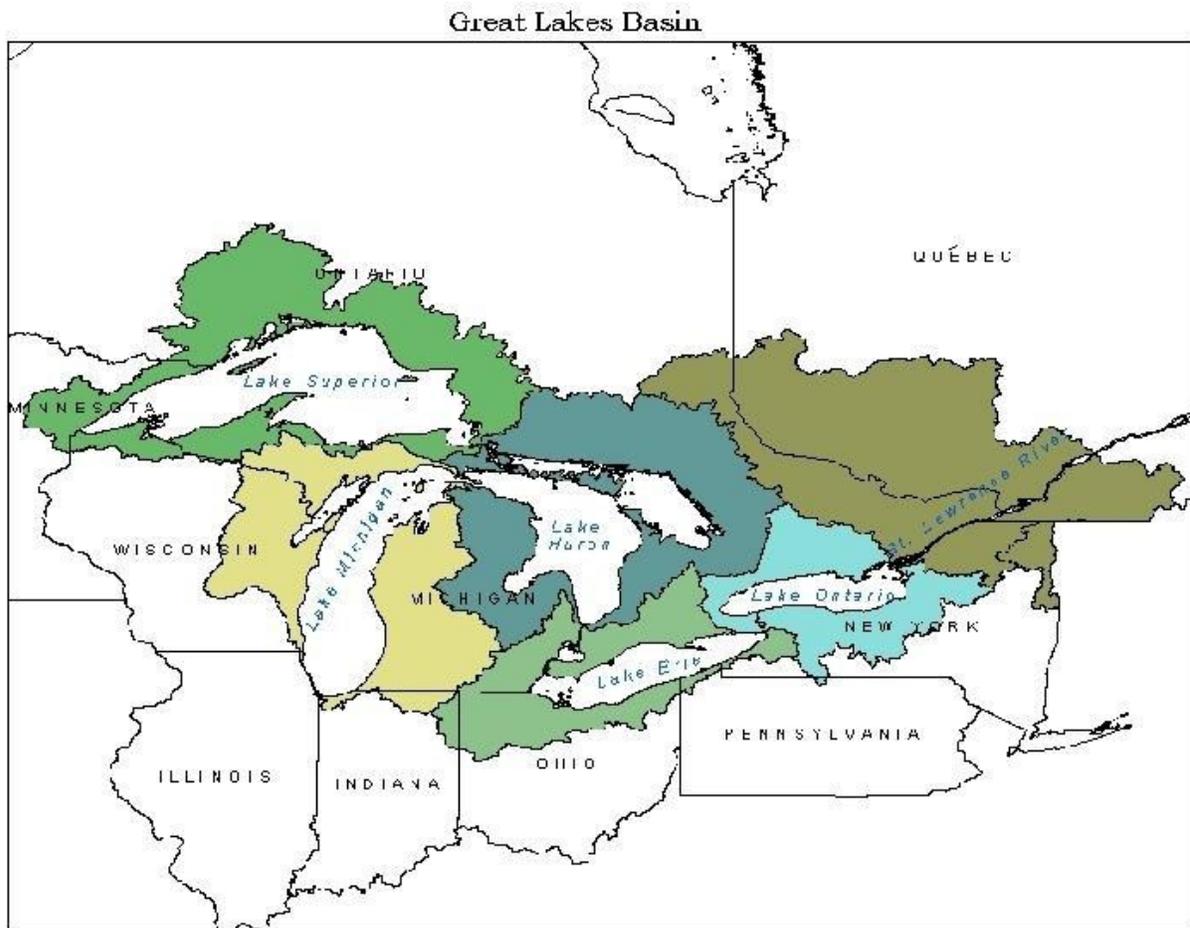


# The Great Lakes-St. Lawrence River Basin Water Resources Compact



## Ohio Great Lakes Compact Advisory Board

**Final Recommendations to the Governor and  
General Assembly**

**December 15, 2010**

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## **EXECUTIVE SUMMARY**

In accordance with Section 3 of Amended House Bill 416 of the 127<sup>th</sup> General Assembly, a Great Lakes – St. Lawrence River Basin Compact (Compact) Advisory Board was convened for the purpose of developing recommendations for legislation that is necessary to implement and effectuate the Compact in Ohio. Mr. Sean Logan, Director of the Ohio Department of Natural Resources, chaired the 28-member board, and staff from the Division of Soil and Water Resources and others supported the board (see Appendix A for the List of Advisory Board Members). The Compact Advisory Board began its work in March 2009. The work was divided into three focus areas: developing a baseline of existing water withdrawals, diversions, and consumptive uses; developing water conservation and efficiency goals and objectives and developing a water conservation and efficiency program; and developing recommendations for implementing a water withdrawal regulation management program.

Through a deliberate, iterative process, existing water withdrawal facilities were consulted to update and ensure that their withdrawal, consumptive use, and diversion capacities/quantities were appropriate. Requests were made of other unregistered facilities to register their facility and capacities as part of Ohio's Water Withdrawal Facility Registration Program. These values were used to develop the baseline lists and submitted on December 8, 2009 to the Compact Council and Regional Body in accordance Section 4.12 of the Compact.

Water Conservation and Efficiency Goals and Objectives were developed through an iterative process. The goals were already provided in the Compact under Section 4.2.1. The objectives developed and recommended are consistent with the regional goals and objectives. In addition, the goals and objectives contain no mandatory elements as mandated by Ohio Revised Code Section 1522.05, which prohibits any agency of state government from implementing any mandatory program governing water conservation and efficiency pursuant to Section 4.2 of the Compact unless authorized to do so by the General Assembly. A program for voluntary water conservation and efficiency was also developed and recommended through the assistance of a subcommittee of the full Compact Advisory Board.

Developing recommendations for a water withdrawal management program proved to be the most challenging topic for the Compact Advisory Board. Many issues and viewpoints were shared and discussed amongst the members, and a small workgroup was convened to assist in the process. Although unified agreement could not be reached on all topic areas, the Compact Advisory Board Members became more knowledgeable of the differing viewpoints. In conclusion, many issues were discussed and recommendations were achieved. Prior to introducing legislation, additional work should be done by the ODNR and the legislature to further engage stakeholders to develop threshold levels and define significant adverse impacts.

# **BASELINE OF WATER WITHDRAWALS, DIVERSIONS, AND CONSUMPTIVE USES**

## **Background**

Ohio Revised Code (ORC) 1522.01, Section 4.12 of the Compact requires that by December 8, 2009 the State of Ohio will develop and furnish to the Compact Council & Regional Body a baseline list of existing water withdrawers, indicating the existing capacity of each. Quantities of consumptive use and diversion associated with each withdrawal are also to be provided.

Consistent with the water withdrawal registration and reporting requirement contained in Section 4.1 of the Compact, the Parties have agreed to include withdrawals greater than 100,000 gallons per day (i.e., withdrawers with existing capacity greater than 100,000 gallons per day) unless there are withdrawal approvals set at lower quantities.

The quantities of withdrawals, consumptive uses, and diversions set forth in the list(s) will constitute the baseline quantities (i.e., the quantities that will be considered “existing” on the effective date of the Compact (December 8, 2008) and therefore not subject to regulation as a “new or increased” withdrawal, consumptive use, or diversion).

From ORC Section 1522.07, for purposes of establishing the baseline quantities, the amount of each existing diversion, consumptive use, or withdrawal shall be the larger of either the applicable limitation specified in a permit (not including permits issued for public drinking water systems or for wastewater discharges) or the physical capacity of the withdrawal system of the applicable facility.

## **Baseline Development**

### **Purpose**

The purpose of the Baseline is to establish a list of existing water withdrawals, consumptive uses, and diversions, which will be used for determining what will constitute a new or increased withdrawal, consumptive use or diversion. Ohio was required to establish three types or sets of baseline volumes: a baseline for direct withdrawals from ground water and surface water bodies, a baseline for consumptive uses, and a baseline for water diversions out of the basin. Every withdrawal facility within the basin that has the capacity to withdraw at least 100,000 gallons per day must have the first two types of baselines. Only a few facilities in Ohio divert water out of the basin and therefore would require a diversion baseline.

### **Withdrawals**

Two methods for determining the withdrawal baseline are prescribed by the Compact: Section 4.12.2.i states that the baseline can be “A list of existing Withdrawal approvals as of the effective date of the Compact.” alternatively; the baseline can be “A list of the capacity of existing systems as of the effective date of this Compact. The capacity of the existing systems should be presented in terms of withdrawal capacity, treatment capacity, distribution capacity, or other capacity limiting factors. The capacity of the existing systems must represent the state of the systems.

Existing capacity determinations shall be based upon approval limits or the most restrictive capacity information” (Section 4.12.2.ii). Ohio’s enabling legislation further defines how the baseline is to be determined. ORC Section 1522.07 (A)(1) states that the baseline “... shall be the larger of the following:

- (a) The applicable limitation specified in a permit issued under section 1501.32, 1501.33, or 1501.34 of the Revised Code or another permit issued by an agency of the state that specifically regulates and limits the amount of a water diversion, consumptive use, or withdrawal;
- (b) The physical capacity of the withdrawal system of the applicable facility ...”

ORC 1522.07 (A)(2) gives additional guidance by defining what cannot be used to calculate baseline volumes:

- “(a) A wastewater discharge permit issued under Chapter 6111 of the Revised Code ... shall not be considered a permit that regulates or limits the amount of an existing diversion, consumptive use, or withdrawal.
- (c) Approval of a public water supply system under Chapter 6109 of the Revised Code shall not be considered a permit that regulates or limits the amount of an existing diversion, consumptive use, or withdrawal unless the approval contains a specific and legally enforceable limitation on the amount of the diversion, consumptive use, or withdrawal.”

## **Procedure**

The Water Withdrawal Registration Program (WWFRP) database served as the starting point for determining baseline withdrawal values. ORC 1521.16 requires any facility that has the capacity to withdraw more than 100,000 gallons of water per day to register their withdrawal with the Division of Soil and Water Resources (DSWR) and report their actual withdrawal on an annual basis. Data collected under ORC 1521.16 is stored in the WWFRP database housed within the DSWR. Facilities registered under ORC 1521.16 are required to provide withdrawal capacity on their registration form. The DSWR used these forms and requested of each facility an update or confirmation of their withdrawal capacities.

Gathering updated withdrawal capacity data began in December of 2008. At that time, the Division of Soil and Water Resources mailed a form requesting information on withdrawal capacity to all active water withdrawal facilities registered under ORC 1521.16 and located within the Lake Erie basin. The form explained the need to update withdrawal capacities, described how withdrawal capacity should be calculated, and gave instructions for completing the form. A table identifying wells and intakes, and their capacities as stated on the original WWFRP registration documentation comprised the back of the two-page form. Ample space for adding wells or intakes and changing withdrawal capacities was provided. A postage paid return envelope was provided with each form.

Preliminary withdrawal capacity data were provided to the Advisory Board in March 2009. Board members raised the concern that facilities would not have the ability to appeal or modify their assigned withdrawal capacity. DSWR staff agreed to give each facility at least one opportunity to gather additional information on their wells and intakes and adjust their capacity before the baseline was sent to the Compact Council. To meet this requirement, each facility was mailed a new form in August 2009 with updated well and intake capacities (as provided by the facility) printed in the table. The letter that accompanied the updated form explained that the operator of a

facility was being given the opportunity to review withdrawal capacities for errors or make changes based on additional information. The withdrawal capacities that the Advisory Board approved and that were sent to the Compact Council on December 8, 2009 are contained in Appendix C. These baseline values were sent as provisional data, allowing for future modification if a facility was overlooked, or if a facility had miscalculated its capacity and could provide reasonable proof of a different capacity as of December 8, 2008.

