0	5	43.03894	-88.01237		Honey Creek	Dst. W. Wisconsin Ave.	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000304	Menomonee River	LMEN10	01	250	8.0	6	43.20681	-88.03834	8.03	Little Menomonee River	W. Donges Bay Rd.. and N. Granville Rd..	X	X	QHEI	5X	MS1135	4X	4X	2X	2X	Bact 4X		
0404000304	Menomonee River	HON04	01	220	8.0	6	43.03424	-88.01380		Honey Creek	Dst. Honey Creek Pkwy.	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000304	Menomonee River	UND06	01	230	8.0	6	43.05898	-88.08808		Underwood Creek	Adj. Underwood Parkway	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000304	Menomonee River	UND07	01	230	7.0	6	43.04616	-88.08119	3.99	Underwood Creek	Elm Grove Park	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000304	Menomonee River	WILLC01	01	242	6.3	6	43.20670	-88.14275	0.06	Willow Creek	Maple Rd.. - Germantown	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000304	Menomonee River	UND08	01	230	6.0	6	43.05600	-88.08700	4.81	Underwood Creek	Marcella Rd..	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000304	Menomonee River	MEN29	01	200	5.2	6	43.24007	-88.09379		Menomonee River	Pleasant View Drive	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000304	Menomonee River	UND09	01	230	5.0	6	43.06404	-88.10657	7.01	Underwood Creek	Franklin Wirth Park	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000304	Menomonee River	WILLC02	01	242	5.0	6	43.20960	-88.15389	0.68	Willow Creek	Ust. Co. Hwy. Y	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000304	Menomonee River	NX01	01	240	5.0	6	43.17836	-88.08683	0.28	Nor-X Channel	Dst. Fountain Blvd.	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000304	Menomonee River	UND10	01	231	5.0	6	43.03014	-88.06738	0.1	South Branch	Dst. I-94	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000304	Menomonee River	HON05	01	220	5.0	6	43.02807	-88.01781		Honey Creek	84th Str. and W O'Connor Str.	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		

***Appendix Table C-3**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000304	Menomonee River	GOLD01	01	260	4.7	6	43.23413	-88.12643	0.17	Goldendale Creek	Friestadt Road	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000304	Menomonee River	LILY04	01	232	4.3	7	43.14815	-88.08143		Lilly Creek	Good Hope Rd.. - Menomonee Falls	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	LMEN11	01	250	4.2	7	43.21183	-88.03374	8.44	Little Menomonee River	Between Granville and Swan Roads	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	HON06	01	220	4.0	7	42.99889	-88.01454		Honey Creek	Ust. W. Arthur Avenue	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	HON07	01	220	3.0	7	42.96916	-87.98939		Honey Creek	S. Honey Creek Drive. near Armour Park	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	LMC01	01	255	2.8	7	43.22207	-88.04368	1.09	Little Menomonee Creek	Ust. Mequon Rd. (St. Hwy. 167)	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	LMC02	01	255	2.5	7	43.22456	-88.04908	1.43	Little Menomonee Creek	E. of Asbury Woods Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	NOY01	01	251	2.2	7	43.14092	-88.02528	0.22	Noyes Creek at RM 3.05	91st Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	MEN35	01	272	2.2	7	43.25651	-88.11778	0.2	U.T. to Menomone R. @RM	Dst. Rockfield Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	MEN30	01	200	2.2	7	43.25400	-88.07563		Menomonee River	W. Highland or Wasaukee Rd.s.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	LMEN12	01	250	2.0	8	43.22503	-88.02551	9.45	Little Menomonee River	Ust. Mequon Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	LMC03	01	255	2.0	8	43.23580	-88.04693	2.26	Little Menomonee Creek	W. Friestadt Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	GOLD02	01	260	2.0	8	43.24403	-88.16255	2.2	Goldendale Creek	Goldendale Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	DD01	01	235	2.0	8	43.05616	-88.10710	0.32	Dousman Ditch	W. Roualt Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	DP01	01	238	2.0	8	43.16278	-88.06054	0.2	Driveetzka Park Creek	W. Bradley Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	NX02	01	240	2.0	8	43.20156	-88.07664		Nor-X Channel	Donges Bay Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	UND11	01	231	2.0	8	43.01579	-88.06558		S Branch Underwood Creek	Greenfield Park Golf Course	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	GOLD04	01	261	1.8	8	43.23786	-88.14557	0.1	U.T. to Goldendale Creek	Maple Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	WILLC05	01	243	1.8	8	43.21097	-88.15864	0.1	U.T. to Willow Creek	Dst. Hilltop Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	WILLC03	01	242	1.8	8	43.20123	-88.16461		Willow Creek	Beech Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	MEN38	01	274	1.7	8	43.24321	-88.08877	0.1	U.T. to Upper Menomone R. @	E. Lovers Lane	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	LMC05	01	25?	1.1	8	43.21854	-88.04346		U.T. to L. Menomonee (L. Menom. Cr.?)	N. Granville Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000304	Menomonee River	LMEN13	01	250	1.0	9	43.23590	-88.02038	10.25	Little Menomonee River	Freistadt Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	LMC04	01	255	1.0	9	43.24476	-88.04335	2.93	Little Menomonee River	N. Granville Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	NOY03	01	252	1.0	9	43.14292	-88.01165	0.2	Noyes Creek	W. Denver Ave.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	DD03	01	237	1.0	9	43.06387	-88.11130	0.1	U.T. to Dousman Ditch	Wirth Park	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	LILY06	01	234	1.0	9	43.09194	-88.10096	0.1	U.T. to Lily Creek	Dst. W. Capitol Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	LMEN14	01	253	1.0	9	43.18863	-88.03602	0.1	U.T. to L. Menomonee R. @RM. 6.64	Joseph Lichter Park	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	MEN32	01	204	1.0	9	43.22659	-88.12593	0.1	U.T. to Menomonee R. @RM	Division Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	MEN33	01	241	1.0	9	43.19923	-88.13817	0.1	U.T. to Menomonee R. @RM	350 m E. of Maple Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	MEN37	01	273	1.0	9	43.24658	-88.10561	0.1	U.T. to Menomone R. @RM	Driveway off of Pleasant Valley Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	UND12	01	236	1.0	9	43.01616	-88.05918	0.1	U.T. to S. Branch Underwood Cr.	Ust. Greenfield Avenue	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	WILLC07	01	244	1.0	9	43.19645	-88.16576	0.1	U.T. to Willow Creek	County Line Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	DD02	01	235	1.0	9	43.04241	-88.12169		Dousman Ditch	N. of Lake Rd. - opposite side of lake	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	DP02	01	238	1.0	9	43.17892	-88.06581		Driveetzka Park Creek	N. 124th Street	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	GOLD03	01	260	1.0	9	43.23906	-88.17356		Goldendale Creek	Johnson Lane	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	GOLD05	01	261	1.0	9	43.23668	-88.16042		U.T. to Goldendale Creek	Datebrook Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	HON08	01	220	1.0	9	42.95675	-87.97192		Honey Creek	Dst. W. Loomis Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	LILY05	01	233	1.0	9	43.15901	-88.08332		U.T. to Lily Creek	Lily Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	MEN31	01	200	1.0	9	43.25840	-88.06872		Menomonee River	Wasaukee Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	MEN34	01	271	1.0	9	43.24463	-88.11578		U.T. to Menomone R. @RM	Dst. Division Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	MEN36	01	272	1.0	9	43.26580	-88.13974		U.T. to Menomone R. @RM	Dst. Maple Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	MEN39	01	274	1.0	9	43.23156	-88.08369		U.T. to Menomone R. @RM	County Aire Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	NOY02	01	252	1.0	9	43.13778	-88.01720		U.T. to Little Menomonee R, @RM	N. 85th Street	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	NX03	01	240	1.0	9	43.21474	-88.06269		Nor-X Channel	Mequin Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	WILLC04	01	242	1.0	9	43.19695	-88.18262		Willow Creek	Amy Belle Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	WILLC06	01	243	1.0	9	43.21395	-88.17089		U.T. to Willow Creek	Appleton Ave.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	BURC01	01	210	0.20	9	43.02639	-87.92553	0.79	Burnham Canal	11th Street	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000304	Menomonee River	BURC02	01	210	0.13	9	43.08260	-87.92531	0.76	Burnham Canal	Ust. I-43	X	X	QHEI	3X		2X	2X			Bact 2X		



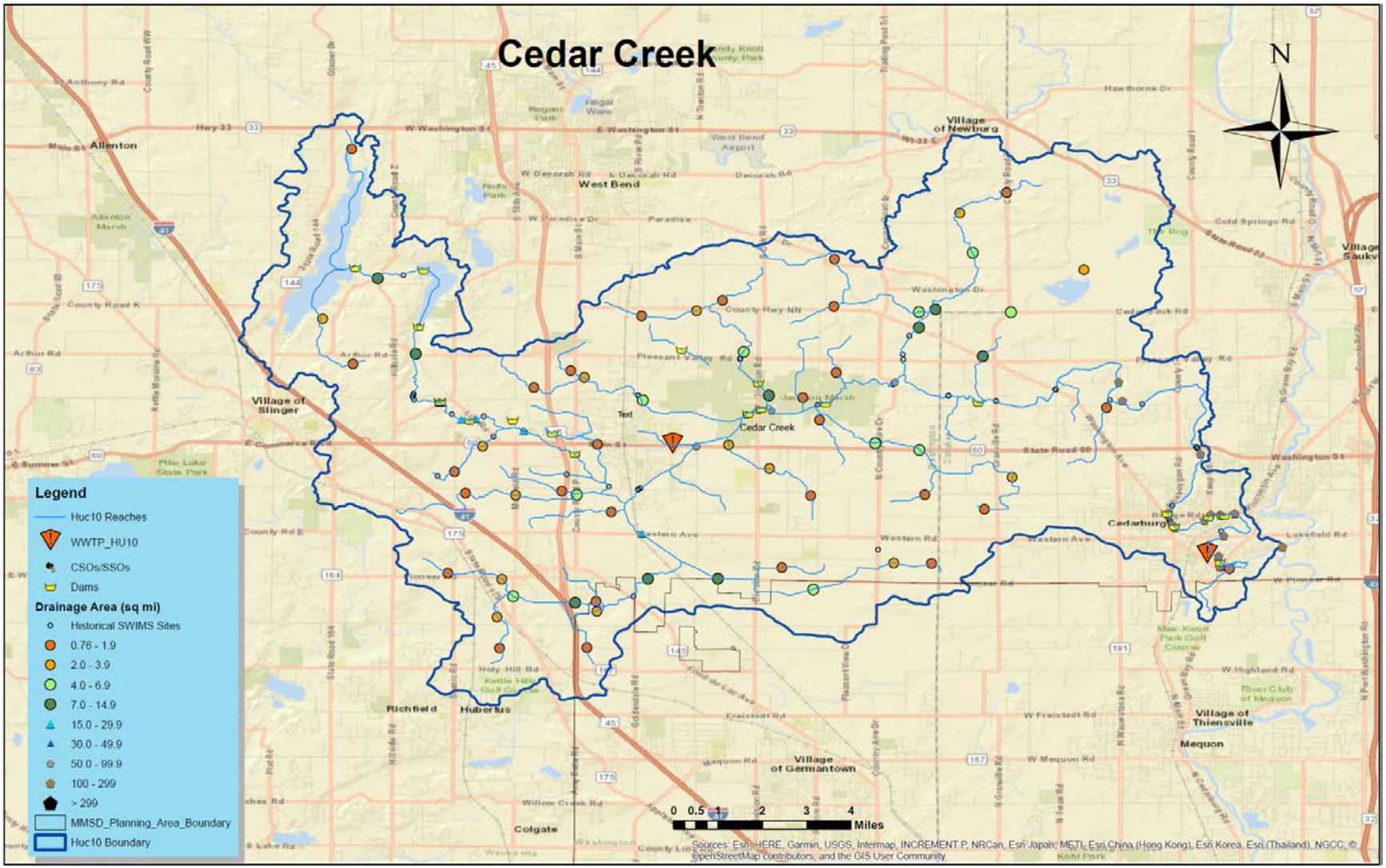
Appendix Figure C-3. *Map of intensive pollution survey and geometric sites in the Menomonee River HUC10 watershed.*