### Public Water Supply Systems

To comply with the “most restrictive capacity” requirement of the Compact and the requirements of ORC 1522.07 the baseline for public water supply systems was determined using a different method than for other types of withdrawals. The maximum daily volume a public water supply system could treat was determined to be the appropriate baseline for this type of facility. Values for maximum treatment system throughput were obtained from the Ohio EPA. It should be noted that maximum throughput might be larger than the licensed capacity in some cases. Each public water system registered with the WWFRP received a letter describing the requirements of the Compact and the method used to determine the facility’s baseline. The operator was given the opportunity to discuss their baseline and provide information that might be used to modify the value. Baseline values for public water systems that were approved by the Advisory Board and provided to the Compact Council are found in Appendix C. These values are also considered provisional and subject to modification if additional information is provided at a later date.

### Upground, Off-Stream Storage Reservoirs

Upground reservoirs, also called off-stream storage reservoirs, present a unique challenge for determining a baseline capacity. This type of reservoir is situated next to a stream or river and water is pumped from the stream or river into the reservoir for use at a later time. The operators of upground reservoirs typically pump large volumes of water into the reservoir during periods of high stream flow, usually in winter and early spring, and may pump little or no water during the rest of the year. The quantity of water pumped in any given year depends on a number of factors including: stream flow, reservoir volume, pump size, number and type of pumps, reservoir surface evaporation and direct precipitation, and water system demand. For example, in a drought year (low stream flow) very little water may be pumped into the reservoir, but demand from the water system may remain high due to lawn watering, pool filling, etc. During a wet year, water system demand may be relatively low, but pumping into the reservoir may be high because of the need to replenish storage. To account for the wide variations in yearly pumping into upground reservoirs, staff of the DSWR calculated the maximum volume of water that could be pumped into an upground reservoir. This quantity is equal to the amount of water needed to fill a dry reservoir plus the quantity used by the water system (including losses during the treatment process) and the volume lost to evaporation and seepage. Each upground reservoir registered with the WWFRP received a letter describing the requirements of the Compact and the value calculated for their baseline. Upground reservoir owners were asked to contact DSWR staff if they had any questions about their baseline volume. Baseline values for upground, off-stream storage reservoirs that were approved by the Advisory Board and provided to the Compact Council are found in Appendix C.

## **Diversions**

### **Large Diversions requiring a permit prior to the Compact**

Since 1988 Ohio law (ORC 1501.32) has required any person who diverts over 100,000 gallons of water per day from the Lake Erie basin to the Ohio River Basin, without returning the water, to obtain a permit for that diversion. The Compact requires the inclusion of all permitted diversions as part of a state's baseline. Facilities on the baseline list may not expand their systems in the Lake Erie Basin without first obtaining a new permit under the Compact.

### **Diversions not requiring a permit prior to the Compact**

Ohio has a number of municipal and regional water systems that serve areas near the Ohio River/Lake Erie basin divide. Many of these systems supply customers on both sides of the divide. Prior to the passage of the Compact, most of these systems did not require a permit because their diversions were less than 100,000 gallons per day, or because they returned the non-consumed portion of the water back to the Lake Erie Basin. The Compact, however, requires Ohio to account for these diversions and include them in the baseline. Staff of the DSWR mailed each water system that served customers in the Ohio River Basin, but had a water source in the Lake Erie Basin, a letter stating their calculated diversion quantity for purposes of establishing the baseline and allowing each system to provide evidence for revising this number. The value was determined as the percentage of distribution area outside the Lake Erie Basin times the facility's total capacity. Appendix C contains a list of water systems that comprise Ohio's baseline for diversions and the quantity of water approved for the baseline as approved by the Advisory Board.

## **Consumptive Uses**

Consumptive use as defined by the Compact is "... that portion of the Water Withdrawn or withheld from the Basin that is lost or otherwise not returned to the Basin due to evaporation, incorporation into Products or other processes."

Most industries, municipal water systems, quarries, agricultural facilities, etc. do not collect consumptive use data. For this reason, all of the Great Lakes States utilized coefficients to determine a facility's consumptive use. Coefficients are a generalized factor or percentage applied to the water withdrawal baseline value to arrive at a consumptive use value. Each type of water use, industrial, agricultural, power generation etc. has a set of relative coefficients. Furthermore, consumptive use coefficients are usually available for specific uses within a generalized water use category, (e.g. steel mills, drip irrigation, dairy farms, etc.). The consumptive use values for individual water withdrawal facilities submitted to the Compact Council are also found in Appendix C.

## **Recommendations**

The baseline lists should be accepted as developed with the provision that these capacities can be corrected if the withdrawer provides appropriate justification (e.g. proof of capacities or improved consumptive use coefficients).

The capacity of existing facilities withdrawing water and having a capacity less than 100,000 gallons per day should be acknowledged if/when that facility increases its capacity. While determining if an increased withdrawal triggers the threshold capacity, an existing facility should have the opportunity to establish its baseline (capacities as of December 8, 2008) regardless if they were on the baseline lists submitted on December 8, 2009.

It is recommended that the baseline lists submitted to the Great Lakes Compact Council on December 8, 2009 should be acknowledged within the Ohio Revised Code for purposes of implementing a water withdrawal regulation program in Ohio. Those facilities and the baseline amounts would be exempt from the regulatory program until a new or increased withdrawal or consumptive use triggers a requirement for a permit.

# **WATER CONSERVATION & EFFICIENCY**

## **Background**

Section 4.2.2 of the Compact requires that, before December 8, 2010, the State of Ohio will develop water conservation & efficiency goals and objectives and begin implementing a water conservation & efficiency program for all Ohio Lake Erie Basin water users. The Compact does not require mandatory conservation measures as part of this program, and Ohio Revised Code (ORC) §1522.05 prohibits any agency of state government from implementing a mandatory program unless it is authorized by statute. Under Section 4.2.4 of the Compact, the State of Ohio is committed to promote environmentally sound and economically feasible water conservation measures as part of its conservation & efficiency program.

The Ohio Great Lakes Compact Advisory Board was convened to develop recommendations for implementing the Compact, including the establishment of conservation & efficiency objectives and the development of the water conservation & efficiency program.

## **Development of Water Conservation & Efficiency Goals & Objectives**

Ohio's Lake Erie Basin Water Conservation & Efficiency Goals are provided by Section 4.2.1 of the Compact:

1. Ensure the improvement of the Basin's waters and water dependent natural resources;
2. Protect and restore the hydrologic and ecosystem integrity of the Basin;
3. Retain the quantity of surface water and ground water in the Basin;
4. Ensure the sustainable use of the waters of the Basin;
5. Promote the efficiency of use and reduce loss and waste of water in the Basin.

The identification of basin-wide water conservation & efficiency objectives (pursuant to Section 4.2.1 of the Compact) has been completed by the Compact Council--these basin-wide objectives are contained in Appendix D. Since Ohio's Lake Erie Basin water conservation & efficiency objectives must be consistent with the basin-wide objectives (pursuant to Section 4.2.2 of the Compact), the Advisory Board used them as a starting point in its consideration. The basin-wide objectives were distributed to the members of the Advisory Board for review and commentary, and draft objectives were formulated. After considerable discussion and several rounds of revisions, the following water conservation & efficiency objectives for Ohio's Lake Erie Basin were developed and are recommended by the Advisory Board.

## **Recommendations**

Consistent with ORC §1522.05, Ohio's Lake Erie Basin Water Conservation & Efficiency Objectives do not entail the implementation of any mandatory program governing water conservation and efficiency, and do not include mandatory water conservation requirements for any water users. In order to comply with the December 8, 2010 deadline, the following goals and objectives have been developed and provided to the Great Lakes Compact Council and Regional Body.

**1. Promote the efficient use and conservation of water.**

- a) Develop and implement mechanisms to communicate the importance of water use efficiency and conservation practices.
- b) Identify and promote supply, demand, and mitigation best management practices for the various categories of water use.
- c) Identify incentive programs to encourage water conservation and pursue their implementation.
- d) Promote innovative technology for water reuse.
- e) Promote the conservation of existing water supplies to delay or prevent the need for developing additional supply sources.
- f) Promote investment in and maintenance of efficient water infrastructure, including green infrastructure.
- g) Coordinate state agency and local government water use efficiency and conservation programs.

**2. Guide programs toward long-term sustainable water use.**

- a) Develop and maintain water management plans for sustaining the quantity and quality of the waters of the Basin, including the inventorying and assessment of ground and surface water resources, the analysis of water use trends and formulation of long-term water use forecasts, and the development of strategies to incorporate voluntary water conservation practices.
- b) Use adaptive programs that are goal-based, accountable, and measurable and that build upon existing efforts by considering practices and experiences from other jurisdictions.
- c) Develop and implement voluntary water management and conservation programs openly and collaboratively, including local stakeholders, governments, and the public.
- d) Develop programs to encourage voluntary Lake Erie Basin water conservation and efficiency practices.
- e) Develop and implement a process for maintaining and improving the understanding, communicating, planning, and promoting of the waters of the Basin.

**3. Develop water conservation education programs and information sharing.**

- a) Educate school children, businesses, citizens, and government officials on the economic, societal, ecological and qualitative values of water.
- b) Encourage and increase training opportunities in collaboration with professional or other organizations in order to increase water conservation and efficiency practices and technological applications.
- c) Promote the cost-saving aspect of water conservation and efficiency for economic and natural resource sustainability.
- d) Disseminate information regarding identified best management practices for different categories of water use, including evaluation and results achieved.
- e) Compile published information on specific water conservation efforts in Ohio and elsewhere and make it available to the public so that all are aware of how water can be used and conserved.
- f) Ensure equitable public access to water conservation and efficiency tools and information.
- g) Ensure that voluntary conservation programs are transparent and that information is readily available.

- h) Enhance and contribute to regional information sharing; share conservation and efficiency experiences, including successes and lessons learned across the Basin.

#### **4. Develop science, technology, and research.**

- a) Support the development of water-related industries and technologies to position Ohio as a global industry leader.
- b) Identify research and monitoring needs related to the interaction of ground water and surface water, and strategies for managing and protecting water resources.
- c) Use scientific data and analyses to improve conservation and efficiency.
- d) Support the development of systems and tools for an integrated approach to ground water and surface water management that would predict the effects of water withdrawal and conservation practices within the Basin and strengthen scientific understanding of the linkages between water conservation practices and ecological responses.
- e) Leverage the resources of Ohio's research institutions to focus on problems affecting the human and natural communities of the Great Lakes, including analyzing barriers to sustainable water use.
- f) Foster cooperation and sharing of resources and information among all federal, tribal, state, and local agencies, educational institutions, private sector, and non-governmental organizations, as well as with international partners.
- g) Support research, development, and implementation of state-of-the-art water conservation technologies, including the identification and sharing of innovative management practices.

#### **5. Improve monitoring and standardize data reporting among state and provincial water conservation and efficiency programs.**

- a) Collect, analyze, and report water use information for registered withdrawals in the various categories of water use.
- b) Make information readily available to the public, including information about the waters of the Lake Erie Basin and water use, on a state website.
- c) Monitor the implementation of best management practices for water conservation and share this information with the public, while protecting proprietary information.
- d) Improve the measurement and evaluation of water conservation practices; identify and encourage measures to monitor, account for, and minimize water loss.
- e) Track and publicly report program progress and effectiveness.

### **Development of a Voluntary Water Conservation & Efficiency Program**

The State of Ohio is authorized to implement the water conservation & efficiency program required in Section 4.2.2 of the Compact generally by ORC §1522.03, which requires the ODNR director and other state agencies & government officers to enforce the Compact and take appropriate actions to effectuate its purposes and intent, and specifically by ORC §1522.05(B)(1), which authorizes the implementation of voluntary water conservation & efficiency programs, which do not include any mandatory requirements on water users.

Because of the implementation schedule (i.e., beginning December 8, 2010), it is recognized that the program must initially be implemented with existing resources. The ODNR and other state agencies should seek funding to implement recommendations that are not feasible with existing resources. The ODNR should regularly report on the program's status, including successes and lessons learned, to the Great Lakes Compact Council, and all stakeholders in Ohio.

## **Recommendations**

Ohio's Lake Erie Basin Water Conservation & Efficiency Program should:

- Recognize the ubiquitous nature of water and the myriad of purposes for which it is needed, including those that require water to remain in-place as well those requiring withdrawal;
- Encourage & support economic development and assist in assuring adequate water supplies for existing and new commercial activities in Ohio;
- Demonstrate how water conservation is economically & strategically beneficial, and educate water users of the financial and long-term benefits of effective water conservation programs;
- Demonstrate how water conservation improves the natural environment;
- Draw upon the wealth of existing water management expertise available (e.g., AWWA, ORWA, OTCO, WMAO, ODNR, OEPA, USGS, NGOs, University/College networks)
- Use objective measures to assess results, understand the ways water is used, and provide data to support future modifications of the program;
- Emphasize continuous improvement rather than setting specific water use reduction goals;
- Identify and promote water conservation practices that are currently available, technically and economically feasible, and environmentally sound;
- Consider particular facilities involved and recognize that the diversity of water users precludes a “one size fits all” approach;
- Focus on the largest water users and engage them in a collaborative effort.

### **Information & Education**

- Develop a website and printed material conveniently accessible to the public containing information on Lake Erie Basin water conservation and efficiency, including identified best practices by water use sector, information about water metering, conducting water audits and identifying water losses, the effectiveness of existing conservation programs, descriptions of past successes and lessons learned;
- Make information regarding existing water withdrawals more accessible, including the Water Withdrawal Facility Registration Program Database and the Water Withdrawal Atlas, respecting proprietary information;
- Conduct conferences for water infrastructure owners & managers; conduct forums and seminars focused on voluntary conservation programs;
- Create an Ohio Water Conservation Congress sponsored by ODNR (in cooperation with OEPA, AWWA, etc.). Hold an annual event, featuring leading experts in water conservation in each water use sector, presentations and demonstrations focused on the latest technologies and innovative practices to reduce water use, exhibitors, etc.

### **Research & Planning**

- Identify how recognized modeling programs can be used in conservation planning;
- Identify areas, using modeling and forecasting, where future water shortages are likely and conservation efforts may have the most impact;
- Formulate and make publicly available a list of recognized best practices for conservation by water use sector.

### **Promotion of Conservation Practices**

- Encourage universal water metering programs, including audits to locate leaks for repair;
- Recognize outstanding efforts to conserve water by public water systems, other water users, local governments, and state agencies based on strict criteria;
- Create a logo using criteria applicable to each water use sector to use as a symbol for promoting water conservation efforts (sponsor a contest for Ohio school children to develop the logos);
- Sponsor demonstrations by the world's leading innovators in water delivery and the use of water, and examples and "how to" presentations from leading conservation experts.

### **Incentives for Conservation**

- Promote existing incentive programs (e.g., OEPA's WPCF);
- Investigate potential incentives for water conservation;
- Provide additional incentive programs to users who voluntarily implement strict conservation & efficiency practices, enabling water users to achieve a competitive return on investment for system upgrades and conservation programs.

# **WATER WITHDRAWAL REGULATION**

## **Background**

ORC 1522.01, Section 4.10 of the Compact requires that, before December 8, 2013, the State of Ohio will create a program for the management and regulation of new or increased withdrawals and consumptive uses by adopting and implementing measures consistent with the Compact's decision-making standard. This includes setting regulatory threshold levels to ensure that withdrawals and uses overall are reasonable and will not result in significant adverse impacts to the physical, chemical, and biological integrity of the Lake Erie Basin. The State of Ohio may determine the scope of its program, including which new or increased withdrawals and consumptive uses will be subject to regulation.

Section 4.11 of the Compact, which establishes the decision-making standard, requires that water withdrawn from Ohio's Lake Erie Basin subject to Section 4.10 (i.e., not including existing or exempted withdrawals) be returned, less an allowance for consumptive use, to the Lake Erie Basin. It also requires that all withdrawals be implemented so as to be reasonable, result in no significant adverse impacts to the quantity or quality of the waters and water-dependent natural resources of the Lake Erie Basin, incorporate environmentally sound and economically feasible water conservation measures, and comply with all applicable laws, interstate, and international agreements.

The Ohio Great Lakes Compact Advisory Board was convened to develop recommendations for implementing the Compact, including legislation for regulating new and increased water withdrawals.

## **Legislation for Regulating New and Increased Withdrawals and Consumptive Uses**

### **Purpose**

Under Section 4.10 of the Compact, Ohio is required to develop a program for the management and regulation of New or Increased Withdrawals and Consumptive Uses by adopting and implementing measures that are at a minimum consistent with Section 4.11 of the Compact, which is the Decision-Making Standard. The criteria of the Decision-Making Standard include the following:

1. All Water Withdrawn shall be returned, either naturally or after use, to the Source Watershed less an allowance for Consumptive Use;
2. The Withdrawal or Consumptive Use will be implemented so as to ensure that the Proposal will result in no significant individual or cumulative adverse impacts to the quantity or quality of the Waters and Water Dependent Natural Resources and the applicable Source Watershed;
3. The Withdrawal or Consumptive Use will be implemented so as to incorporate Environmentally Sound and Economically Feasible Water Conservation Measures;

4. The Withdrawal or Consumptive Use will be implemented so as to ensure that it is in compliance with all applicable municipal, State and federal laws as well as regional interstate and international agreements, including the Boundary Waters Treaty of 1909;
5. The proposed use is reasonable, based upon a consideration of the following factors:
  - a. Whether the proposed Withdrawal or Consumptive Use is planned in a fashion that provides for efficient use of the Water, and will avoid or minimize the waste of Water;
  - b. If the Proposal is for an increased Withdrawal or Consumptive Use, whether efficient use is made of existing water supplies;
  - c. The balance between economic development, social development and environmental protection of the proposed Withdrawal and use and other existing or planned withdrawals and water uses sharing the Water source;
  - d. The supply potential of the Water source, considering quantity, quality and reliability and safe yield of hydrologically interconnected water sources;
  - e. The probable degree and duration of any adverse impacts caused or expected to be caused by the proposed Withdrawal and use under foreseeable conditions, to other lawful consumptive or non-consumptive uses of water or to the quantity or quality of the Waters and Water Dependent Natural Resources of the Basin, and the proposed plans and arrangements for avoidance or mitigation of such impacts; and,
  - f. If a Proposal includes restoration of hydrologic conditions and functions of the Source Watershed, the Party may consider that.

## **Recommendations**

While the Compact Advisory Board was not able to develop a unified recommendation for some of the substantive issues, many other aspects and issues were discussed with various degrees of consensus and disagreement.

1. The authority for regulating new and increased water withdrawals should be housed within the Ohio Department of Natural Resources, Division of Soil and Water Resources (ODNR-DSWR).
2. Regulations of new or increased withdrawals should be based on capacities of the withdrawal and consumptive use system(s).
3. There should be provision for voluntary, informal pre-application consultation with the ODNR-DSWR.
4. Water withdrawal regulation should apply to three sources within the Lake Erie Basin: Lake Erie (including river reaches under the influence of Lake Erie), inland surface water, and ground water. River reaches under the influence of Lake Erie are presumed to be the

portion of a direct tributary to Lake Erie in which there exists a federally recognized navigation channel.

5. Withdrawal permit decisions by the Chief of ODNR-DSWR should be subject to an administrative appeal commission comprised of members with appropriate environmental and economic development backgrounds based out of an existing commission. Appeals from this commission would be taken to the court of appeals for the county where the water withdrawal would take place.
6. Water withdrawal permits should be issued for the life of the withdrawal facility, subject to periodic recertification to ensure compliance with permit conditions and provide for updates of conservation best management practices.
7. Water withdrawal permits should be transferable to new facility owners so long as the quantity and manner of the withdrawal remains the same. Similarly, existing water withdrawers should be enabled to transfer their baseline capacity (as described above) to new facility owners for operation at the baseline location.
8. Water withdrawal permits should expire upon facility inactivity/abandonment, though inactivity/abandonment will need a clear definition.
9. The registration of water withdrawal facilities and the reporting of annual water withdrawal quantities that is required by the Compact should be continued under the existing authority of the ODNR-DSWR pursuant to ORC 1521.16.
10. A permit issued by ODNR-DSWR should not be construed as conferring or defining a property right in the reasonable use of the amount of water designated in the permit. A landowner's property right to a reasonable use of water is provided by the Ohio Constitution, Ohio Revised Code (1521.17), and under Ohio Common Law.
11. Isolated ponds would not be subject to the regulatory program, though isolated ponds will need a clear definition.

The Advisory Board members have reserved judgment on the individual items outlined above until a complete regulatory package, including significant adverse impact definitions and threshold levels, is established.

### **Remaining Substantive Issues in Need of Refinement Prior to Legislation**

1. Definition of "Significant Adverse Impact"  
In reference to Section 4.11 of the Compact, Significant Adverse Impact needs definition for Ohio's regulatory program, and should be tailored to the source for withdrawal (i.e. Lake Erie, inland surface waters, and groundwater). Without such definitions, all stakeholders and the regulatory agency will have uncertainty about proposals and the potential level of impacts.

There was general discussion that a higher degree of consideration must be given to proposals within designated High Quality Streams.

There was general discussion that a science-based approach should be utilized to formulate these criteria, strategies and procedures. The Ohio Stream Withdrawal Evaluation Tool under development by The Nature Conservancy of Ohio and others provides a potential model that could be utilized for stream withdrawals, especially for evaluating proposals within High Quality Streams.

Until an improved science-based measure is developed, one manner in which to define a significant adverse impact of withdrawals from Lake Erie (including river reaches under the influence of Lake Erie as described under item 4. of the previous section) could be lowering the lake more than one inch (a baseline for measurement purposes would need to be established).

Similarly, until an improved science-based measure is developed, one manner in which to define a significant adverse impact of withdrawals from groundwater sources could be impacts to surface base flow and/or stream flow.

2. Utilize Existing Permit Programs

Water withdrawal permit requirements for surface mining operations subject to regulation under ORC Chapter 1514 could be included with permit requirements under ORC Chapter 1514 (coordinated with the ODNR-DSWR).

3. Threshold Levels for Requiring Permits

Threshold levels are the capacities of new or increased withdrawals (averaged over a 90-day period) that would trigger the water withdrawal permit application process. Water withdrawals that are less than the threshold levels would not be subject to a regulatory review. The following are some of the main discussion points:

- Threshold levels would be set for each of the three types of withdrawals: Lake Erie (including river reaches under the influence of Lake Erie as described above), inland surface water, and ground water.
- Thresholds should be lower for streams designated by Ohio EPA as high quality streams as compared to modified streams.
- Environmental flow models could be used to evaluate withdrawals from streams.

There was general discussion that authority be given to the Chief of ODNR-DSWR to designate distressed watersheds (through a determined set of criteria). In this capacity, the Chief would have the authority to lower water withdrawal facility registration capacities and/or threshold levels in these distressed watersheds, subject to administrative appeal.

Unified agreement on threshold levels was not achieved; however two groups (The Coalition for Sustainable Water Management and The Coalition for Sustainable Communities) within the Compact Advisory Board members provided competing suggested threshold levels. These threshold level suggestions are as follows:

## Interested Parties Suggested Threshold Levels

Note: gpd = gallons per day  
mgd = million gallons per day

High Quality Streams are defined as those stream segments designated as exceptional warm-water habitat (EWH), cold water habitat (CWH), outstanding state waters (OSW) (except those designated OSW for recreational purposes only), or superior high-quality waters (SHQW).