Appendix Table C-4. *Indicators, parameters, and frequencies at intensive pollution survey sites in the Cedar Creek HUC10 organized by drainage area (largest to smallest in mi²).*

HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000303	Cedar Creek	CC01	01	400	126	2	43.29060	-87.95098	0.05	Cedar Creek	Ust. confluence with Milwaukee River	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC02	01	400	125	2	43.28414	-87.97157	1.36	Cedar Creek	Ust. Green Bay Rd..	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC05	01	400	124	2	43.30149	-87.96658	3.5	Cedar Creek	Dst. Wire & Nail Dam - Cedarburg	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC04	01	400	124	2	43.29430	-87.97019	2.31	Cedar Creek	Ust. Co. Hwy. T	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC03	01	400	124	2	43.28770	-87.97190	1.61	Cedar Creek	Dst. Cedarburg WWTP - Hamilton Dam impoundment - Cedarburg	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC07	01	400	124	2	43.30100	-87.97127	3.75	Cedar Creek	Wire & Nail Dam impoundment - Cedarburg	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC08	01	400	124	2	43.30103	-87.97444	3.75	Cedar Creek	Columbia Mill Dam tailwater	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC09	01	400	124	2	43.29946	-87.97644	3.75	Cedar Creek	Columbia Mill Dam impoundment	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC10	01	400	123	2	43.29716	-87.98604	4.67	Cedar Creek	Columbia Road - Cedarburg	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC11	01	400	123	2	43.29797	-87.98708	4.75	Cedar Creek	Ruck Millpond	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC12	01	400	123	2	43.29114	-87.97523		CEDAR CREEK	Ust. Cedarburg WWTP - Hamilton Pond	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC14	01	400	122	2	43.30177	-87.98832	5.03	Cedar Creek	Cedarburg Woolen Mill impoundment - Bridge Street	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC13	01	400	122	2	43.30097	-87.98822	4.97	Cedar Creek	Cedarburg Woolen Mill tailwater - Bridge Street	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC15	01	400	120	2	43.32103	-87.97778	6.56	Cedar Creek	Dst. St. Hwy 60 off of Keup Rd..	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC16	01	400	117	2	43.33829	-88.00330	9.95	Cedar Creek	Covered Bridge Road	X	X	QHEI	10X	MS1158	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC17	01	400	115	2	43.34443	-88.00448	10.67	Cedar Creek	Ust. Kaehlers Mill Road	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC18	01	400	85	2	43.34455	-88.07755	16.25	Cedar Creek	Co. Hwy. M	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC19	01	400	73	2	43.33509	-88.11781	19.1	Cedar Creek	Division Rd.. - Dst. Jackson Marsh	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC20	01	400	65	2	43.33542	-88.12215	19.34	Cedar Creek	Co. Hwy. G near Jackson	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC21	01	400	63	3	43.33382	-88.12603		Cedar Creek	Dst. Jackson Marsh WLA Pool 2	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC22	01	400	63	3	43.33382	-88.12603		Cedar Creek	Ust. Jackson Marsh WLA Pool 2	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC23	01	400	55	3	43.32351	-88.14237	20.4	Cedar Creek	S. 60th W. of Jackson	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC24	01	400	54	3	43.32351	-88.14237	20.76	Cedar Creek	S. 60th W of Jackson	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC25	01	400	18.0	4	43.32859	-88.19884	23.35	Cedar Creek	Dst. Mayfield Rd..	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	LCC01	01	450	18.0	4	43.29492	-88.16021		Little Cedar Creek	Western Ave.	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC26	01	400	17.6	4	43.33240	-88.21439		Cedar Creek	Lily Road to Schweitzer Dam	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC27	01	400	16.2	4	43.33763	-88.22543	27.27	Cedar Creek	Ust. Co. Hwy. C	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC28	01	400	16.0	4	43.33228	-88.21925	26.67	Cedar Creek	Schweitzer Dam impoundment	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000303	Cedar Creek	CC29	01	400	15.0	5	43.33785	-88.22657	27.27	Cedar Creek	Wacker Dam impoundment	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000303	Cedar Creek	CC30	01	400	14.0	5	43.35358	-88.23397	29.06	Cedar Creek	Ust. Pleasant Valley Rd..	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000303	Cedar Creek	NBCC01	01	420	11.8	5	43.36218	-88.06961		North Branch Cedar Creek	Ust. Co. Hwy. NN	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000303	Cedar Creek	LCC01	01	450	11.0	5	43.28024	-88.15816		Little Cedar	Pioneer Rd.	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000303	Cedar Creek	CC31	01	400	10.0	5	43.37825	-88.24641	32.16	Cedar Creek	Dst. Hillside Drive.	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000303	Cedar Creek	CC36	01	403	8.0	5	43.35281	-88.04879		Mud Creek	Co. Hwy NN	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000303	Cedar Creek	KBCC01	01	455	8.0	5	43.28029	-88.13531		Kressen Branch L. Cedar Creek	Dst. Division Road	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000303	Cedar Creek	LCC02	01	450	8.0	5	43.27245	-88.18189		Little Cedar Creek	Ust. Shadow Lane	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000303	Cedar Creek	NBCC02	01	420	7.7	6	43.36817	-88.06425		N Br Cedar Creek	Ust. Co. Hwy. NN	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000303	Cedar Creek	EVGC01	01	435	7.6	6	43.34002	-88.11864	0.1	Evergreen Creek	Dst. Division Road	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000303	Cedar Creek	CC43	01	430	6.0	6	43.32442	-88.08395		U.T. to ?	Dst. Co. Hwy. M	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000303	Cedar Creek	CBC01	01	430	5.0	6	43.32224	-88.06950		Cedarburg Creek	Ust. St. Hwy. 60	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000303	Cedar Creek	LCC03	01	450	5.0	6	43.27454	-88.20218		Little Cedar Creek	Ust. Mayfield Rd.. - Ofrichfield	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000303	Cedar Creek	MUD01	01	403	4.2	6	43.36715	-88.03960		Mud Creek	Cedar Sauk Rd..	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000303	Cedar Creek	PSC01	01	460	4.0	6	43.30765	-88.18137	0.44	Polk Spring	Co. Hwy. P - Jackson	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000303	Cedar Creek	NBCC06	01	421	4.0	6	43.36721	-88.06962	0.1	U.T. to N. Br. Cedar Creek	Co, Hwy. SS	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000303	Cedar Creek	EVGC02	01	435	4.0	6	43.35425	-88.12684		Evergreen Creek	Ust. Feed Lot	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000303	Cedar Creek	FRC01	01	440	4.0	6	43.33849	-88.15984		Friedans Creek	Cedar Creek Rd..	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000303	Cedar Creek	KBCC02	01	455	4.0	6	43.27675	-88.10415		Kressen Br. L. Cedar Creek	Pioneer Rd..?	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000303	Cedar Creek	NBCC03	01	420	4.0	6	43.38663	-88.05208		N. Branch Cedar Creek	Ust. St. Augustine Road	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000303	Cedar Creek	CC37	01	405	3.9	7	43.32390	-88.13178	0.1	U.T. to Cedar Creek	St. Hwy. 60	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000303	Cedar Creek	FRC02	01	440	2.6	7	43.34593	-88.17893		Friedans Creek	Dst. Co. Hwy. P	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000303	Cedar Creek	LEC01	01	465	2.4	7	43.32345	-88.21214	0.61	Lehner Creek	Ust. St. Hwy. 60	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000303	Cedar Creek	LCC04	01	450	2.2	7	43.26771	-88.20744		Little Cedar Creek	Ust.St. Hwy. 175 or Dst. Pleasant Hill Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000303	Cedar Creek	LCC07	01	452	2.0	8	43.26963	-88.17482	0.1	2nd U.T. to L Cedar Creek	Dst. Shadow Lane	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000303	Cedar Creek	LCC09	01	453	2.0	8	43.28013	-88.20587	0.1	3rd U.T. to L Cedar Creek	Dst. Pioneer Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000303	Cedar Creek	CBC02	01	430	2.0	8	43.31337	-88.03922		Cedarburg Creek	Ust. Granville Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000303	Cedar Creek	CC32	01	400	2.0	8	43.36508	-88.26440		Cedar Creek	Dst. Fontana Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000303	Cedar Creek	CC38	01	405	2.0	8	43.31623	-88.11846		U.T. to Cedar Creek	Dst. Division Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000303	Cedar Creek	EVGC03	01	435	2.0	8	43.36768	-88.14225		Evergreen Creek	Ust. Maple Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000303	Cedar Creek	KBCC03	01	455	2.0	8	43.28541	-88.07788		Kressen Br L Cedar Creek	Ust. N. County Aire Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000303	Cedar Creek	MUD02	01	403	2.0	8	43.38107	-88.01574		Mud Creek	Cedarburg Bog Natural Area?	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		

***Appendix Table C-4**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000303	Cedar Creek	NBCC04	01	420	2.0	8	43.39957	-88.05632		N Br Cedar Creek	Ust. Knollwood Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000303	Cedar Creek	PSC02	01	460	2.0	8	43.30753	-88.20135		Polk Springs Creek	Mayfield Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000303	Cedar Creek	CBC05	01	432	1.0	9	43.30766	-88.06772	0.3	U.T. to Cedarburg Creek	Sherman Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	CBC04	01	431	1.0	9	43.33205	-88.10210	0.1	U.T. to Cedarburg Creek	Ust. St. Hwy. 60	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	CC34	01	401	1.0	9	43.28351	-87.96827	0.1	U.T. to Cedar Creek	Cedar Valley Rd.. off of W. Pioneer Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	CC42	01	424	1.0	9	43.33937	-88.10757	0.1	U.T. to Cedar Creek	350 m S. of Spring Valley Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	EVGC05	01	436	1.0	9	43.37108	-88.13380	0.1	U.T. to Evergreen Creek	Ust. Co. Hwy. NN	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	FRC04	01	441	1.0	9	43.34811	-88.18339	0.1	U.T. to Friedans Creek	Ust. Co. Hwy. P	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	LCC11	01	454	1.0	9	43.30207	-88.17015	0.1	U.T. to Cedar Creek	Scenic Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	PSC04	01	461	1.0	9	43.30882	-88.18631	0.1	U.T. to Polk Springs Creek	Ust. U.S. 45	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	CBC03	01	430	1.0	9	43.30290	-88.04826		Cedarburg Creek	Ust. Granville Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	CC33	01	400	1.0	9	43.35031	-88.25449		Cedar Creek	Arthur Road - Diefenbach Corners	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	CC35	01	402	1.0	9	43.33601	-88.00836		U.T. to Cedar Creek	Dst. Cedar Creek Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	CC39	01	405	1.0	9	43.30737	-88.10501		U.T. to Cedar Creek	Ust. Sherman Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	CC40	01	406	1.0	9	43.32410	-88.17461		U.T. to Cedar Creek	St. Hwy 60	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	CC41	01	423	1.0	9	43.34752	-88.09669		U.T. to Cedar Creek	Dst. Pleasant Valley Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	EVGC04	01	435	1.0	9	43.36602	-88.16022		Evergreen Creek	Dst. S. River Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	FRC03	01	440	1.0	9	43.34261	-88.19542		Friedans Creek	Ust. U.S.45 or Dst. N. Mayfield Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	GL01	01	408	1.0	9	43.42047	-88.25493		Gilbert Lake Tributary	Upstream of spring Near West Bend	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	KBCC04	01	455	1.0	9	43.28525	-88.06554		Kressen Br. Cedar Creek	700 m N. of Co. Hwy. M	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	KBCC05	01	456	1.0	9	43.28389	-88.11443		U.T. to Kressen Br. L Creek	350 m N. of Co. Hwy. M	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	LCC05	01	450	1.0	9	43.25760	-88.20662		Little Cedar Creek	Ust. Pleasant Hill Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	LCC08	01	452	1.0	9	43.25776	-88.17812		U.T. to Cedar Creek	Ust. Rockfield Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	LCC10	01	453	1.0	9	43.28204	-88.22351		U.T. to Cedar Creek	Ust. St. Hwy. 145	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	LEC02	01	465	1.0	9	43.31520	-88.22131		Lehner Creek	Scenic Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	NBCC05	01	420	1.0	9	43.40623	-88.04104		N. Br. Cedar Creek	Dst. Co.f Hwy Y - Newberg	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	NBCC07	01	421	1.0	9	43.38451	-88.09725		U.T. to N. Br. Cedar Creek	Ust. Paradise Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	NBCC08	01	422	1.0	9	43.36911	-88.09741		U.T. to U.T. to N. Br. Cedar Creek	Dst. N. Church Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	PSC03	01	460	1.0	9	43.30814	-88.21776		Polk Springs Creek	Dst. Scenic Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000303	Cedar Creek	LCC06	01	451	0.80	9	43.27288	-88.17508		U.T. to Cedar Creek	Springside Lane	X	X	QHEI	3X		2X	2X			Bact 2X		



Appendix Figure C-4. *Map of intensive pollution survey and geometric sites in the Cedar Creek HUC10 watershed.*

***Appendix Table C-5**. Indicators, parameters, and frequencies at intensive pollution survey sites in the Upper Milwaukee River HUC10 organized by drainage area (largest to smallest in mi²).*

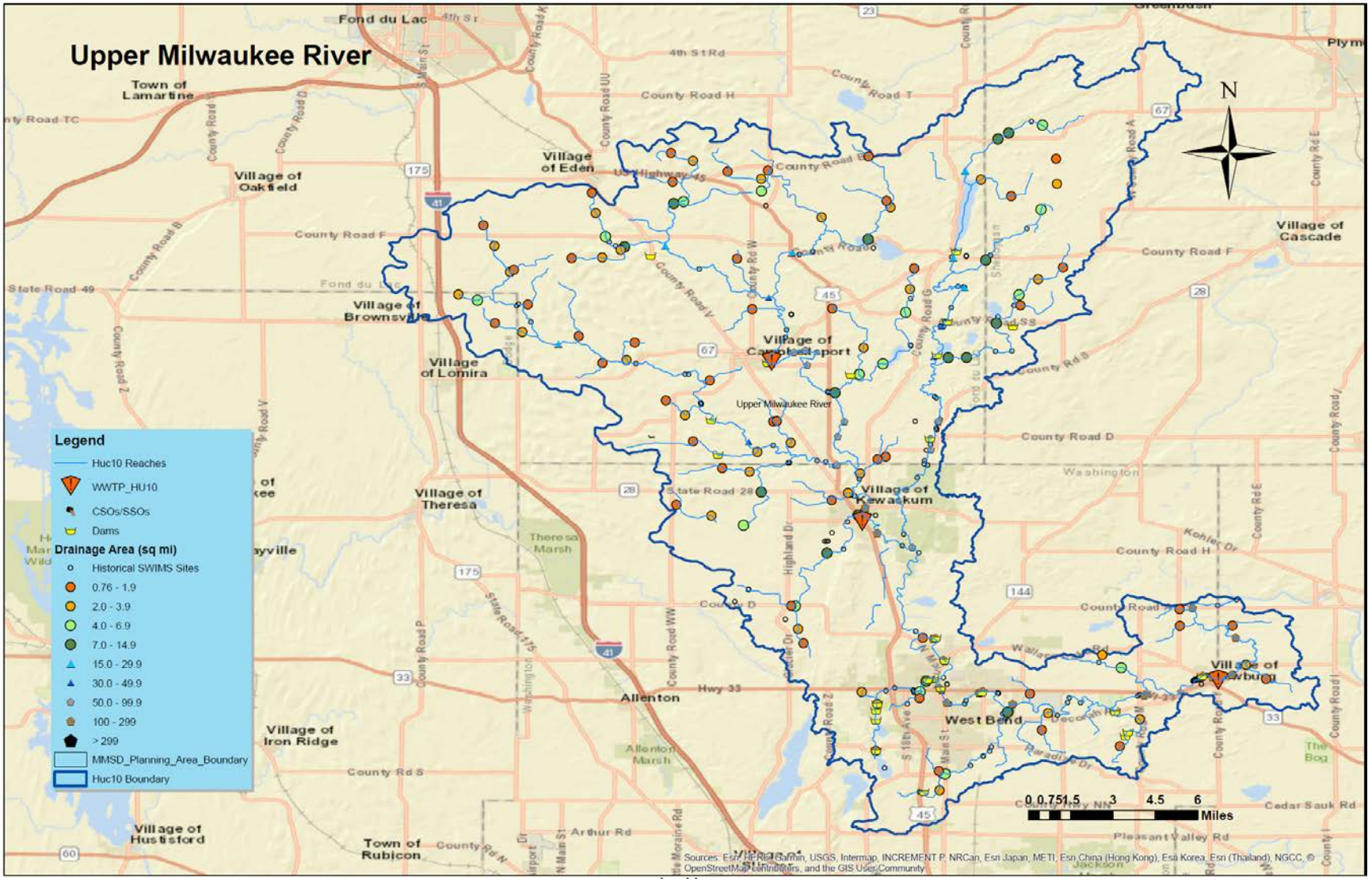
HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000302	Upper Milwaukee River	MR47	01	001	275	1	43.46929	-88.05385	48.34	Milwaukee River	Co. Hwy. A	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR48	01	001	271	1	43.45391	-88.03181	51.62	Milwaukee River	Dst. River Park Rd..	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR49	01	001	266	1	43.43488	-88.03380	54.03	Milwaukee River	Dst. Newburg WWTP - Streamside Rearing Facility Pump RNC	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR50	01	001	265	1	43.43377	-88.04372	54.7	Milwaukee River	Ust. Newburg WWTP - Firemans Park	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR51	01	001	265	1	43.43414	-88.04857	54.97	Milwaukee River	Newburg Dam Tailwater at Co. Hwy. MY	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR52	01	001	264	1	43.43380	-88.04925	55.01	Milwaukee River	Newburg Dam Impoundment	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR53	01	001	256	1	43.42427	-88.07877	57.95	Milwaukee River	Co. Hwy. M	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR54	01	001	243	1	43.41992	-88.14642		Milwaukee River	Dst. West Bend WWTP - Ust. Airport	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR55	01	001	242	1	43.41628	-88.14771	0	Milwaukee River	Ust. West Bend WWTP - Dst. Quaas Creek	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR56	01	001	236	1	43.42645	-88.16171		Milwaukee River	Dst. Old Dam - Co. Hwy. G	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR57	01	001	235	1	43.42565	-88.16361	65.6	Milwaukee River	Ust. Old Dam - Co. Hwy. G	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR58	01	001	234	1	43.42061	-88.18016	66.99	Milwaukee River	Dst. Veterans Ave.	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR59	01	001	232	1	43.42728	-88.18285	67.48	Milwaukee River	West Bend Dam tailwater - St. Hwy 33	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR60	01	001	232	1	43.42833	-88.18399		Milwaukee River	West Bend Dam tailwater - St. Hwy 33	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR61	01	001	222	1	43.45340	-88.18738		Milwaukee River	Barton Dam impoundment	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR62	01	001	221	1	43.44250	-88.18194		Milwaukee River	Ust. Gadow Mill Dam	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR63	01	001	221	1	43.44200	-88.18115		Milwaukee River	Dst. Gadow Mill Dam	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR64	01	001	153	1	43.50778	-88.21592		Milwaukee River	Dst. Kewaskum WWTP	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR65	01	001	135	2	43.52080	-88.22204	77.66	Milwaukee River	Dst. St. Hwy. 28 - Togolf Course Kewaskum	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR66	01	001	135	2	43.51637	-88.22214		Milwaukee River	Kewaskum Dam tailwater	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR67	01	001	101	2	43.51286	-88.07517		Milwaukee River	Ust. Co. Hwy. XX	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR68	01	001	71	2	43.55743	-88.23621	81.82	Milwaukee River	Ust. Old Bridge Road	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR69	01	001	70	2	43.56496	-88.23270	82.44	Milwaukee River	Auburn-Ashford Drive	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR70	01	001	66	3	43.59404	-88.25191	85.25	Milwaukee River	Co. Hwy. YY	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	EBMR01	01	700	59	3	43.50045	-88.19794	0.11	East Branch Milwaukee River	Upstream confluence with Milwaukee R.	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR71	01	001	56	3	43.60075	-88.25863	86.96	Milwaukee River	Dst. Campbellsport WWTP - Sunset Rd..	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	EBMR02	01	700	56	3	43.55053	-88.18834	6.12	East Branch Milwaukee River	Co. Hwy. S	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	EBMR03	01	700	55	3	43.55626	-88.18852	6.61	East Branch Milwaukee River	Mill Road	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR72	01	001	54	3	43.59469	-88.27002	87.82	Milwaukee River	Ust. Campbellsport WWTP - Dst. Co. Hwy. Y	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	EBMR04	01	700	53	3	43.56500	-88.18454	7.39	East Branch Milwaukee River	Near New Fane	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR73	01	001	53	3	43.59817	-88.27129	88.17	Milwaukee River	St. Hwy. 67	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR74	01	001	50	3	43.55612	-88.18900		Milwaukee River	New Fane Dam tailwater - Ust. Mill Rd..	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	WBMR01	01	600	50	3	43.54262	-88.23663	0.74	W Br Milwaukee River	S. 45th Ave.	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR75	01	001	50	3	43.60014	-88.26984		Milwaukee River	Campbellsport Dam	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	WBMR02	01	600	37	3	43.55460	-88.28200	4.43	West Branch Milwaukee River	Ust. Rustic Road	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	EBMR05	01	700	36	3	43.59795	-88.18697	11.32	East Branch Milwaukee River	Dst . Lake to Lake Bike Trail	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	EBMR06	01	700	33	4	43.61391	-88.18295	13.03	East Branch Milwaukee River	Dst. Kettle Moraine Scenic Drive	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR76	01	001	32	4	43.62875	-88.27166		Milwaukee River	Dst. Co. Hwy. W	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	EBMR07	01	700	28	4	43.63386	-88.17118	14.82	East Branch Milwaukee River	Ust. Trail Bridge from Haushalter Lane	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	EBMR08	01	700	24	4	43.64920	-88.17690	18.12	East Branch Milwaukee River	Natural Meander E of Channelized Flow	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	MR77	01	001	23	4	43.65527	-88.32496		Milwaukee River	Dst. Co. Hwy F	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000302	Upper Milwaukee River	WCC01	01	706	17.0	5	43.69397	-88.17085	21.37	Watercress Creek	At mouth	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000302	Upper Milwaukee River	WBMR03	01	600	17.0	5	43.60482	-88.37981		W Br Milwaukee River	Super Drive	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000302	Upper Milwaukee River	MBMR01	01	800	16.5	5	43.65174	-88.25987		Middle Branch Milwaukee River	Ust. S. 45th Street	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000302	Upper Milwaukee River	AL01	01	060	13.2	5	43.57971	-88.23748	0.05	Auburn Lake Creek	Ust. mouth at Milwaukee R.	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000302	Upper Milwaukee River	CLC01	01	710	13.0	5	43.59776	-88.17934	0.3	Crooked Lake Creek	Ust. Mauthe Lake Beach Access Road	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000302	Upper Milwaukee River	CLC02	01	710	12.5	5	43.59784	-88.16988		Crooked Lake Creek	Ust. Co.Hwy. GGG	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000302	Upper Milwaukee River	KEW01	01	090	11.5	5	43.51687	-88.22561	0.18	Kewaskum Creek	Ust. U.S. 45 - Kewaskum	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000302	Upper Milwaukee River	MR78	01	001	11.0	5	43.67701	-88.32041	98.04	Milwaukee River	Eagle Rd..	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000302	Upper Milwaukee River	U.T.U04	01	068	10.0	5	43.65470	-88.34564		U.T. to Milwaukee R. @RM 95.97	Ust. G23	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000302	Upper Milwaukee River	WCC02	01	706	9.0	5	43.71010	-88.15377	1.02	Watercress Creek	S. 67th Ave.	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000302	Upper Milwaukee River	SC01	01	080	9.0	5	43.43153	-88.19070	0.33	Silver Creek	Regner Park	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000302	Upper Milwaukee River	QC01	01	470	8.5	6	43.41567	-88.14881	0.05	Quas Creek	Quas Creek Park	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000302	Upper Milwaukee River	KEW02	01	090	8.5	6	43.49734	-88.24165		Kewaskum Creek	Ust. Kettleview Rd..	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000302	Upper Milwaukee River	WCC03	01	706	8.0	6	43.71325	-88.14822	1.45	Watercress Creek	Watercress Rd.. Ust. St. Hwy 67	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000302	Upper Milwaukee River	PARC01	01	720	8.0	6	43.64788	-88.16005	1.25	Parnell Creek at RM 17.43	Division Rd.. - Parnell	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000302	Upper Milwaukee River	CLC03	01	710	8.0	6	43.61543	-88.15455		Crooked Lake Creek	Downstream St. Hwy. 55	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000302	Upper Milwaukee River	STC01	01	610	8.0	6	43.52877	-88.27544		Stoffel Creek	Ust. S. 28th Street	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000302	Upper Milwaukee River	MBMR02	01	800	7.9	6	43.65850	-88.22054		Middle Branch Milwaukee River	Ust. Mud Lake	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000302	Upper Milwaukee River	SC02	01	080	6.9	6	43.42609	-88.19380	0.8	Silver Creek	Washington Street	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000302	Upper Milwaukee River	AL02	01	060	6.5	6	43.59460	-88.21291	2.56	Auburn Lake Creek	Co. Hwy. DD	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000302	Upper Milwaukee River	WCC04	01	706	6.0	6	43.71722	-88.13094	2.67	Watercress Creek	Ust. Watercress Road	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000302	Upper Milwaukee River	KEW03	01	090	5.0	6	43.47020	-88.25795		Kewaskum Creek	Downstream Co. Hwy D	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000302	Upper Milwaukee River	QC02	01	470	5.0	6	43.38391	-88.18089		Quas Creek	Ust. Co. Hwy. P - S. Main Str.	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000302	Upper Milwaukee River	STC02	01	610	4.3	6	43.51166	-88.28451		Stoffel Creek	Townline Road	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000302	Upper Milwaukee River	UMR06	01	475	4.3	6	43.43837	-88.09038		U.T. to Milwaukee R. @RM 57.4	N. Poplar Rd..	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		