### Coalition for Sustainable Communities

#### Streams

Watersheds < 100 mi<sup>2</sup>

High Quality	10,000 gpd
All Others	100,000 gpd

Watersheds 100 to 300 mi<sup>2</sup>

High Quality	25,000 gpd
All Others	250,000 gpd

Watersheds > 300 mi<sup>2</sup>

High Quality	100,000 gpd
All Others	1 mgd

Stream withdrawal permitting thresholds were tiered on the basis of upstream watershed size, and were based on state use designations. According to the science, and common knowledge, streams with larger watershed sizes are able to supply more water for human use than streams with small watersheds. Streams with use designations such as Exceptional Warmwater Habitat (EWH, <10% of all stream miles in the Lake Erie basin) and Coldwater Habitat (CWH, <5% of stream miles in the Lake Erie basin) support the most flow-sensitive species and therefore are most vulnerable to flow withdrawals. Utilizing these principles and the ecological impact curves developed from U.S. Geological Survey surface flow gauges and the Ohio EPA ecological survey database earlier in the process, the above recommended capacity of withdrawal systems (gallons/day over a 90 day period) are the point at which applicants would enter an ODNR permitting process. These figures are based on a 2%, 10%, and 50% loss of sensitive fish species for Exceptional Warmwater and Coldwater Habitat, Warmwater Habitat, and, finally, Modified Warmwater and Limited Resource Water Habitat, respectively. Higher quality streams have the most flow-dependent fish species and that is the reasoning for lower percentages of loss of sensitive fish species allowed. Modified Warmwater Habitat or Limited Resource waters generally have adaptable species remaining due to already existing habitat degradation. Rather than being overly protective of already altered streams, the thresholds allow for a greater amount of water to be withdrawn (evidenced by a higher percentage of loss of sensitive species allowed).

#### Ground Water

500,000 gpd  
(Suggested by ODNR as a starting framework for consideration.)

#### Lake Erie

2.5 mgd

**Coalition for Sustainable Water Management**

Streams

High Quality 300,000 gpd  
All Others 1 mgd

Ground Water

1 mgd

Lake Erie and Points on Rivers Under the Influence of Lake Erie

5 mgd

River reaches under the influence of Lake Erie are presumed to be any portion of a river in which there exists a federally recognized navigation channel. An applicant should have the right to demonstrate that a reach upstream of the navigation channel is under the influence of Lake Erie. A stream does not lose its status as being under the influence of Lake Erie if a navigational channel is no longer federally recognized.

Through the Board’s discussion of the different threshold proposals, there appears to be the willingness and ability to come to agreement on lowered threshold levels for High Quality Streams with more elevated threshold levels for all other streams. However, additional discussion, particularly in light of how significant adverse impact is defined for surface water withdrawals, will be necessary.

**Prior to Introducing Legislation**

ODNR should continue to work with stakeholders and the legislature to develop Significant Adverse Impact measures which will help inform the establishment of appropriate threshold levels to ensure protection of the identified conservation targets.

It is noted that Advisory Board members have reserved judgment on the individual items outlined above until a complete regulatory package, including significant adverse impact definitions and threshold levels, is established so that the individual components can be viewed in holistic context.

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## Ohio's Great Lakes Compact Advisory Board Members

### SPECIFIED BY STATUTE

Ohio Department of Natural Resources director or designee

Sean Logan, Director, Ohio Department of Natural Resources  
2045 Morse Road, Building D-3, Columbus, OH 43229-6693  
Phone: 614-265-6879 E-mail: [sean.logan@dnr.state.oh.us](mailto:sean.logan@dnr.state.oh.us)

Designee

Mike Shelton, Chief, Office of External Affairs  
2045 Morse Road, Building D-3, Columbus, OH 43229-6693  
Phone: 614-265-6891 E-mail: [mike.shelton@dnr.state.oh.us](mailto:mike.shelton@dnr.state.oh.us)

Ohio Environmental Protection Agency director or designee

Shannon Nabors, Chief, Northwest District Office  
Ohio Environmental Protection Agency  
347 North Dunbridge Road, Bowling Green, OH 43402  
Phone: 419-373-3142 E-mail: [shannon.nabors@epa.state.oh.us](mailto:shannon.nabors@epa.state.oh.us)

*Subsequently replaced by*

Gail Hesse, Program Management & Source Water Assessment Program  
Ohio Environmental Protection Agency, Division of Surface Water  
P.O. Box 1049, Columbus, OH 43216-1049  
Phone: 614-644-2146 E-mail: [gail.hesse@epa.state.oh.us](mailto:gail.hesse@epa.state.oh.us)

Ohio Department of Development director or designee

Edward Jerse, Director of Legislative Affairs  
Ohio Department of Development  
77 South High Street, PO Box 1001  
Columbus, OH 43216-1001  
Phone: 614-644-8630 E-mail: [ejerse@odod.state.oh.us](mailto:ejerse@odod.state.oh.us)

### APPOINTED BY THE GOVERNOR

Water Quality Expert from an Ohio College or University

Jeffrey M. Reutter, Director, Ohio Sea Grant, Ohio State University  
1314 Kinnear Road, Area 100, Columbus, OH 43212-1156  
Phone: 614-292-8949 E-mail: [reutter.1@osu.edu](mailto:reutter.1@osu.edu)

Representing a Statewide Environmental Advocacy Organization

Kristy Meyer, Director, Agricultural & Clean Water Programs, Ohio Environmental Council  
1207 Grandview Avenue, Columbus, OH 43212-7506  
Phone: 614-487-7506 E-mail: [kristy@theOEC.org](mailto:kristy@theOEC.org)

Representing a Local Environmental Advocacy Organization in the Lake Erie Basin

Kevin Joyce, Executive Director, Black Swamp Conservancy  
P.O. Box 332, Perrysburg, OH 43552-0332  
Phone: 419-872-5263 E-mail: [kjoyce@blackswamp.org](mailto:kjoyce@blackswamp.org)

Representing a Sustainable Economic Development Organization in the Lake Erie Basin

David Beach, Director, Green City Blue Lake Institute, Cleveland Museum of Natural History  
1 Wade Oval Drive, Cleveland, OH 44106  
Phone: 216-231-4600 E-mail: [dbeach@cmnh.org](mailto:dbeach@cmnh.org)

Representing the Travel & Tourism Industry

Melinda Huntley, Executive Director, Lake Erie Coastal Ohio  
P.O. Box 1639, Sandusky, OH 44870  
Phone: 419-609-0399 E-mail: [Huntley@coastalohio.com](mailto:Huntley@coastalohio.com)

Representing the Electric Utility Industry

Fred Starheim, Manager, Environmental Permitting & Compliance, First Energy Corp  
76 Main Street, Akron, OH 44308  
Phone: 330-384-5891 E-mail: [starheimf@firstenergycorp.com](mailto:starheimf@firstenergycorp.com)

Representing County Government in the Lake Erie Basin

James Troike, Medina County Sanitary Engineer  
791 West Smith Road, Medina, OH 44256  
Phone: 330-225-7100 E-mail: [jtroike@medinaco.org](mailto:jtroike@medinaco.org)

**APPOINTED BY THE SENATE PRESIDENT**

Representing the Ohio Senate

The Honorable Timothy J. Grendell, Ohio Senate, 18<sup>th</sup> District  
Senate Building-Room 042, Ground Floor, Columbus, OH 43215  
Phone: 614-644-7718 E-Mail: [SD18@senate.state.oh.us](mailto:SD18@senate.state.oh.us)

The Honorable Sue Morano, Ohio Senate, 13<sup>th</sup> District  
Senate Building-Room 056, Ground Floor, Columbus, OH 43215  
Phone: 614-644-7613 E-mail: [senatormorano@maild.sen.state.oh.us](mailto:senatormorano@maild.sen.state.oh.us)

Representing the Bottled Water Industry

Kimberly McConville, Executive Director, Ohio Soft Drink Association  
1170 Old Henderson Road, Suite 201, Columbus, OH 43220  
Phone: 614-442-1803 E-mail: [osdakimberly@rroho.com](mailto:osdakimberly@rroho.com)

Representing Statewide Land Conservation Advocacy Organization

Josh Knights, The Nature Conservancy-Ohio  
6375 Riverside Drive, Suite 100, Dublin, OH 43017  
Phone: 614-717-2770 E-mail: [ohio@tnc.org](mailto:ohio@tnc.org)

Representing Agricultural Interests within the Lake Erie Basin

Larry Antosch, Ohio Farm Bureau Federation  
280 Plaza, P O Box 182383, Columbus, OH 43218-2383  
Phone: 614-246-8264 E-mail: [lantosch@ofbf.org](mailto:lantosch@ofbf.org)

Representing the Aggregates Industry

Patrick Jacomet, Ohio Aggregates & Industrial Minerals Association  
162 North Hamilton Road, Gahanna, OH 43213  
Phone: 614-428-7954 E-mail: [patj@oaima.org](mailto:patj@oaima.org)

Representing the Pulp & Paper Industry

Joseph D. Bulzan, Smurfit-Stone Container Company  
500 North Front Street, Coshocton, OH 43812  
Phone: 740-622-6543 x238 E-mail: [jbulzan@smurfit.com](mailto:jbulzan@smurfit.com)

Representing a Large Manufacturer with a Facility in the Lake Erie Basin

Keith Nagel, ArcelorMittal USA Environmental  
4020 Kinross Lakes Parkway, Richfield, OH 44286  
Phone: 330-659-9100 E-mail: [keith.nagel@arcelormittal.com](mailto:keith.nagel@arcelormittal.com)

Representing the Public

Christopher Schraff, Porter, Wright, Morris, & Arthur  
Huntington Center, 41 South High Street, Columbus, OH 43215  
Phone: 614-227-2097 E-mail: [cschraff@porterwright.com](mailto:cschraff@porterwright.com)

**APPOINTED BY THE HOUSE SPEAKER**

Representing the Ohio House of Representatives

The Honorable Matthew J. Dolan, Ohio House of Representatives, 98<sup>th</sup> District  
77 South High Street, Columbus, OH 43215-6111  
Phone: 614-644-5088 E-mail: [district98@ohr.state.oh.us](mailto:district98@ohr.state.oh.us)

*Subsequently replaced by*

The Honorable Terry Boose, Ohio House of Representatives, 58<sup>th</sup> District  
77 South High Street, Columbus, OH 43215-6111  
Phone: 614-466-9628 E-mail: [district58@ohr.stat.eoh.us](mailto:district58@ohr.stat.eoh.us)

The Honorable Dennis Murray, Ohio House of Representatives, 80<sup>th</sup> District  
77 South High Street, Columbus, OH 43215-6111  
Phone: 614-644-6011 E-mail: [district80@ohr.state.oh.us](mailto:district80@ohr.state.oh.us)

Representing Municipal Government

The Honorable Deborah L. Sutherland, Mayor, City of Bay Village  
350 Dover Center Road, Bay Village, OH 44140  
Phone: 440-899-3415 E-mail: [dsutherland@cityofbayvillage.com](mailto:dsutherland@cityofbayvillage.com)

Hydrogeology Expert from an Ohio College or University

Robert Heath, Professor Emeritus  
Department of Biological Sciences, Kent State University  
Kent, OH 44242  
Phone: 330-672-3613 E-mail: [rheath@kent.edu](mailto:rheath@kent.edu)

Representing Local Organization in the Lake Erie Basin that Assists in the Development & Implementation of Water Resources Protection & Management Plan

Gary Smith, Director, Government Affairs, Greater Cleveland Partnership  
The Higbee Building, 100 Public Square, Suite 210, Cleveland, OH 44113-2291  
Phone: 216-592-2244 E-mail: [gsmith@gcpartnership.com](mailto:gsmith@gcpartnership.com)

Representing a Fish & Wildlife Advocacy Organization

Rick Graham, President, Isaac Walton League Ohio Division  
13217 Patten Track Road, Monroeville, OH 44847-9630  
Phone: 419-465-2283 E-mail: [rick.graham@ohiostatebuckeyes.com](mailto:rick.graham@ohiostatebuckeyes.com)

Representing Residential Developers

Greg Romes, President, Ohio Home Builders Association  
36368 Detroit Road, Avon, OH 44011  
Phone: 440-934-6265 E-mail: [greg@lakepointeconstruction.com](mailto:greg@lakepointeconstruction.com)

Representing the Chemical Industry

Jack R. Pounds, President, Ohio Chemistry Technology Council  
88 East Broad Street, Suite 1490, Columbus, OH  
Phone: 614-224-1730 x21 E-mail: [jpounds@ohiochemistry.com](mailto:jpounds@ohiochemistry.com)

Representing the Petroleum Industry with a Facility in the Lake Erie Basin

Tom Brungard, BP Products North America, Toledo Refinery  
4001 Cedar Point Road, Oregon, OH 43616  
Phone: 419-698-6200 E-mail: [thomas.brungard@bp.com](mailto:thomas.brungard@bp.com)

## **ODNR STAFF SUPPORTING THE ADVISORY BOARD**

Mike Shelton, Chief, Office of External Affairs  
2045 Morse Road, Building D-3, Columbus, OH 43229-6693  
Phone: 614-265-6891      E-mail: [mike.shelton@dnr.state.oh.us](mailto:mike.shelton@dnr.state.oh.us)

David Hanselmann, Chief, Division of Soil and Water Resources  
2045 Morse Road, Building B-3, Columbus, OH 43229-6693  
Phone: 614-265-6618      E-mail: [david.hanselmann@dnr.state.oh.us](mailto:david.hanselmann@dnr.state.oh.us)

Ted Lozier, Deputy Chief, Division of Soil and Water Resources  
2045 Morse Road, Building B-2, Columbus, OH 43229-6693  
Phone: 614-265-6728      E-mail: [ted.lozier@dnr.state.oh.us](mailto:ted.lozier@dnr.state.oh.us)

Mike Hallfrisch, Water Inventory and Planning Program Manager, Division of Soil and Water Resources  
2045 Morse Road, Building B-2, Columbus, OH 43229-6693  
Phone: 614-265-6745      E-mail: [mike.hallfrisch@dnr.state.oh.us](mailto:mike.hallfrisch@dnr.state.oh.us)

Leonard Black, Water Inventory and Planning Program, Division of Soil and Water Resources  
2045 Morse Road, Building B-2, Columbus, OH 43229-6693  
Phone: 614-265-6758      E-mail: [leonard.black@dnr.state.oh.us](mailto:leonard.black@dnr.state.oh.us)

Sara Lynaugh, OWRC Administrative Assistant, Division of Soil and Water Resources  
2045 Morse Road, Building B-2, Columbus, OH 43229-6693  
Phone: 614-265-6789      E-mail: [sara.lynaugh@dnr.state.oh.us](mailto:sara.lynaugh@dnr.state.oh.us)

Charles Rowan, ODNR Legal Counsel  
2045 Morse Road, Building D-2, Columbus, OH 43229-6693  
Phone: 614-265-6883      E-mail: [charles.rowan@dnr.state.oh.us](mailto:charles.rowan@dnr.state.oh.us)

## Appendix B

### **ORC 1522.08 Establishment of the Compact Advisory Board**

**SECTION 3.** (A) Not later than three months after the effective date of this section, the Director of Natural Resources shall convene an advisory board consisting of the following persons with an interest in the Great Lakes-St. Lawrence River Basin Water Resources Compact:

- (1) The Director of Natural Resources or the Director's designee, who shall serve as chairperson of the advisory board;
- (2) The Director of Environmental Protection or the Director's designee;
- (3) The Director of Development or the Director's designee;
- (4) The following members appointed by the Governor:
  - (a) One water quality expert from the faculty or staff of an Ohio college or university;
  - (b) One representative of a statewide environmental advocacy organization;
  - (c) One representative of a local environmental advocacy organization in the Lake Erie Basin;
  - (d) One representative of a sustainable economic development organization in the Lake Erie Basin;
  - (e) One representative of the travel and tourism industry;
  - (f) One representative of the electric utility industry;
  - (g) One representative of a county government in the Lake Erie Basin.
- (5) The following members appointed by the President of the Senate:
  - (a) Two members of the Senate who shall not be members of the same political party;
  - (b) One representative of the bottled water industry;
  - (c) One representative of a statewide land conservation advocacy organization;
  - (d) One representative of agricultural interests in the Lake Erie Basin;
  - (e) One representative of the aggregates industry;
  - (f) One representative of the pulp and paper industry;

- (g) One representative of a large manufacturer with a facility located within the Lake Erie Basin;
- (h) One member of the public.

(6) The following members appointed by the Speaker of the House of Representatives:

(a) Two members of the House of Representatives who shall not be members of the same political party;

(b) One representative of a municipal government in the Lake Erie Basin;

(c) One expert in hydrogeology from the faculty or staff of an Ohio college or university;

(d) One representative of a locally based organization in the Lake Erie Basin that assists in the development and implementation of a plan for the protection and management of surface and ground water resources in a watershed;

(e) One representative of a fish and wildlife advocacy organization;

(f) One representative of residential developers;

(g) One representative of the chemical industry;

(h) One representative of the petroleum industry with a facility located within the Lake Erie Basin.

All appointments shall be made to the advisory board not later than thirty days after the effective date of this section. The advisory board shall meet on a regular basis. Vacancies on the advisory board shall be filled in the manner provided for original appointments. Members of the advisory board shall receive no compensation for serving on the board. The Department of Natural Resources shall provide technical support to the advisory board.

(B) The advisory board shall be convened for the purpose of developing recommendations for legislation that is necessary to implement and effectuate the requirements and purposes of the Great Lakes-St. Lawrence River Basin Water Resources Compact. The recommendations shall address, but not be limited to, the following:

(1) The evaluation and recommendation of the threshold levels to be included in the implementing legislation for regulating new or increased water withdrawals in the state, considering at least all of the following:

(a) The number of withdrawals that will be regulated;

(b) The relative impact of those withdrawals;

(c) The practicality of regulating those withdrawals;

(d) The alternatives that are available in the establishment of a permitting program in order to meet the water management objectives of this state.

(2) The establishment of requirements regarding the review of lists of existing water users in the portion of the Great Lakes-St. Lawrence River Basin that is in this state;

(3) The establishment of a process for use by persons that wish to appeal their inclusion in the list of existing water users;

(4) The establishment of conservation objectives with respect to the Great Lakes-St. Lawrence River Basin Water Resources Compact and the development of the state's water conservation and efficiency programs;

(5) The method for determining the capacity of existing facilities as required in Section 4.12.2 of the Great Lakes-St. Lawrence River Basin Water Resources Compact.

(C) The advisory board shall present its final recommendations to the Governor and the General Assembly not later than eighteen months after the effective date of this section. It is the intent of the General Assembly that the recommendations of the advisory board will represent a consensus of the board's members regarding the issues presented to and discussed by the board. However, if a consensus cannot be reached on any or all of the issues before the board, one or more minority opinions may accompany the recommendations of the board.

(D) Upon submission of its recommendations under division (C) of this section, the advisory board shall cease to exist.

County	FacilityID	RegNo	SrcType	UseCat	Withdr.Bsln-MGD	Withdr.Basis	CU.Bsln-MGD	CU.Basis
ALLEN	BEAVERDAM VILLAGE	01504	GW	PWS	0.238	Trmt Cap	0.036	Coef-15%
ALLEN	BLUFFTON GOLF CLUB	01396	GW	Irr GC	0.502	Withdr Cap	0.452	Coef-90%
ALLEN	BLUFFTON STONE COMPANY	00252	GW	QDwtr/Ind NCU	2.016	Withdr Cap	0.000	NonConsUse
ALLEN	BLUFFTON VILLAGE	00945	GW	FirePrt	0.010	Withdr Cap	0.008	Coef-80%
ALLEN	COLONIAL GOLFERS CLUB	01398	ISW & GW	Irr GC	12.166	Withdr Cap	10.949	Coef-90%
ALLEN	GOECKE, KENNETH	00297	ISW	Irr Agr	0.300	Withdr Cap	0.270	Coef-90%
ALLEN	HAWTHORNE HILLS GOLF COURSE	02258	ISW	Irr GC	1.440	Withdr Cap	1.296	Coef-90%
ALLEN	LIMA CITY	01320-21	ISW	PWS	97.340	Withdr Cap-UG	14.601	Coef-15%
ALLEN	LIMA REFINING COMPANY	00386	GW	Ind Prc	2.620	Withdr Cap	0.262	Coef-10%
ALLEN	LOST CREEK COUNTRY CLUB	00937	ISW & GW	Irr GC	0.267	Withdr Cap	0.240	Coef-90%
ALLEN	NATIONAL LIME & STONE-BLOOMLOCK	02218	GW	QDwtr/Ind NCU	3.000	Withdr Cap	0.000	NonConsUse
ALLEN	NATIONAL LIME & STONE-LIMA	01079	GW	QDwtr/Ind NCU	4.300	Withdr Cap	0.000	NonConsUse
ALLEN	PCS NITROGEN OHIO	01769	GW	Ind Prc	5.610	Withdr Cap	0.561	Coef-10%
ALLEN	PROCTOR AND GAMBLE	02279	GW	C&I-50/FirePrt-50	0.936	Withdr Cap	0.449	Coef-48%
ALLEN	RUDOLPH FOODS COMPANY	01989	GW	Ind Prc	0.170	Withdr Cap	0.017	Coef-10%
ALLEN	SHAWNEE COUNTRY CLUB	01381	GW	Irr GC	1.500	Withdr Cap	1.350	Coef-90%
ALLEN	SPENCERVILLE VILLAGE	00180	GW	PWS	1.584	Trmt Cap	0.238	Coef-15%
ALLEN	SPRINGBROOK GOLF CLUB	00622	ISW	Irr GC	0.136	Withdr Cap	0.122	Coef-90%
ALLEN	SUTER PRODUCE	01295	ISW & GW	Irr Agr	4.520	Withdr Cap	4.068	Coef-90%
ALLEN	THE OAKS GOLF COURSE	01448	GW	Irr GC	0.202	Withdr Cap	0.182	Coef-90%
ASHLAND	ROLLING ACRES GOLF CLUB	00431	ISW	Irr GC	0.058	Withdr Cap	0.052	Coef-90%
ASHTABULA	ASHTABULA COUNTY PORT AUTHORITY	02181	LE	Ind Prc	200.000	Withdr Cap	20.000	Coef-10%
ASHTABULA	CHAPEL HILLS GOLF COURSE	00056	ISW	Irr GC	0.720	Withdr Cap	0.648	Coef-90%
ASHTABULA	CONNEAUT CITY	00344	LE	PWS	2.800	Withdr Cap	0.420	Coef-15%
ASHTABULA	DEER LAKE GOLF CLUB	01724	ISW	Irr GC	1.900	Withdr Cap	1.710	Coef-90%
ASHTABULA	FE-ASHTABULA ELECTRIC GENERATING STATION	00464	LE	EleGen OT	995.000	Withdr Cap	9.995	Coef-1%
ASHTABULA	GRAND RIVER JERSEY FARM-IRRIGATION	00992a	ISW	Irr Agr	0.750	Withdr Cap	0.675	Coef-90%
ASHTABULA	GRAND RIVER JERSEY FARM-LIVESTOCK	00992b	GW	Lvs	0.035	Withdr Cap	0.028	Coef-80%
ASHTABULA	HARBOR GOLF CLUB	01278	ISW	Irr GC	0.250	Withdr Cap	0.225	Coef-90%
ASHTABULA	HEMLOCK SPRINGS GOLF COURSE	00520	ISW	Irr GC	4.000	Withdr Cap	3.600	Coef-90%
ASHTABULA	NORTH RIDGE MATERIALS	00062	ISW	Ind NCU	0.100	Withdr Cap	0.000	NonConsUse
ASHTABULA	OAWC-ASHTABULA	00604	LE	PWS-53/Ind P-47	10.000	Withdr Cap	1.270	Coef-12.7%
ASHTABULA	ORWELL VILLAGE	00988	GW	PWS	0.506	Trmt Cap	0.076	Coef-15%
ASHTABULA	PRAXAIR	00986	LE	Ind Prc	8.500	Withdr Cap	0.850	Coef-10%
ASHTABULA	SAYBROOK STATION FARMS	01557	ISW & GW	Irr Agr	0.030	Withdr Cap	0.027	Coef-90%
ASHTABULA	VILLAGE GREEN GOLF COURSE	00084	ISW	Irr GC	0.734	Withdr Cap	0.661	Coef-90%
ASHTABULA	WINDY HILL GOLF CLUB	01628	ISW	Irr GC	0.390	Withdr Cap	0.351	Coef-90%