***Appendix Table C-5**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000302	Upper Milwaukee River	AL03	01	060	4.0	7	43.62098	-88.20119	5.53	Auburn Lake Creek	Ust. Co. Hwy SS	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	U.T.U12	01	070	4.0	7	43.67793	-88.31532	0.1	U.T. to Milwaukee River	Ust. Preserve Lane	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	VC01	01	065	4.0	7	43.58920	-88.22503	0.1	Virgin Creek at moU.T.h	At mouth	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	CLC04	01	710	4.0	7	43.62998	-88.14291		Crooked Lake Creek	Ust. Division Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	MR79	01	001	4.0	7	43.68337	-88.27528		Milwaukee River	Ust. U.S. 45	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	PARC02	01	720	4.0	7	43.67390	-88.13163		Parnell Creek	Co. Hwy. V	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	U.T.U05	01	068	4.0	7	43.65993	-88.35543		U.T. to Milwaukee River	Co. Hwy. F	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	WBMR19	01	608	4.0	7	43.62726	-88.42127		U.T. to W. Br. Milwaukee R.	Ust. Butternut. Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	U.T.U08	01	069	4.0	7	43.65313	-88.34762		U.T. to U.T. to U Milwaukee R	Ust. Creekview Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	WBMR04	01	600	3.9	7	43.64175	-88.40453		W Br Milwaukee River	Ust. Campbell Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	MBMR03	01	800	3.4	7	43.67500	-88.20900		Middle Branch Milwaukee River	Rustic Lane	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	WBMR24	01	612	3.0	7	43.55403	-88.26028	0.2	U.T. to West Br. Milwaukee R.	Rustic Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	U.T.U02	01	067	2.6	7	43.63344	43.63344	0.1	U.T. to Milwaukee R. @RM 91.98	Ust. Middle Branch	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	SC03	01	080	2.6	7	43.41975	-88.21583		Silver Creek	Ridge Run Park - North Lot	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	U.T.U18	01	083	2.5	7	43.53825	-88.22463	0.1	U.T. to U Milwaukee R at RM 79.7	Dst. Co. Hwy. S	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	MBMR05	01	801	2.4	7	43.66986	-88.24441	0.2	1st U.T. to Middle Br Milwaukee R.	Mitchell Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	RNCC01	01	477	2.2	7	43.43993	-88.02636	0.1	Riveredge Nature Center Creek	Hawthorne Drive.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	UMR02	01	473	2.2	7	43.41510	-88.12802		6th U.T. to U Milwaukee R	Dst. Decorah Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	KEW04	01	091	2.1	7	43.45834	-88.25649		Kewaskum Creek	Between Glacier Drive and Tower Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	UMR07	01	475	2.1	7	43.44499	-88.10020		4th U.T. to Milwaukee R	Dst. Wallace Lake Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	MR80	01	001	2.0	8	43.68954	-88.27545	101.45	Milwaukee River	Co. Hwy. W	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	VC02	01	065	2.0	8	43.60289	-88.22286	1.44	Virgin Creek at RM 1.35	Lake Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	WBMR16	01	606	2.0	8	43.61092	-88.39819	0.2	6th U.T. to W. Br. Milwaukee R.	Dst. East Lane	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	EBMR09	01	705	2.0	8	43.68918	-88.16253	0.1	U.T. to E. Br. Milwaukee R. @RM	Confluence w Long Lake	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	AL04	01	060	2.0	8	43.63296	-88.19903		Auburn Lake Creek	St. Hwy. 67?	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	CLC05	01	710	2.0	8	43.63808	-88.13310		Crooked Lake Creek	Ust. Co. Rd.. W	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	PARC03	01	720	2.0	8	43.68708	-88.12347		Parnell Creek	Dst. Scenic Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	QC03	01	470	2.0	8	43.37541	-88.18383		Quas Creek	Mile View Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	SC05	01	082	2.0	8	43.42596	-88.22374		U.T. to Silver Creek	W. Washington Str.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	STC03	01	610	2.0	8	43.51656	-88.30100		Stoffel Creek	Lake Bernice Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	U.T.U06	01	068	2.0	8	43.67208	-88.36047		U.T. to Milwaukee R. @RM	Dst. Timberlane Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	U.T.U09	01	069	2.0	8	43.64926	-88.35717		U.T. to U.T. to U Milwaukee R	Dst. Timberlane Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	U.T.U11	01	070	2.0	8	43.69890	-88.31050		Unnamed trib	Mink Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	U.T.U16	01	082	2.0	8	43.52825	-88.23082		U.T. to U Milwaukee R at RM 78.7	Dst. Wildlife Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	UMR04	01	474	2.0	8	43.41198	-88.08085		U.T. to Myra Creek @RM 59.0	Ust. Tuscola Lane	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	WBMR05	01	600	2.0	8	43.65519	-88.41250		W. Br. Milwaukee River	Dst. Co. Hwy. F	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	WBMR07	01	601	2.0	8	43.54932	-88.27746		U.T. to West Br. Milwaukee R.	Dst. Badger Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	WBMR09	01	602	2.0	8	43.56816	-88.31454		2nd U.T. to W. Br. Milwaukee R.	Spring Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	WBMR12	01	604	2.0	8	43.59657	-88.34465		4th U.T. to W. Br. Milwaukee R.	Ust. Co. Hwy. 67	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	WBMR20	01	608	2.0	8	43.63023	-88.43107		8th U.T. to W. Br. Milwaukee R.	Ust. Butternet Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	WBMR22	01	611	2.0	8	43.53914	-88.28139		U.T. to ?	Townline Rd.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	JC01	01	081	1.8	8	43.45387	-88.19242		Junk Creek	Eisenbahn State Trail	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	ENGC01	01	081	1.7	8	43.42278	-88.19409	0.31	Engmon Creek	N. Silverbrook Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	UMR11	01	479	1.4	8	43.45996	-88.06026		U.T. to Milwaukee River @RM 49.93	Dst. Co. Hwy. M	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	UMR12	01	480	1.2	8	43.46858	-88.06045	0.2	U.T. to Milwaukee R. @RM 49.42	Co. Hwy. M	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000302	Upper Milwaukee River	MR81	01	001	1.0	9	43.69342	-88.29269	102.53	Milwaukee River	Co. Hwy B and Pine Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	VC03	01	065	1.0	9	43.62305	-88.23891	3.5	Virgin Creek	Ust. St.Hwy 67	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	U.T.U15	01	072	1.0	9	43.69390	-88.27198	0.2	U.T. to Milwaukee River @RM	Co. Hwy. W	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	CLC07	01	711	1.0	9	43.62459	-88.14223	0.1	U.T. to Crooked Lake Creek	N. Maple Tree Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	U.T.U14	01	071	1.0	9	43.68814	-88.32092	0.1	U.T. to U.T. to U Milwaukee R. @RM	Eagle Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	WBMR11	01	603	1.0	9	43.58615	-88.30189	0.1	U.T. to West Br. Milwaukee R. @RM	Dst. S. Barton Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	AL05	01	060	1.0	9	43.64361	-88.19678		Auburn Lake Creek	S. of Birchwood Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	CLC06	01	710	1.0	9	43.64411	-88.12032		Crooked Lake Creek	Dst. Co. Rd. F	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	EBMR10	01	705	1.0	9	43.68073	-88.14699		U.T. to W. Br. Milwaukee R. @RM	Ust. Scenic Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	KEW05	01	091	1.0	9	43.45105	-88.25373		Kewaskum Creek	Beaver Dam Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	KEW06	01	092	1.0	9	43.47028	-88.25997		U.T. to Kewaskum Creek	Co. Hwy. D	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	MBMR04	01	800	1.0	9	43.70110	-88.22020		Middle Branch Milwaukee River	Co. Hwy. B	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	PARC04	01	720	1.0	9	43.69993	-88.12388		Parnell Creek	Dst. Woodside Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	QC04	01	471	1.0	9	43.38538	-88.18417		U.T. to Quas Creek	Ust. Co Hwy NN	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	RNCC02	01	477	1.0	9	43.43271	-88.01601		Riveredge Creek	South Boundary Of RNC	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	SC04	01	080	1.0	9	43.39572	-88.21651		Silver Creek	Dst. Silver Lake	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	STC04	01	610	1.0	9	43.52215	-88.31904		Stoffel Creek	Co. Hwy. W	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	U.T.U01	01	066	1.0	9	43.62269	-88.28004		U.T. to Milwaukee River @RM 90.32	Co. Hwy. W	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	U.T.U03	01	067	1.0	9	43.64857	-88.28787		U.T. to Milwaukee River @RM 91.98	Middle Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	U.T.U07	01	068	1.0	9	43.68243	-88.36251		U.T. to Milwaukee River @RM	Ust. Timberlane Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	U.T.U10	01	069	1.0	9	43.64885	-88.37282		U.T. to U.T. to Milwaukee R. @RM	Ust. Timberlane Drive	X	X	QHEI	3X		2X	2X			Bact 2X		