County	FacilityID	RegNo	Src Type	Use Cat	Withdr Bslfr-MGD	Withdr Basis	CU Bslfr-MGD	CU Basis
AUGLAIZE	CON AG	00335	GW	QDwtr/Ind NCU	1.000	Withdr Cap	0.000	NonConsUse
AUGLAIZE	CRIDERSVILLE VILLAGE	01479	GW	PWS	0.466	Trmt Cap	0.070	Coef-15%
AUGLAIZE	G A WINTZER & SON COMPANY	01151	GW	Ind Prc	1.296	Withdr Cap	0.130	Coef-10%
AUGLAIZE	MINSTER VILLAGE	00283	GW	PWS	0.720	Withdr Cap	0.020	Coef-15% of L
AUGLAIZE	NATIONAL LIME & STONE-BUCKLAND	01073	GW	QDwtr/Ind NCU	2.150	Withdr Cap	0.000	NonConsUse
AUGLAIZE	NEW BREMEN VILLAGE	00218	GW	PWS	0.955	Trmt Cap	0.143	Coef-15%
AUGLAIZE	NEW KNOXVILLE VILLAGE	00749	GW	PWS	0.335	Trmt Cap	0.050	Coef-15%
AUGLAIZE	SAINT MARYS CITY	00652	GW	PWS	2.640	Trmt Cap	0.396	Coef-15%
AUGLAIZE	SAINT MARYS FISH HATCHERY	00339	GW	FishHch	0.204	Withdr Cap	0.163	Coef-80%
AUGLAIZE	VEYANCE TECHNOLOGIES-ST MARYS	00770	GW	Ind Prc	2.160	Withdr Cap	0.216	Coef-10%
AUGLAIZE	WAPAKONETA CITY	00387	GW	PWS	2.750	Trmt Cap	0.412	Coef-15%
AUGLAIZE	WAPAKONETA COUNTRY CLUB	01903	GW	Irr GC	0.180	Withdr Cap	0.162	Coef-90%
CRAWFORD	BUCYRUS CITY	00886	ISW	PWS	9.724	Withdr Cap-UG	1.459	Coef-15%
CRAWFORD	BUCYRUS GOLF COURSE	01678	ISW	Irr GC	0.276	Withdr Cap	0.248	Coef-90%
CRAWFORD	CELERYVILLE CONSERVANCY DISTRICT	01294	ISW	Irr Agr	2.171	Withdr Cap-UG	1.954	Coef-90%
CRAWFORD	NATIONAL LIME & STONE-BUCYRUS	01076	GW	QDwtr/Ind NCU	5.887	Withdr Cap	0.000	NonConsUse
CRAWFORD	NEW WASHINGTON VILLAGE	01716	ISW & GW	PWS	0.389	Withdr Cap-UG	0.058	Coef-15%
CRAWFORD	TIMKEN-BUCYRUS OPERATIONS	01956	GW	Ind Prc	0.580	Withdr Cap	0.058	Coef-10%
CRAWFORD	VALLEY VIEW GOLF CLUB	00105	ISW	Irr GC	0.106	Withdr Cap	0.095	Coef-90%
CUYAHOGA	ACACIA COUNTRY CLUB	01663	ISW	Irr GC	0.350	Withdr Cap	0.315	Coef-90%
CUYAHOGA	ARCELORMITTAL CLEVELAND	00295	ISW	Ind Prc	621.648	Withdr Cap	62.165	Coef-10%
CUYAHOGA	BEECHMONT COUNTRY CLUB	00453	ISW	Irr GC	0.200	Withdr Cap	0.180	Coef-90%
CUYAHOGA	BEREA CITY	01740	ISW	PWS	3.960	Trmt Cap	0.594	Coef-15%
CUYAHOGA	BIG MET GOLF COURSE	02126	ISW	Irr GC	1.250	Withdr Cap	1.125	Coef-90%
CUYAHOGA	BRIARDALE GREENS GOLF COURSE	01591	ISW	Irr GC	0.400	Withdr Cap	0.360	Coef-90%
CUYAHOGA	BRIARWOOD GOLF COURSE	00264	ISW	Irr GC	1.440	Withdr Cap	1.296	Coef-90%
CUYAHOGA	CANTERBURY GOLF CLUB	01118	GW	Irr GC	0.460	Withdr Cap	0.414	Coef-90%
CUYAHOGA	CHAGRIN VALLEY NURSERIES	01409	ISW	Irr Agr	1.253	Withdr Cap	1.128	Coef-90%
CUYAHOGA	CLEVELAND CITY	00740-43	LE	PWS	589.800	Trmt Cap	85.470	Coef-15%
CUYAHOGA	CLEVELAND ENERGY RESOURCES	02248	ISW	C&I	0.864	Withdr Cap	0.130	Coef-15%
CUYAHOGA	FE-LAKE SHORE ELECTRIC GENERATING STATION	00648	LE	EleGen OT	656.000	Withdr Cap	6.660	Coef-1%
CUYAHOGA	GRANTWOOD GOLF COURSE	01403	ISW	Irr GC	0.300	Withdr Cap	0.270	Coef-90%
CUYAHOGA	HAWTHORNE VALLEY COUNTRY CLUB	01630	ISW	Irr GC	0.650	Withdr Cap	0.585	Coef-90%
CUYAHOGA	HYDRAULIC PRESS BRICK-HAYDITE PLANT	01113	ISW	Ind Prc	2.500	Withdr Cap	0.250	Coef-10%
CUYAHOGA	LAKWOOD COUNTRY CLUB	01412	ISW	Irr GC	3.000	Withdr Cap	2.700	Coef-90%
CUYAHOGA	MAYFIELD COUNTRY CLUB	01516	ISW	Irr GC	2.220	Withdr Cap	1.998	Coef-90%
CUYAHOGA	MESCKO PRODUCING & OPERATING COMPANY	02163	ISW	Ind Prc	0.007	Withdr Cap	0.001	Coef-10%

County	FacilityID	RegNo	SrcType	UseCat	Withdr.Basin-MGD	Withdr.Basis	C.U.Basin-MGD	C.U.Basis
CUYAHOGA	PEPPER PIKE GOLF CLUB	01622	ISW	Irr GC	0.720	Withdr Cap	0.648	Coef-90%
CUYAHOGA	SHAWNEE GOLF COURSE	01082	ISW	Irr GC	1.476	Withdr Cap	1.328	Coef-90%
CUYAHOGA	SIGNATURE OF SOLON GOLF COURSE	02253	ISW & GW	Irr GC	1.980	Withdr Cap	1.782	Coef-90%
CUYAHOGA	SPRINGDALE GOLF COURSE	00680	ISW	Irr GC	1.152	Withdr Cap	1.037	Coef-90%
CUYAHOGA	THE COUNTRY CLUB	00693	ISW	Irr GC	2.016	Withdr Cap	1.814	Coef-90%
DEFIANCE	DEFIANCE CITY	00034	ISW	PWS	11.748	Withdr Cap-UG	1.762	Coef-15%
DEFIANCE	GM POWERTRAIN DIVISION	01160	ISW	Ind Prc	35.000	Withdr Cap	3.500	Coef-10%
DEFIANCE	HICKSVILLE VILLAGE	00392	GW	PWS-95/Ind P-5	2.010	Withdr Cap	0.297	Coef-14.8%
DEFIANCE	KETTNERING COUNTRY CLUB	00260	ISW	Irr GC	2.340	Withdr Cap	2.106	Coef-90%
DEFIANCE	NEY VILLAGE	00146	GW	PWS	0.158	Trmt Cap	0.024	Coef-15%
DEFIANCE	SHERWOOD VILLAGE	01576	GW	PWS	0.158	Trmt Cap	0.024	Coef-15%
DEFIANCE	WEBER SAND & GRAVEL-DIETSCH	02260	GW	QDwtr/Ind NCU	10.368	Withdr Cap	0.000	NonConsUse
ERIE	AUTOMOTIVE COMPONENTS HLDNGS-SANDUSKY	01340	ISW	Ind Prc	23.040	Withdr Cap	2.304	Coef-10%
ERIE	BARNES NURSERY	02091	LE	Irr Agr	1.580	Withdr Cap	1.422	Coef-90%
ERIE	BITTERSWEET FARMS	00558	ISW	Irr Agr	0.360	Withdr Cap	0.324	Coef-90%
ERIE	CASTALIA HATCHERY	02280	GW	Dwtr	1.000	Withdr Cap	0.000	NonConsUse
ERIE	CEDAR POINT AMUSEMENT PARK	00397	LE	C&I	1.000	Withdr Cap	0.150	Coef-15%
ERIE	CLEVELAND QUARRIES-BIRMINGHAM	00983	GW	QDwtr/Ind NCU	0.430	Withdr Cap	0.000	NonConsUse
ERIE	ERIE MATERIALS	01543	ISW & GW	Ind NCU	1.020	Withdr Cap	0.000	NonConsUse
ERIE	GOLF INC	01038	ISW	Irr GC	5.180	Withdr Cap	4.662	Coef-90%
ERIE	HANSON AGGREGATES-SANDUSKY	00726	GW	QDwtr/Ind NCU	10.168	Withdr Cap	0.000	NonConsUse
ERIE	HANSON AGGREGATES-WAGNER	00483	GW	QDwtr/Ind NCU	13.700	Withdr Cap	0.000	NonConsUse
ERIE	HURON CITY	00549	LE	PWS	3.740	Trmt Cap	0.561	Coef-15%
ERIE	KELLEY'S ISLAND VILLAGE	00209	LE	PWS	0.330	Trmt Cap	0.050	Coef-15%
ERIE	LAFARGE-KELLEYS ISLAND	02148	GW	QDwtr/Ind NCU	27.014	Withdr Cap	0.000	NonConsUse
ERIE	MILAN VILLAGE	00222	GW	PWS	0.792	Trmt Cap	0.119	Coef-15%
ERIE	NASA-BIG ISLAND	02272	LE	C&I-20;Fire Prt-80	15.000	Withdr Cap	10.050	Coef-67%
ERIE	NASA-RYE BEACH	02271	LE	C&I-20;Fire Prt-80	36.000	Withdr Cap	24.120	Coef-67%
ERIE	PLUM BROOK COUNTRY CLUB	01021	ISW	Irr GC	1.000	Withdr Cap	0.900	Coef-90%
ERIE	RESTHAVEN WILDLIFE AREA	00757	LE	WtIAug	11.520	Withdr Cap	9.216	Coef-80%
ERIE	SANDUSKY CITY	01685	LE	PWS	18.000	Withdr Cap	2.700	Coef-15%
ERIE	SANDUSKY DOCK CORP	01855	LE	DustCntr	6.890	Withdr Cap	5.352	Coef-50%
ERIE	SAWMILL CREEK GOLF COURSE	02266	LE	Irr GC	0.400	Withdr Cap	0.360	Coef-90%
ERIE	VERMILION CITY	00416	LE & ISW	PWS	3.300	Trmt Cap	0.495	Coef-15%
ERIE	WILLOWAY NURSERIES HURON-DARROW RD	00796a	ISW	Irr Agr	0.500	Withdr Cap	0.450	Coef-90%
ERIE	WILLOWAY NURSERIES HURON-HAHN RD	00798b	ISW	Irr Agr	2.200	Withdr Cap	1.980	Coef-90%
ERIE	WILLOWAY NURSERIES HURON-SR 6	00796c	LE & ISW	Irr Agr	2.000	Withdr Cap	1.800	Coef-90%