***Appendix Table C-5**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000302	Upper Milwaukee River	U.T.U13	01	070	1.0	9	43.70293	-88.32179		U.T. to Milwaukee R. @RM 98.2	Sunny Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	U.T.U17	01	082	1.0	9	43.52453	-88.23926		U.T. to Milwaukee R. @RM 78.7	Knights Ave.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	U.T.U19	01	083	1.0	9	43.54690	-88.21148		U.T. to Milwaukee R. @RM 79.7	Ust. County Line Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	UMR01	01	472	1.0	9	43.42507	-88.13739		U.T. to Milwaukee R @RM	St. Hwy. 33 E or Chopper Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	UMR03	01	473	1.0	9	43.40646	-88.13121		U.T. to Milwaukee R @RM	Ust. Decorah Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	UMR05	01	474	1.0	9	43.39806	-88.09112		U.T. to Milwaukee R @RM	Knollwood Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	UMR08	01	475	1.0	9	43.45770	-88.10690		4th U.T. to Milwaukee R	W. Green Lake Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	WBMR06	01	600	1.0	9	43.66578	-88.41821		W Br Milwaukee River	Ust. Co. Hwy. F	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	WBMR08	01	601	1.0	9	43.55474	-88.31043		U.T. to West Br. Milwaukee R. @RM	Ust. Badger Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	WBMR10	01	602	1.0	9	43.57573	-88.32443		U.T. to West Br. Milwaukee R. @RM	Ust. Co. Hwy. W	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	WBMR13	01	604	1.0	9	43.60550	-88.34037		U.T. to West Br. Milwaukee R. @RM	Rolling Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	WBMR14	01	605	1.0	9	43.59500	-88.35700		U.T. to West Br. Milwaukee R. @RM	Dst. Willow Lane	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	WBMR15	01	605	1.0	9	43.60878	-88.36921		U.T. to West Br. Milwaukee R. @RM	Dst. Driveumlin Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	WBMR17	01	606	1.0	9	43.61542	-88.41225		U.T. to West Br. Milwaukee R. @RM	Dst. Co. Hwy. KK	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	WBMR18	01	607	1.0	9	43.62513	-88.39533		U.T. to West Br. Milwaukee R. @RM	Ust. Co. Hwy. K or Dst. Campbell Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	WBMR21	01	609	1.0	9	43.64294	-88.40251		U.T. to West Br. Milwaukee R. @RM	Ust. Co. Hwy. K	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	WBMR23	01	611	1.0	9	43.54096	-88.29544		U.T. to U.T. to W. Br Milwaukee R. @RM	Dst. Lake Bernice Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	WBMR25	01	612	1.0	9	43.56495	-88.26920		U.T. to W. Br. Milwaukee R. @RM	Auburn Ashford Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	UMR10	01	478	0.90	9	43.46012	-88.03321		U.T. to Milwaukee R. @RM 51.04	Dst. County Lane	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	MBMR06	01	802	0.80	9	43.67831	-88.21106	0.1	U.T. to M. Br. Milwaukee R.	Sunrise Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	U.T.U20	01	084	0.80	9	43.54556	-88.21559	0.1	U.T. to U.T. to Milwaukee R. @RM 79.7	Ust. Co Line Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	WBMR26	01	613	0.80	9	43.56521	-88.26742	0.1	U.T. to U.T. to W. Br. Milwaukee R.	Auburn Ashford Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000302	Upper Milwaukee River	UMR09	01	476	0.70	9	43.44120	-88.10191		U.T. to U.T. to Milwaukee R. @RM 57.4	Wallace Lake Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		



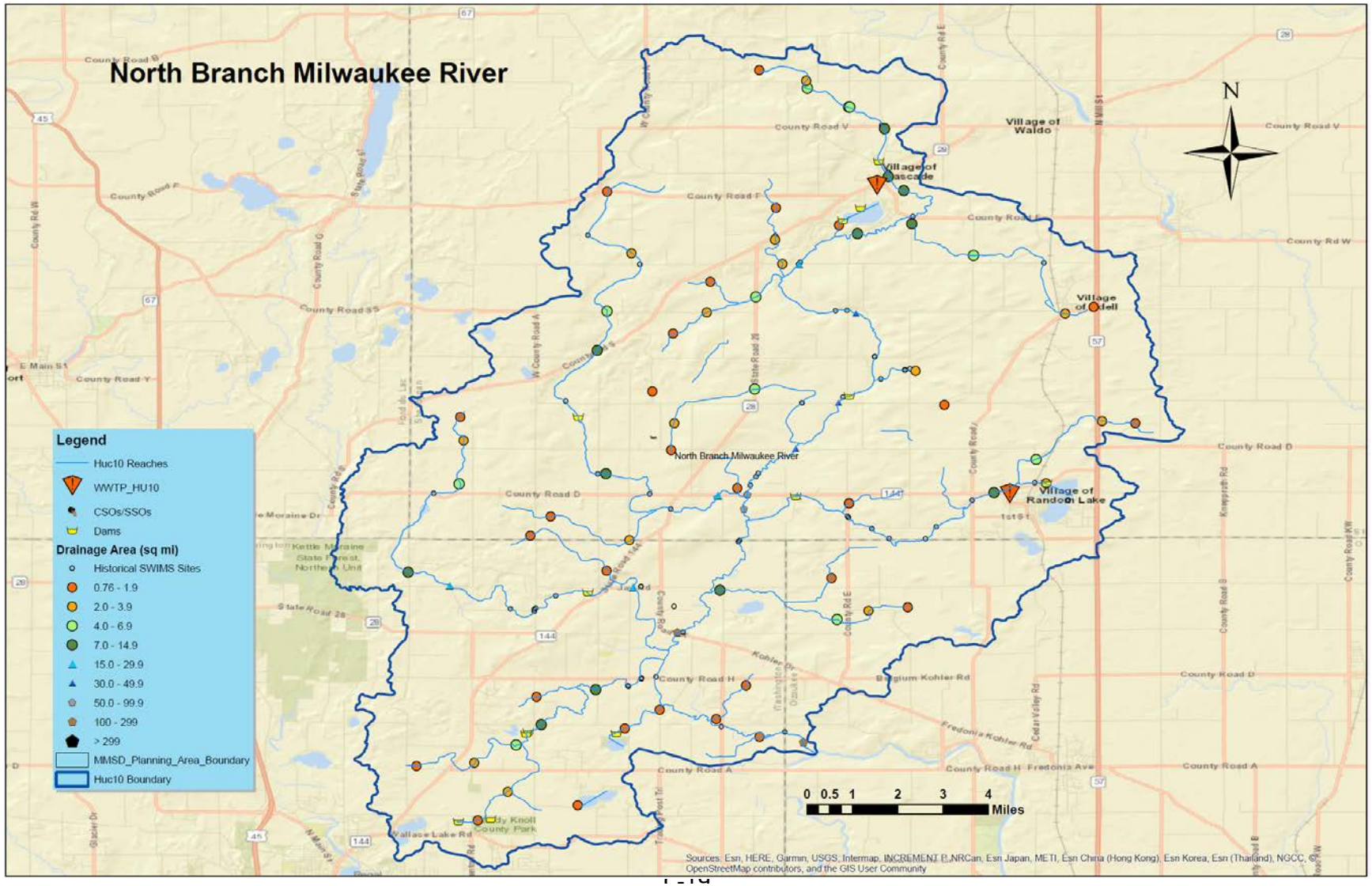
Appendix Figure C-5. *Map of intensive pollution survey and geometric sites in the Upper Milwaukee River HUC10 watershed.*

***Appendix Table C-6**. Indicators, parameters, and frequencies at intensive pollution survey sites in the North Branch Milwaukee River HUC10 organized by drainage area (largest to smallest in mi^2).*

HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000301	North Branch Milwaukee River	NBMR01	01	500	246	1	43.47790	-88.03491	0.36	North Branch Milwaukee River	500 meters Dst. Riverside Drive	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000301	North Branch Milwaukee River	NBMR02	01	500	69	3	43.55243	-88.05392		North Branch Milwaukee River	Dst. St. Hwy. 144 - dst. Mink Creek	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000301	North Branch Milwaukee River	NBMR03	01	500	51	3	43.55695	-88.05279		North Branch Milwaukee River	S. 144th Ave.	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000301	North Branch Milwaukee River	NBMR04	01	500	40	3	43.57151	-88.03741		North Branch Milwaukee River	Ust. Abbott Drive	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000301	North Branch Milwaukee River	NBMR05	01	500	36	4	43.58621	-88.02373		North Branch Milwaukee River	Co. Hwy. SS	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000301	North Branch Milwaukee River	NBMR06	01	500	33	4	43.61476	-88.01815		North Branch Milwaukee River	Indian Mound Rd..	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000301	North Branch Milwaukee River	NBMR07	01	500	18.3	4	43.63044	-88.03629		North Branch Milwaukee River	Dst. Co. Hwy W	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000301	North Branch Milwaukee River	STNC01	01	520	18.0	5	43.52732	-88.08931		Stoney Creek	Co. Hwy. X - Boltonville	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000301	North Branch Milwaukee River	MNKC01	01	540	17.2	5	43.55662	-88.06229		Mink Creek	St. Hwy. 144	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000301	North Branch Milwaukee River	SILVC01	01	530	17.0	5	43.55659	-88.03688		Silver Creek	S. 144th - Camp Awana Road	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000301	North Branch Milwaukee River	STNC02	01	520	16.0	5	43.52787	-88.14783		Stoney Creek	Moraine Drive	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000301	North Branch Milwaukee River	MNKC02	01	540	12.0	5	43.56354	-88.09792		Mink Creek	Dst. Boltonville Road	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000301	North Branch Milwaukee River	WALLC01	01	510	11.5	5	43.49462	-88.10119		Un Cr	Ust. Boltonville Road	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000301	North Branch Milwaukee River	NBMR08	01	500	11.0	5	43.64017	-88.01761		North Branch Milwaukee River	Cascade Road	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000301	North Branch Milwaukee River	MNKC03	01	540	9.2	5	43.60288	-88.10068		Mink Creek	Co. Hwy. S	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000301	North Branch Milwaukee River	NBMR09	01	500	9.2	5	43.65393	-88.00282		North Branch Milwaukee River	Dst. Cascade WWTP - Co. Hwy. NN	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000301	North Branch Milwaukee River	SILVC02	01	530	9.2	5	43.55750	-87.97401		Silver Creek	Dst. Random Lake WWTP - St. Hwy. 44	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000301	North Branch Milwaukee River	STNC03	01	520	9.2	5	43.53205	-88.16101		Stoney Creek	E. Moraine Drive. and Westscott Rd..	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000301	North Branch Milwaukee River	NBMR17	01	504	9.0	6	43.52639	-88.06152	0.1	U.T. to N. Br. Milwaukee R.	Filmore Road	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	NBMR10	01	500	9.0	6	43.65838	-88.00777		North Branch	Ust. Cascade WWTP -St. Hwy. 28	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	WALLC02	01	510	9.0	6	43.48347	-88.11856		Wallace Creek	Dst. Shalom Drive	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	AT01	01	513	8.0	6	43.64331	-88.00026	0.2	Adell Tributary	Co. Hwy. NN	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	NC01	01	580	7.0	6	43.67366	-88.00897		Nichols Creek	Dst. Co. Hwy. V	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	NC02	01	580	6.0	6	43.68058	-88.02041		Nichols Creek	Cedar Lane Rd..	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	NC03	01	580	5.5	6	43.68055	-88.02009		Nichols Creek	Cedar Lane Rd..	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	WALLC03	01	510	5.0	6	43.47696	-88.12658		Wallace Creek	Ust. S. Indian Lore Rd..	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	MEC01	01	560	4.6	6	43.61996	-88.05008	0.2	Melius Creek	St. Hwy. 28	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	AT02	01	513	4.6	6	43.63326	-87.98056		Adell Tributary	Bates Rd..	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	BATC01	01	550	4.6	6	43.59057	-88.05042		Batavia Creek	S. 28th Str. - Batavia	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	MNKC04	01	540	4.6	6	43.61544	-88.09757		Mink Creek	Co. Hwy. SS	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	NBMR18	01	504	4.6	6	43.51704	-88.02412		U.T. to N Br Milwaukee R.	Dst. Co. Hwy. E	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	NC04	01	580	4.6	6	43.68662	-88.03359		Nichols Creek	Dst. Co. Hwy.y N	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	SILVC03	01	530	4.6	6	43.56811	-87.96059		Silver Creek	Dst. Allen Road	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	STNC04	01	520	4.6	6	43.56030	-88.14476		Stoney Creek	Ust. Co. Hwy. D	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000301	North Branch Milwaukee River	CHC01	01	570	3.2	7	43.63050	-88.04160		Chambers Creek	Co. Hwy. W	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	AT03	01	513	2.6	7	43.61461	-87.95132		Adell Tributary	Co. Hwy. I	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	CHC02	01	570	2.6	7	43.63822	-88.04393		Chambers Creek	Dst. St. Hwy. 28	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	NBMR19	01	504	2.6	7	43.51978	-88.01406		U.T. to N Br Milwaukee R.	Pioneer Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	NC05	01	580	2.6	7	43.68894	-88.03396		Nichols Creek	Co. Hwy N	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	SILVC04	01	530	2.6	7	43.58030	-87.93954		Silver Creek	St. Rt. 57	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	STNC05	01	520	2.6	7	43.57415	-88.14333		Stoney Creek	Brazelton	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	WALLC07	01	512	2.6	7	43.46202	-88.12921		2nd U.T. to Wallace Creek	Ust. S. Indian Lore Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	BC03	01	551	2.3	7	43.57967	-88.07609		U.T. to Batavia Creek	Ust. S Co. Hwy. A	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	GV01	01	545	2.3	7	43.59638	-87.99908		Gooseville Creek	E. of Lynn Rd.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	MEC02	01	560	2.3	7	43.61502	-88.06574		Melius Creek	Co. Hwy. SS	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	MNKC05	01	540	2.3	7	43.63392	-88.08977		Mink Creek	Mink Creek Rd.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	RLC01	01	531	2.3	7	43.56040	-87.95740		Random Lake	Dst. Random Lake - St. Hwy. 44	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	WALLC04	01	510	2.3	7	43.47122	-88.13993		Wallace Creek	Dst. Co Hwy. A	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	MNKC07	01	541	2.0	8	43.54232	-88.09043		North Branch Mink Creek	Ust.Cranberry Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	NBMR13	01	502	1.8	8	43.48521	-88.06274	0.1	U.T. to N. Br Milwaukee R	Ust. Co. Hwy. M	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	STNC07	01	521	1.8	8	43.53253	-88.09771	0.1	U.T. to Stoney Creek	1st U.T. to Stoney Creek, Bolton Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	NBMR22	01	506	1.6	8	43.64279	-88.02352	0.3	U.T. to N. Br. Milwaukee R.	Dusty Lane	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	NBMR15	01	503	1.6	8	43.48816	-88.08077	0.1	U.T. to N. Br. Milwaukee R.	Trading Post Trail	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	SILVC06	01	532	1.2	8	43.55408	-88.02028	0.2	U.T. to Silver Creek	Co. Hwy. DE	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	WALLC06	01	511	1.1	8	43.49234	-88.12007	0.3	U.T. to Wallace Creek	Indian Lore Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	MNKC09	01	542	1.1	8	43.55890	-88.05596		U.T. to Mink Creek	Ust. St. Hwy. 144	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000301	North Branch Milwaukee River	NBMR12	01	501	1.0	9	43.47954	-88.04889	0.1	U.T. to N. Br. Milwaukee R. @RM	Riverside Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	NBMR21	01	505	1.0	9	43.53021	-88.02591	0.1	U.T. to N. Br. Milwaukee R. @RM	Ust. Jay Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	AT04	01	513	1.0	9	43.61680	-87.94223		Adell Tributary	St. Hwy. 57	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	BC02	01	550	1.0	9	43.58981	-88.08308		Batavia Creek	Spring Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		

***Appendix Table C-6**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000301	North Branch Milwaukee River	BC04	01	551	1.0	9	43.57111	-88.07709		U.T. to Batavia Creek	Brazelton Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	CHC03	01	570	1.0	9	43.64842	-88.04362		Chambers Creek	Dst. Co. Hwy. F	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	GV01	01	545	1.0	9	43.58553	-87.98986		Gooseville Creek	Co. Hwy. SS	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	MEC03	01	560	1.0	9	43.60827	-88.07648		Melius Creek	E. of Trout Spring Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	MEC04	01	561	1.0	9	43.62481	-88.06456		U.T. to Melius Creek	SE of Co. Hwy. S	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	MNKC06	01	540	1.0	9	43.65356	-88.09750		Mink Creek	Co. Hwy. F	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	MNKC08	01	541	1.0	9	43.54991	-88.11556		N. Branch Mink Creek	Dst. N. Paradise Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	NBMR11	01	500	1.0	9	43.69232	-88.04895		N. Branch Milwaukee River	Driveway off of Kettleview Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	NBMR14	01	502	1.0	9	43.49592	-88.05317		U.T. to N. Br. Milwaukee R. @RM	Dst. Co. Hwy. H	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	NBMR16	01	503	1.0	9	43.48221	-88.09186		U.T. to N. Br. Milwaukee R. @RM	Ust. Orchard Valley Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	NBMR20	01	504	1.0	9	43.52090	-88.00156		U.T. to N. Br. Milwaukee R. @RM	E. of Pioneer Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	SILVC05	01	530	1.0	9	43.57967	-87.92889		Silver Creek	Vorpahl Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	SILVC07	01	533	1.0	9	43.55408	-88.02028		U.T. to Silver Creek	St. Hwy. 144	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	STNC06	01	520	1.0	9	43.58165	-88.14440		Stoney Creek	Dst. Pond - access via Maple Tree Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	STNC08	01	521	1.0	9	43.54381	-88.12206		U.T. to Stoney Creek	N. Paradise Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	WALLC05	01	510	1.0	9	43.47022	-88.15838		Wallace Creek	Dst. Forest View Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000301	North Branch Milwaukee River	WALLC08	01	512	1.0	9	43.45288	-88.13880		U.T. to Wallace Creek	Ust. Newark Drive E.	X	X	QHEI	3X		2X	2X			Bact 2X		



Appendix Figure C-6. *Map of intensive pollution survey and geometric sites in the North Branch Milwaukee River HUC10 watershed.*

Appendix Table C-7A. *Indicators, parameters, and frequencies at intensive pollution survey sites in the Root River HUC10 organized by drainage area (largest to smallest in mi^2).*