County	FacilityID	RegNo	Std Type	Use Cat	Withdr.BsIn-MGD	Withdr.Easis	CU.BsIn-MGD	CU.Basis
GEAUGA	SAINT DENNIS GOLF COURSE	00346	ISW	Irr GC	0.912	Withdr Cap	0.821	Coeff-90%
GEAUGA	SUNRISE FARM-LOWER	01309a	ISW	Irr Agr	0.792	Withdr Cap	0.713	Coeff-90%
GEAUGA	SUNRISE FARM-UPPER	01309b	ISW	Irr Agr	0.792	Withdr Cap	0.713	Coeff-90%
GEAUGA	TANGLEWOOD COUNTRY CLUB-CHAGRIN FALLS	01098	ISW	Irr GC	1.360	Withdr Cap	1.224	Coeff-90%
GEAUGA	TANGLEWOOD LAKE ASSN	01435	GW	PWS	0.440	Trtmt Cap	0.066	Coeff-15%
HANCOCK	ARLINGTON VILLAGE	00904	GW	PWS	0.352	Trtmt Cap	0.053	Coeff-15%
HANCOCK	ENELCO	00784	GW	QDwtr/Ind NCU	1.415	Withdr Cap	0.000	NonConsUse
HANCOCK	FINDLAY CITY	01049	ISW	PWS	41.157	Withdr Cap-UG	6.173	Coeff-15%
HANCOCK	FINDLAY COUNTRY CLUB	00869	ISW	Irr GC	2.400	Withdr Cap	2.160	Coeff-90%
HANCOCK	FOSTORIA CITY	01343	ISW & GW	PWS	15.631	Withdr Cap-UG	2.344	Coeff-15%
HANCOCK	FOSTORIA COUNTRY CLUB	00745	GW	Irr GC	0.480	Withdr Cap	0.432	Coeff-90%
HANCOCK	HILLCREST GOLF CLUB	00448	GW	Irr GC	0.150	Withdr Cap	0.135	Coeff-90%
HANCOCK	McCOMB VILLAGE	00176	ISW	PWS	1.769	Withdr Cap-UG	0.265	Coeff-15%
HANCOCK	MOUNT BLANCHARD VILLAGE	01446	GW	PWS	0.570	Trtmt Cap	0.086	Coeff-15%
HANCOCK	NATIONAL LIME & STONE-FINDLAY	01074	GW	QDwtr/Ind NCU	3.340	Withdr Cap	0.000	NonConsUse
HANCOCK	NIESE & MAAG-FISHELL	02241	ISW	Irr Agr	0.648	Withdr Cap	0.583	Coeff-90%
HANCOCK	NIESE & MAAG-HOVEST	02240	ISW	Irr Agr	0.648	Withdr Cap	0.583	Coeff-90%
HANCOCK	NIESE & MAAG-PETTY JOHN	02234	GW	Irr Agr	0.288	Withdr Cap	0.259	Coeff-90%
HANCOCK	RAWSON VILLAGE	01140	GW	PWS	0.198	Trtmt Cap	0.030	Coeff-15%
HANCOCK	RED HAWK RUN GOLF COURSE	02037	GW	Irr GC	0.690	Withdr Cap	0.621	Coeff-90%
HANCOCK	SHADY ACRES GOLF CLUB	01217	ISW & GW	Irr GC	0.144	Withdr Cap	0.130	Coeff-90%
HANCOCK	SHADY GROVE ENTERPRISES	01533	GW	Irr GC	0.140	Withdr Cap	0.126	Coeff-90%
HANCOCK	SYCAMORE SPRINGS GOLF COURSE	01127	ISW & GW	Irr GC	0.700	Withdr Cap	0.630	Coeff-90%
HANCOCK	WAYSIDE GOLF COURSE	01099	GW	Irr GC	0.480	Withdr Cap	0.432	Coeff-90%
HARDIN	ADA VILLAGE	00186	GW	PWS	1.100	Trtmt Cap	0.165	Coeff-15%
HARDIN	DUNKIRK VILLAGE	01511	GW	PWS	0.121	Trtmt Cap	0.018	Coeff-15%
HARDIN	FOREST VILLAGE	00018	GW	PWS	0.317	Trtmt Cap	0.048	Coeff-15%
HARDIN	OHIO FRESH EGGS-LARJUE PULLET	02006	GW	Lvs-88WQR-12	0.139	Withdr Cap	0.101	Coeff-72.8%
HARDIN	SHELLY MATERIALS-FOREST QUARRY	02274	GW	QDwtr/Ind NCU	3.310	Withdr Cap	0.000	NonConsUse
HARDIN	SHELLY MATERIALS-HARDIN	01133	GW	QDwtr/Ind NCU	4.030	Withdr Cap	0.000	NonConsUse
HENRY	BAUGHMAN FARMS-CR 12	00318a	GW	Irr Agr	0.360	Withdr Cap	0.324	Coeff-90%
HENRY	BAUGHMAN FARMS-SR 108	00318b	GW	Irr Agr	0.300	Withdr Cap	0.270	Coeff-90%
HENRY	CAMPBELL SOUP COMPANY	00076	ISW	Ind Prc	15.000	Withdr Cap	1.500	Coeff-10%
HENRY	DESHLER VILLAGE	01308	GW	PWS	0.713	Trtmt Cap	0.107	Coeff-15%
HENRY	HAWLER VILLAGE	00526	GW	PWS	0.158	Trtmt Cap	0.024	Coeff-15%
HENRY	HOLGATE VILLAGE	01004	GW	PWS	0.475	Trtmt Cap	0.071	Coeff-15%
HENRY	LEGACY FARMS	01674	ISW	Irr Agr	0.290	Withdr Cap	0.261	Coeff-90%

County	Facility ID	RegNo	Src Type	Use Cat	Withdr Bslin-MGD	Withdr Basis	CU Bslin-MGD	CU Basis
HENRY	MAUMEE YOUTH CENTER	00950	GW	C&I	0.017	Trtmt Cap	0.003	Coeff-15%
HENRY	NAPOLEON CITY	00876	ISW	PWS	4.950	Trtmt Cap	0.742	Coeff-15%
HENRY	NAPOLEON GOLF COURSE	00035	ISW	Irr GC	1.500	Withdr Cap	1.350	Coeff-90%
HURON	BELLEVUE CITY	00608	ISW	PWS	6.839	Withdr Cap-UG	1.026	Coeff-15%
HURON	BUURMA FARMS-SR 103 IRRIGATION	01265a	ISW & GW	Irr Agr	6.906	Withdr Cap	6.215	Coeff-90%
HURON	BUURMA FARMS-SR 103 WASH	01265b	ISW & GW	Ind NCU	1.337	Withdr Cap	0.000	NonConsUse
HURON	BUURMA FARMS-SR 598	01265c	ISW & GW	Irr Agr	3.616	Withdr Cap	3.256	Coeff-90%
HURON	DUTCH MAID PRODUCE-IRRIGATION	01272a	GW	Irr Agr	0.130	Withdr Cap	0.117	Coeff-90%
HURON	DUTCH MAID PRODUCE-WASH	01272b	GW	Ind NCU	0.520	Withdr Cap	0.000	NonConsUse
HURON	EAGLE CREEK GOLF CLUB	01405	ISW	Irr GC	1.140	Withdr Cap	1.026	Coeff-90%
HURON	GREENWICH VILLAGE	00377	GW	PWS	0.222	Trtmt Cap	0.033	Coeff-15%
HURON	HOLIDAY LAKES	01214	GW	PWS	0.111	Trtmt Cap	0.017	Coeff-15%
HURON	HOLTHOUSE FARMS-SECTION LINE RD	01287a	ISW & GW	Irr Agr	1.042	Withdr Cap	0.938	Coeff-90%
HURON	HOLTHOUSE FARMS-SR 103 IRRIGATION	01287b	ISW & GW	Irr Agr	2.197	Withdr Cap	1.977	Coeff-90%
HURON	HOLTHOUSE FARMS-SR 103 WASH	01287c	ISW & GW	Ind NCU	0.229	Withdr Cap	0.000	NonConsUse
HURON	MILLSTONE HILLS GOLF COURSE	01333	ISW & GW	Irr GC	1.220	Withdr Cap	1.098	Coeff-90%
HURON	MONROEVILLE VILLAGE	00010	ISW	PWS	0.873	Withdr Cap-UG	0.131	Coeff-15%
HURON	NEW LONDON VILLAGE	00308	ISW	PWS	6.837	Withdr Cap-UG	1.026	Coeff-15%
HURON	NORTH FAIRFIELD VILLAGE	00550	GW	PWS	0.154	Trtmt Cap	0.023	Coeff-15%
HURON	NORWALK CITY	00345	ISW	PWS	8.320	Withdr Cap-UG	1.248	Coeff-15%
HURON	SYCAMORE HILLS GOLF CLUB NORWALK	00898	ISW	Irr GC	1.000	Withdr Cap	0.900	Coeff-90%
HURON	WIERS FARM 1-IRRIGATION	01291a	ISW & GW	Irr Agr	11.890	Withdr Cap	10.701	Coeff-90%
HURON	WIERS FARM 1-WASH	01291b	GW	Ind NCU	0.190	Withdr Cap	0.000	NonConsUse
HURON	WILLARD CITY	00155	ISW	PWS	11.359	Withdr Cap-UG	1.704	Coeff-15%
LAKE	AGORA GARDENS	00069	ISW	Irr Agr	0.230	Withdr Cap	0.207	Coeff-90%
LAKE	AIRPORT GREENS GOLF COURSE	02254	ISW	Irr GC	0.936	Withdr Cap	0.842	Coeff-90%
LAKE	AQUA OHIO-MENTOR	00783	LE	PWS	19.800	Trtmt Cap	2.970	Coeff-15%
LAKE	BLACK BROOK COUNTRY CLUB	01478	ISW & GW	Irr GC	0.590	Withdr Cap	0.531	Coeff-90%
LAKE	C M BROWN NURSERIES-JOLES FARM	01745a	ISW & GW	Irr Agr	0.594	Withdr Cap	0.535	Coeff-90%
LAKE	C M BROWN NURSERIES-MAIN FARM	01745b	ISW & GW	Irr Agr	0.504	Withdr Cap	0.454	Coeff-90%
LAKE	C M BROWN NURSERIES-NORTH FARM	01745c	ISW	Irr Agr	0.388	Withdr Cap	0.349	Coeff-90%
LAKE	CARMEUSE LIME-GRAND RIVER	00882	ISW	Ind Prc	1.728	Withdr Cap	0.173	Coeff-10%
LAKE	COTTAGE GARDENS-LARSON FARM	00808a	ISW	Irr Agr	3.440	Withdr Cap	3.096	Coeff-90%
LAKE	COTTAGE GARDENS-MAIN FARM	00808b	ISW & GW	Irr Agr	3.240	Withdr Cap	2.916	Coeff-90%
LAKE	ERIE SHORES GOLF COURSE	00496	ISW	Irr GC	0.792	Withdr Cap	0.713	Coeff-90%
LAKE	FAIRPORT HARBOR VILLAGE	00039	LE	PWS	1.650	Trtmt Cap	0.248	Coeff-15%
LAKE	FE-EASTLAKE ELECTRIC GENERATING STATION	00548	LE	EleGen OT	1155.000	Withdr Cap	11.550	Coeff-1%