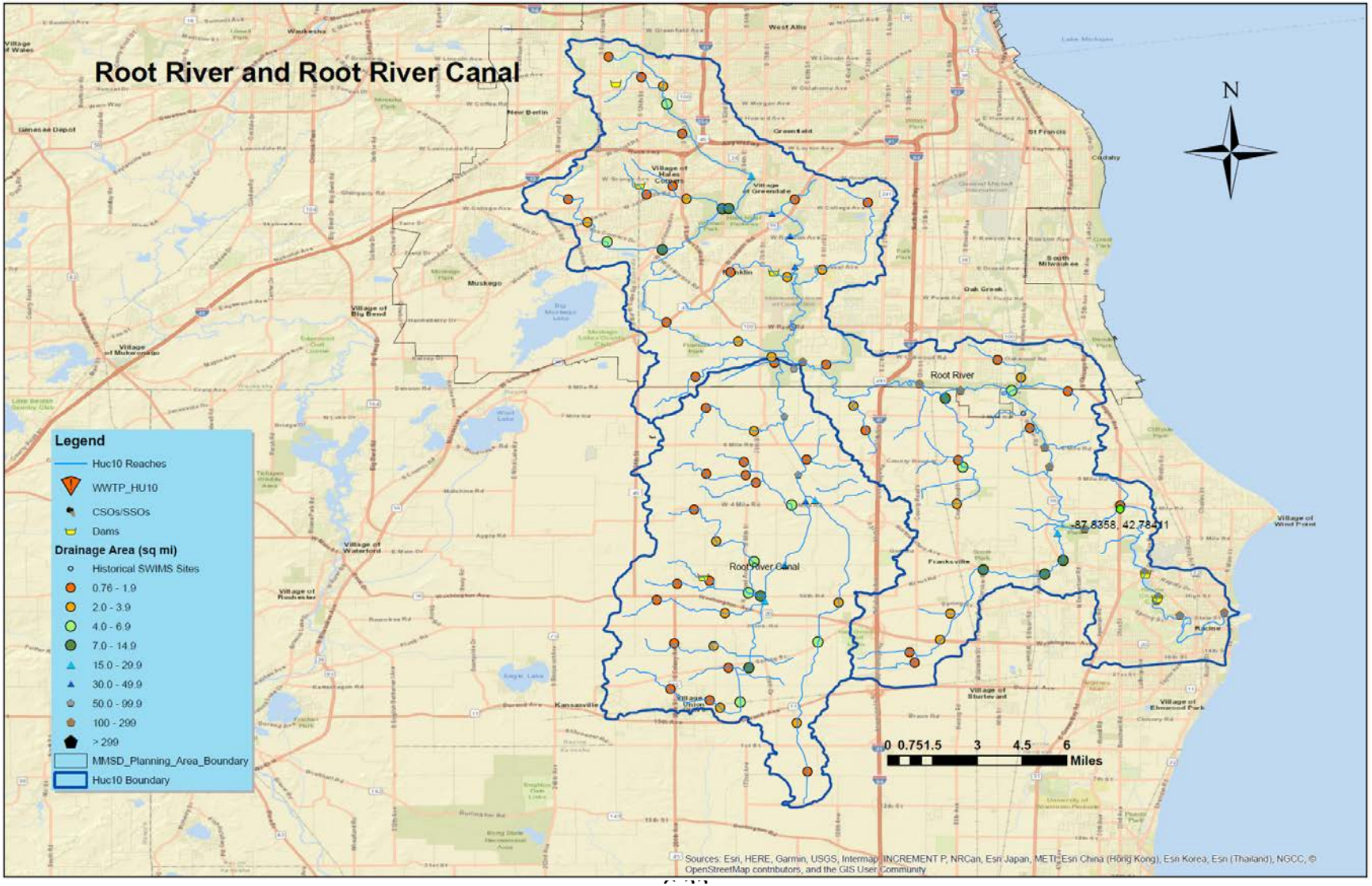
HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000203	Root River	RR01	02	001	198	1	42.73398	-87.78539		Root River	Ust. S. Main Street Bridge	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR02	02	001	192	1	42.73270	-87.80695		Root River	Spring Street - Brose Park	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR03	02	001	188	1	42.74000	-87.81836		Root River	Racine Colonial Park Dam tailwater	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR04	02	001	187	1	42.74170	-87.81732		Root River	Racine Colonial Park Dam impoundment	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR05	02	001	186	1	42.74170	-87.81732		Root River	Horlicks Dam tailwater - Rapids Ct.	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR06	02	001	185	1	42.75364	-87.82396		Root River	Horlicks Dam impoundment - Rapids Ct	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR07	02	001	180	1	42.77456	-87.85319		Root River	Johnson Park	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR08	02	001	164	1	0.00000	0.00000		Root River	4 Mile Road	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR09	02	001	162	1	42.80480	-87.87022		Root River	East River Road	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR10	02	001	160	1	42.81406	-87.87262		Root River	6 Mile Road	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR11	02	001	150	1	42.84187	-87.91343		Root River	St. Hwy. 38	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR12	02	001	138	1	42.84499	-87.93337		Root River	S. 13th Street	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR13	02	001	121	2	42.85571	-87.98994		Root River	S. 60th Street	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR14	02	001	57	3	0.00000	0.00000		Root River	W. Oakwood	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR15	02	001	50	3	42.87269	-87.99488		Root River	W. Ryan Rd.	X	X	QHEI	10X	MS1120	8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR16	02	001	40	4	42.90167	-87.99381		Root River	W. DriveeXel Ave.	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR17	02	001	37	4	42.91662	-87.99606		Root River	W. Rawson Ave.	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	RR18	02	001	33	4	42.92743	-88.00497		Root River	S. Root River Parkway	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000203	Root River	HC01	02	010	15.0	5	42.77273	-87.86633		Hoods Creek	Brook Road	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000203	Root River	RR19	02	001	15.0	5	42.94579	-88.01501		Root River	W. Orange Ave.	X	X	QHEI	8X	MS1112	6X	6X	3X	3X	Bact 6X	1X	1X
0404000203	Root River	HC02	02	010	13.0	5	42.75933	-87.86344		Hoods Creek	Northwestern Ave.	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000203	Root River	HC03	02	010	12.4	5	42.75269	-87.87239		Hoods Creek	Dst. Airline Road	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000203	Root River	TESS01	02	076	10.4	6	42.92977	-88.02893		Tess Corners Creek	Whitnail Park Drive	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000203	Root River	HU01	02	030	10.0	6	42.83786	-87.92065	0.1	Husher Creek	Dst. 7-1/2 Mile Road	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000203	Root River	TESS02	02	076	10.0	6	42.92991	-88.02575		Tess Corners Creek	W. College Ave.	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000203	Root River	HC04	02	010	8.0	6	42.75475	-87.90222		Hood's Creek	N. Fancher Rd..	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000203	Root River	TESS03	02	076	7.3	6	42.90988	-87.90806		Tess Corners Creek	W. Forest Home Ave.	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000203	Root River	HU02	02	030	6.2	6	42.80452	-87.91219		Husher Creek	Ust. 5 Mile Road	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000203	Root River	RR20	02	001	6.2	6	42.98054	-88.05576		Root River	W. Beloit Rd..	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000203	Root River	TESS04	02	076	6.1	7	42.91370	-88.08487		Tess Corners Creek	Woods Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	CRAY01	02	020	6.0	7	42.84163	-87.88847	0.1	Crayfish Creek	Dst. County Line Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	RR21	02	001	3.5	7	42.98923	-88.05762	3.5	Root River	W. Oklahoma Ave.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	LG01	02	075	3.5	7	42.89662	-87.99744		Legend Creek	S. 92nd Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	WHPC01	02	077	3.5	7	42.93465	-88.04633		Whitnall Park Creek	Whitnall Park Drive. Dst. S. 108th St	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	HC05	02	010	3.3	7	42.72080	-87.92314		Hoods Creek	Washington Ave.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	RR29	02	005	3.2	7	42.83417	-87.96526	0.1	U.T. to Root River	Dst. 7 1/2 Mile Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	EBRR01	02	080	3.2	7	42.90017	-87.98044		East Br Root River	W Victory Creek Drive. - Pleasant View Park	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	HU03	02	030	3.2	7	42.78669	-87.91508		Husher Creek	Co. Hwy. H	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	RR26	02	004	3.2	7	42.85788	-88.00501		U.T. to Root River	Adj. W. Oakwood Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	RYAN01	02	070	3.2	7	42.86546	-88.02122		Ryan Creek	S. 92nd Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	HC07	02	011	3.1	7	42.73345	-87.91827	0.2	U.T. to Hoods Creek	500 m S. of Co. Hwy. C	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	CRAY02	02	020	3.1	7	42.84784	-87.88397		Crayfish Creek	Dst. E. Elm Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	TESS05	02	076	3.1	7	42.92323	-88.09440		Tess Corners Creek	Tess Corners Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	HC06	02	010	1.6	8	42.70966	-87.93554		Hoods Creek	Louis Sorenson Rd.. or International Drive.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	RR22	02	001	1.6	8	43.00341	-88.08409		Root River	West Paddock Parkway	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	CRAY03	02	020	1.5	8	42.85655	-87.89535		Crayfish Creek	Dst. East Oakwood Drive	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	CRAY04	02	021	1.5	8	42.84127	-87.86118		U.T. to Crayfish Creek	Dst. County Line Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	EBRR02	02	080	1.5	8	42.93271	-87.95827		East Br. Root River	S. 33rd Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	LG02	02	075	1.5	8	42.89898	-88.02493		Legend Creek	Lion Legends Park	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	RR24	02	003	1.5	8	42.82226	-87.95935		U.T. to Root River	W. 6 1/2 Mile Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	RR27	02	004	1.5	8	42.84826	-88.04194		U.T. to Root R.	Driveway off of W. S. County Line Rd.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	RR31	02	083	1.5	8	42.99350	-88.06818		U.T. to Root River	S. 124th Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	RYAN02	02	070	1.5	8	42.87471	-88.05605		Ryan Creek	W. Loomis Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	TESS06	02	076	1.5	8	42.93436	-88.10371		Tess Corners Creek	S. Moorland Rd..	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	WHPC02	02	077	1.5	8	42.93661	-88.06570		Whitnall Park Creek	S. Kurtz Rd.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	WILD01	02	082	1.5	8	42.96608	-88.04836		Wildcat Creek	S. 108th Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000203	Root River	RR30	02	006	1.2	9	42.85416	-87.97846	0.1	U.T. to Root River	Dst. Oakwood Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		

***Appendix Table C-7A**. Continued.*

HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000203	Root River	DALE01	02	081	1.0	9	42.93431	-87.99374	0.1	Dale Creek	Southway	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000203	Root River	HU04	02	031	1.0	9	42.80788	-87.91445	0.1	U.T. to Husher Creek	Co. Hwy. H	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000203	Root River	HC08	02	012	1.0	9	42.71468	-87.93799		U.T. to Hoods Creek	International Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000203	Root River	WHPC03	02	078	1.0	9	42.94072	-88.05303		U.T. to Whitall Park Creek	Parnell Ave.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000203	Root River	RR23	02	002	0.80	9	42.78588	-87.83572	0.1	U.T. to Root River	4 Mile Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000203	Root River	RR25	02	003	0.80	9	42.82342	-87.87962	0.1	U.T. to Root River	West River Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000203	Root River	RR28	02	004	0.70	9	42.83049	-87.88276	0.1	U.T. to Root River	Ust. RR Bridge	X	X	QHEI	3X		2X	2X			Bact 2X		

***Appendix Table C-7B**. Indicators, parameters, and frequencies at intensive pollution survey sites in the Root River Canal HUC10 organized by drainage area (largest to smallest in mi^2).*

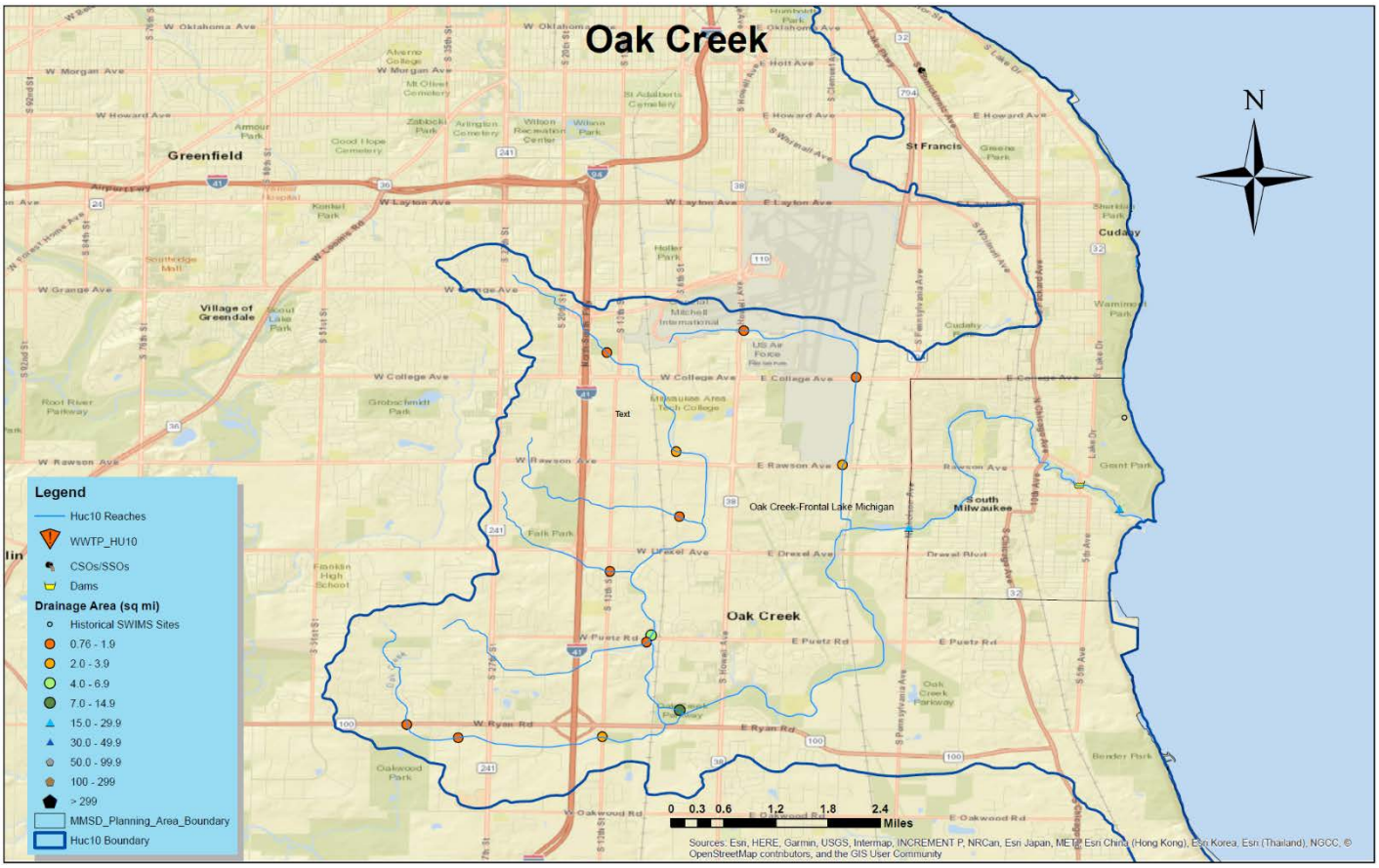
HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000202	Root River Canal	RRC01	02	040	66	3	42.85226	-87.99429	0.2	Root River Canal	Ust. 60th Street	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000202	Root River Canal	RRC02	02	040	62	3	42.82925	-87.99890		Root River Canal	West 7 Mile Rd..	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000202	Root River Canal	RRC03	02	040	55	3	42.80085	-87.99214		Root River Canal	West 5 Mile Rd..	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000202	Root River Canal	WBRRC01	02	060	32	4	42.78795	-87.98857		West Br Root River Canal	Dst. 4 Mile Road	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000202	Root River Canal	WBRRC02	02	060	29	4	42.75708	-87.99875		West Branch Root River Canal	2 Mile Road	X	X	QHEI	10X		8X	8X	4X	4X	Bact 8X	1X	1X
0404000202	Root River Canal	WBRRC03	02	060	16.0	5	42.73982	-88.00847		West Br Root River Canal	50th Street	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000202	Root River Canal	EBRRC01	02	050	15.2	5	42.78851	-87.98412	0.1	East Br Root R Canal	Dst. 4 Mile Road	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000202	Root River Canal	WBRRC09	02	064	9.0	5	42.74201	-88.01038		U.T. to W. Br. Root River Canal	50th Street	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000202	Root River Canal	WBRRC04	02	060	8.0	6	42.70722	-88.01601		West Br Root River Canal	Spring Street	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000202	Root River Canal	RAY01	02	061	4.8	6	42.78619	-87.99526		Raymond Creek	Ust. 4 Mile Road	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000202	Root River Canal	EBRRC02	02	050	4.0	7	42.71966	-87.98253		East Br. Root R. Canal	Dst. Spring Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000202	Root River Canal	WBRRC05	02	060	4.0	7	42.69057	-88.02022		West Br. Root River Canal	RR Trestle	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000202	Root River Canal	WBRRC10	02	064	4.0	7	42.75867	-88.01350		U.T. to .U.T.. to W. Br. Root River Canal	2 Mile Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000202	Root River Canal	WBRRC13	02	065	4.0	7	42.74350	-88.01623		U.T. to U.T. to W. Br. Root River Canal	Raymond Ave.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000202	Root River Canal	EBRRC03	02	050	3.0	7	42.73884	-87.97242		East Br. Root River Canal	50th Str.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000202	Root River Canal	EBRRC04	02	050	2.1	7	42.68045	-87.99282		East Br Root River Canal	Braun Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000202	Root River Canal	RRC05	02	042	2.1	7	42.82198	-88.01355		2nd U.T. to Root R. Canal	Dst. 76th Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000202	Root River Canal	WBRRC06	02	060	2.1	7	42.68783	-88.02996		West Br Root River Canal	Dst. Union Grove WWTP - 67th Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000202	Root River Canal	WBRRC16	02	068	2.1	7	42.71771	-88.03317		2nd U.T. to W Br. Root R Canal	52nd Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000202	Root River Canal	YC01	02	067	2.1	7	42.73363	-88.02765		Yorkville Creek	63rd Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000202	Root River Canal	WBRRC11	02	064	2.0	8	42.76859	-88.03189		U.T. to W Br Root R Canal	Dst. 3 Mile Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000202	Root River Canal	RAY02	02	061	2.0	8	42.80063	-88.01759	0.1	Raymond Creek	W. 5 Mile Road	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000202	Root River Canal	WBRRC07	02	060	1.8	8	42.69145	-88.03502		West Br. Root River Canal	67th Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000202	Root River Canal	RRC07	02	043	1.1	9	42.80813	-87.98799	0.1	U.T. to Root River Canal	6 Mile Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000202	Root River Canal	RAY05	02	062	1.0	9	42.80696	-88.01846	0.1	U.T. to Raymond Creek	76th Street	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000202	Root River Canal	RRC04	02	041	1.0	9	42.85511	-88.00362	0.1	U.T. to Root River Canal	Dst. S. 76th Street	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000202	Root River Canal	EBRRC05	02	050	1.0	9	42.65682	-87.98757		East Br. Root River Canal	7th Street	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000202	Root River Canal	RAY03	02	061	1.0	9	42.80121	-88.03670		Raymond Creek	W. 5 Mile Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000202	Root River Canal	RAY04	02	062	1.0	9	42.79692	-88.01260		U.T. to Raymond Creek	76th Street	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000202	Root River Canal	RRC06	02	042	1.0	9	42.83318	-88.03682		U.T. to Root River Canal	Dst. W. 7 Mile Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000202	Root River Canal	WBRRC08	02	060	1.0	9	42.69693	-88.05412		West Br. Root River Canal	S. Colony Ave.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000202	Root River Canal	WBRRC12	02	064	1.0	9	42.78386	-88.04264		U.T. to W. Br. Root River Canal	4 Mile Road	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000202	Root River Canal	WBRRC14	02	065	1.0	9	42.74788	-88.05078		U.T. to U.T. to W. Br. Root R. Canal	108th Street	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000202	Root River Canal	WBRRC17	02	068	1.0	9	42.71899	-88.05227		U.T. to W. Br. Root River Canal	S. Colony Ave.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000202	Root River Canal	WBRRC18	02	068	1.0	9	42.70722	-88.02593		U.T. to W. Br. Root River Canal	Dst. 67th Drive	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000202	Root River Canal	YC02	02	067	1.0	9	42.74012	-88.06075		Yorkville Creek	N. Colony Ave.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000202	Root River Canal	WBRRC15	02	066	0.90	9	42.74935	-88.03514		U.T. to U.T. to U.T. to W. Br. Root R. Canal	Walden Drive	X	X	QHEI	3X		2X	2X			Bact 2X		



Appendix Figure C-7. *Map of intensive pollution survey and geometric sites in the Root River and Root River Canal HUC10 watershed.*

***Appendix Table C-8**. Indicators, parameters, and frequencies at intensive pollution survey sites in the Oak Creek HUC10 organized by drainage area (largest to smallest in mi^2).*

HUC 10	HUC 10 Name	MBI Site ID	Basin Code	Stream Code	Drainage Area	Geometric Panel	Latitude	Longitude	River Mile	River_Stream Name	Location	Fish	Macroinver-tebrates	Habitat	Field Chem	Data-Sonde	Demand	Nutrients	Metals	Organics	Supple-mental	Sediment Metals	Sediment Organics
0404000201	Oak Creek	OAK01	02	100	27	4	42.90847	-87.84666	0.2	Oak Creek	Oak Creek Parkway	X	X	QHEI	10X	X	8X	8X	4X	4X	Bact 8X	1X	1X
0404000201	Oak Creek	OAK08	02	100	23	5	42.92500	-87.87100		Oak Creek	15th Ave	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000201	Oak Creek	OAK02	02	100	20	5	42.90525	-87.88165		Oak Creek	Nichols Ave.	X	X	QHEI	8X		6X	6X	3X	3X	Bact 6X	1X	1X
0404000201	Oak Creek	OAK03	02	100	18.0	5	42.88640	-87.88572		Oak Creek	E. Puetz Road	X	X	QHEI	8X	X	6X	6X	3X	3X	Bact 6X	1X	1X
0404000201	Oak Creek	OAK04	02	100	12.0	6	42.87497	-87.91966		Oak Creek	Ust. S. Howell Ave.	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000201	Oak Creek	NBOAK01	02	120	6.5	6	42.88739	-87.92440		N. Br. Oak Creek	W. Puetz Rd..	X	X	QHEI	5X		4X	4X	2X	2X	Bact 4X		
0404000201	Oak Creek	MFDD01	02	110	3.3	7	42.91570	-87.89262		Mitchell Field Driveainage Ditch	E. Rawson Ave.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000201	Oak Creek	OAK05	02	100	3.3	7	42.87057	-87.93251		Oak Creek	S. 13th Street (near Park)	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000201	Oak Creek	NBOAK02	02	120	2.0	8	42.91790	-87.92023		N. Br. Oak Creek	S. 6th Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000201	Oak Creek	MFDD02	02	110	1.6	8	42.93025	-87.89036		Mitchell Field Driveainage Ditch	E C.ollege Ave.	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000201	Oak Creek	NBOAK06	02	123	1.6	8	42.90710	-87.91970		U.T. to N. Br. Oak Creek	S. 6th Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000201	Oak Creek	OAK06	02	100	1.6	8	42.87039	-87.95645		Oak Creek	S. 31st Street	X	X	QHEI	4X		3X	3X	1X	1X	Bact 3X		
0404000201	Oak Creek	MFDD03	02	110	1.2	9	42.93800	-87.90901		Mitchell Field Driveainage Ditch	S. Howell Ave.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000201	Oak Creek	OAK07	02	100	1.2	9	42.87256	-87.96500		Oak Creek	W. Ryan Rd..	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000201	Oak Creek	NBOAK04	02	121	1.0	9	42.88626	-87.92517	0.1	U.T. to N. Br. Oak Creek	Dst. Puetz Rd.	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000201	Oak Creek	NBOAK05	02	122	1.0	9	42.89801	-87.93124	0.1	U.T. to N. Br. Oak Creek	S. 13th Street	X	X	QHEI	3X		2X	2X			Bact 2X		
0404000201	Oak Creek	NBOAK03	02	120	1.0	9	42.93435	-87.93175		N. Br. Oak Creek	W. Bowden Street	X	X	QHEI	3X		2X	2X			Bact 2X		



Appendix Figure C-8. *Map of intensive pollution survey and geometric sites in the Oak Creek HUC10 watershed.*