County	FacilityID	RegNo	Src Type	Use Cat	Withdr Bsin-MGD	Withdr Basis	CU Bsin-MGD	CU Basis
LAKE	FE-PERRY ELECTRIC GENERATING STATION	01483	LE	EleGen CC	167.000	Withdr Cap	16.700	Coef-10%
LAKE	GREEN RIDGE GOLF COURSE	00026	ISW	Irr GC	0.270	Withdr Cap	0.243	Coef-90%
LAKE	HERMAN LOSELY & SON-ARCOLA MILLER FARM	01730	ISW	Irr Agr	1.500	Withdr Cap	1.350	Coef-90%
LAKE	HERMAN LOSELY & SON-BRICK POND	01203	ISW	Irr Agr	0.200	Withdr Cap	0.180	Coef-90%
LAKE	HERMAN LOSELY & SON-KOHANKIE	01207	ISW	Irr Agr	2.220	Withdr Cap	1.998	Coef-90%
LAKE	HERMAN LOSELY & SON-LOC 1	01208	ISW	Irr Agr	0.500	Withdr Cap	0.450	Coef-90%
LAKE	HERMAN LOSELY & SON-LOCKWOOD POND	02256	ISW	Irr Agr	0.600	Withdr Cap	0.540	Coef-90%
LAKE	HERMAN LOSELY & SON-MIDDLE RIDGE	01205	ISW	Irr Agr	0.290	Withdr Cap	0.261	Coef-90%
LAKE	HERMAN LOSELY & SON-RED-MILL	01204	ISW	Irr Agr	2.100	Withdr Cap	1.890	Coef-90%
LAKE	HERMAN LOSELY & SON-RT 20	01202	ISW	Irr Agr	0.860	Withdr Cap	0.774	Coef-90%
LAKE	HERMAN LOSELY & SON-SHEPARD	01201	ISW	Irr Agr	0.280	Withdr Cap	0.252	Coef-90%
LAKE	HERMAN LOSELY & SON-STH	01206	ISW	Irr Agr	0.500	Withdr Cap	0.450	Coef-90%
LAKE	KIRTLAND COUNTRY CLUB	00198	ISW	Irr GC	1.000	Withdr Cap	0.900	Coef-90%
LAKE	KLYN NURSERY-GARRETT FARM	02275	ISW	Irr Agr	6.480	Withdr Cap	5.832	Coef-90%
LAKE	KLYN NURSERY-HENDRICKS FARM	02277	ISW	Irr Agr	2.160	Withdr Cap	1.944	Coef-90%
LAKE	KLYN NURSERY-PASTOR FARM	02276	ISW	Irr Agr	1.440	Withdr Cap	1.296	Coef-90%
LAKE	KLYN NURSERY-PERRY TWP	00920	ISW	Irr Agr	15.840	Withdr Cap	14.256	Coef-90%
LAKE	LAKE COUNTY NURSERY-CHAMPION	01085a	ISW & GW	Irr Agr	2.320	Withdr Cap	2.088	Coef-90%
LAKE	LAKE COUNTY NURSERY-CHAMPION SUSTAR	01085b	ISW	Irr Agr	2.810	Withdr Cap	2.529	Coef-90%
LAKE	LAKE COUNTY NURSERY-FULLER	01087	ISW	Irr Agr	1.300	Withdr Cap	1.170	Coef-90%
LAKE	LAKE COUNTY NURSERY-KOHANKIE	01109	GW	Irr Agr	0.300	Withdr Cap	0.270	Coef-90%
LAKE	LAKE COUNTY NURSERY-MAIN	01086	ISW	Irr Agr	2.878	Withdr Cap	2.590	Coef-90%
LAKE	LAKE COUNTY-EAST WATER DISTRICT	00115	LE	PWS-83/Ind P-37	20.000	Withdr Cap	2.640	Coef-13.2%
LAKE	LAKE COUNTY-WEST WATER DISTRICT	00433	LE	PWS	22.000	Trmt Cap	3.300	Coef-15%
LAKE	LOST NATION GOLF COURSE	01418	ISW	Irr GC	0.432	Withdr Cap	0.389	Coef-90%
LAKE	MADISON COUNTRY CLUB	00195	ISW	Irr GC	1.250	Withdr Cap	1.125	Coef-90%
LAKE	MADISON OHIO GROWERS-MAIN	01106	ISW & GW	Irr Agr	0.275	Withdr Cap	0.247	Coef-90%
LAKE	MADISON OHIO GROWERS-MIDDLE RIDGE	01155	ISW	Irr Agr	0.130	Withdr Cap	0.117	Coef-90%
LAKE	MANAKI GOLF COURSE	00407	ISW	Irr GC	1.728	Withdr Cap	1.555	Coef-90%
LAKE	MORETTI NURSERY	01550	ISW	Irr Agr	0.281	Withdr Cap	0.253	Coef-90%
LAKE	NIEDZIALEK, JOHN & APRIL	02104	ISW	WtAug	0.346	Withdr Cap	0.277	Coef-90%
LAKE	PAINESVILLE CITY	00293	LE	PWS	8.250	Trmt Cap	1.238	Coef-15%
LAKE	PAINESVILLE COUNTRY CLUB	00081	ISW	Irr GC	0.870	Withdr Cap	0.783	Coef-90%
LAKE	PENN OHIO WHOLESALE	01566	ISW	Irr Agr	0.290	Withdr Cap	0.261	Coef-90%
LAKE	PEPPERIDGE TREE GOLF COURSE	00372	ISW	Irr GC	0.720	Withdr Cap	0.648	Coef-90%
LAKE	PINE RIDGE COUNTRY CLUB	02255	ISW	Irr GC	1.000	Withdr Cap	0.900	Coef-90%
LAKE	POWDERHORN GOLF COURSE	00795	ISW	Irr GC	1.080	Withdr Cap	0.972	Coef-90%

County	FacilityID	RegNo	Src Type	Use Cat	Withdr Bsin-MGD	Withdr Basis	CJ Bsin-MGD	CJ Basis
LAKE	QUAIL HOLLOW COUNTRY CLUB	01497	SW & GW	Irr GC	4.030	Withdr Cap	3.627	Coef-90%
LAKE	RIDGE MANOR NURSERIES-CHAPEL FARM	00879	ISW	Irr Agr	1.500	Withdr Cap	1.350	Coef-90%
LAKE	RIDGE MANOR NURSERIES-RIDGE MANOR FARM	00932	ISW	Irr Agr	2.300	Withdr Cap	2.070	Coef-90%
LAKE	ROEMER NURSERY	01068	ISW & GW	Irr Agr	2.721	Withdr Cap	2.449	Coef-90%
LAKE	SUNLEAF NURSERY	00866	ISW	Irr Agr	0.545	Withdr Cap	0.491	Coef-90%
LAKE	TOWNLINE NURSERY	01554	GW	Irr Agr	0.020	Withdr Cap	0.018	Coef-90%
LAKE	WARNER NURSERIES-WILLOUGHBY HILLS	01235	ISW	Irr Agr	0.648	Withdr Cap	0.583	Coef-90%
LORAIN	AMHERST GOLF LINKS	01415	ISW & GW	Irr GC	0.150	Withdr Cap	0.135	Coef-90%
LORAIN	AQUA MARINE GOLF COURSE	00437	LE	Irr GC	0.432	Withdr Cap	0.389	Coef-90%
LORAIN	AVON LAKE CITY	00121	LE	PWS	44.000	Trtmt Cap	6.600	Coef-15%
LORAIN	AVON OAKS COUNTRY CLUB	00286	ISW	Irr GC	0.720	Withdr Cap	0.648	Coef-90%
LORAIN	AVONDALE GOLF CLUB	02244	ISW	Irr GC	0.432	Withdr Cap	0.389	Coef-90%
LORAIN	BOB O LINK GOLF COURSE	00205	ISW	Irr GC	0.720	Withdr Cap	0.648	Coef-90%
LORAIN	BRENTWOOD GOLF CLUB	01030	ISW	Irr GC	0.800	Withdr Cap	0.720	Coef-90%
LORAIN	COLUMBIA HILLS COUNTRY CLUB	01577	ISW	Irr GC	0.030	Withdr Cap	0.027	Coef-90%
LORAIN	DORLON GOLF CLUB	01493	ISW	Irr GC	0.648	Withdr Cap	0.583	Coef-90%
LORAIN	ELYRIA CITY	00517	LE	PWS	24.200	Trtmt Cap	3.630	Coef-15%
LORAIN	ELYRIA COUNTRY CLUB	01165	ISW	Irr GC	1.728	Withdr Cap	1.565	Coef-90%
LORAIN	EMERALD WOODS GOLF COURSES	01558	ISW	Irr GC	3.132	Withdr Cap	2.819	Coef-90%
LORAIN	END O WAY FARMS	00653	ISW	Irr Agr	1.760	Withdr Cap	1.584	Coef-90%
LORAIN	FOREST HILLS GOLF CENTER	00369	ISW	Irr GC	2.400	Withdr Cap	2.160	Coef-90%
LORAIN	HICKORY NUT GOLF COURSE	02257	ISW	Irr GC	0.720	Withdr Cap	0.648	Coef-90%
LORAIN	LORAIN CITY	00125	LE	PWS	18.920	Trtmt Cap	2.838	Coef-15%
LORAIN	LORAIN COUNTRY CLUB-FOX CREEK G&R	01747	ISW	Irr GC	0.890	Withdr Cap	0.801	Coef-90%
LORAIN	MALLARD CREEK GOLF COURSE	02249	ISW	Irr GC	0.216	Withdr Cap	0.194	Coef-90%
LORAIN	OBERLIN CITY	00059	ISW	PWS	4.052	Withdr Cap-UG	0.609	Coef-15%
LORAIN	OBERLIN GOLF CLUB	00291	ISW	Irr GC	1.440	Withdr Cap	1.296	Coef-90%
LORAIN	OE-EDGEWATER ELECTRIC GENERATING STATION	00716	LE	EleGen OT	194.990	Withdr Cap	1.950	Coef-1%
LORAIN	OE-WEST LORAIN ELECTRIC GENERATING STATION	00712	LE	EleGen OT	10.080	Withdr Cap	0.101	Coef-1%
LORAIN	OPM-AVON LAKE ELECTRIC GENERATING STATION	02053	LE	EleGen OT	688.000	Withdr Cap	6.880	Coef-1%
LORAIN	PHEASANT RUN GOLF COURSE	02278	ISW	Irr GC	1.296	Withdr Cap	1.166	Coef-90%
LORAIN	PINE BROOK GOLF COURSE	01507	ISW	Irr GC	0.250	Withdr Cap	0.225	Coef-90%
LORAIN	REPUBLIC ENGINEERED PRODUCTS	02128	ISW	Ind Prc	100.000	Withdr Cap	10.000	Coef-10%
LORAIN	RIVERSIDE ORCHARD	01650	ISW	Irr Agr	0.670	Withdr Cap	0.603	Coef-90%
LORAIN	ROYAL-CREST GOLF CLUB	00498	ISW	Irr GC	0.180	Withdr Cap	0.162	Coef-90%
LORAIN	ROYAL OAKS GOLF CLUB	01805	ISW	Irr GC	0.300	Withdr Cap	0.270	Coef-90%
LORAIN	SPRING VALLEY COUNTRY CLUB	01851	ISW	Irr GC	0.500	Withdr Cap	0.450	Coef-90%

County	FacilityID	RegNo	Src.Type	Use.Cat.	Wthdr Bslin-MGD	Wthdr Basis	CU Bslin-MGD	CU Basis
LORAIN	STEIN-SLAG MAN	02097	ISW	Ind Prc	0.140	Wthdr Cap	0.014	Coefr-10%
LORAIN	SWEETBRIAR GOLF CLUB	01271	ISW	Irr GC	3.816	Wthdr Cap	3.434	Coefr-90%
LORAIN	US STEEL-LORAIN PIPE MILLS	02107	ISW	Ind Prc	1.400	Wthdr Cap	0.140	Coefr-10%
LORAIN	WELLINGTON VILLAGE	00280	ISW	PWS	5.971	Wthdr Cap-UG	0.896	Coefr-15%
LORAIN	WHITE HOUSE ARTESIAN SPRINGS	00662	GW	BtldW	0.283	Wthdr Cap	0.226	Coefr-80%
LORAIN	WILLOWAY NURSERIES AVON 1-CENTER RD	02014	ISW	Irr Agr	6.630	Wthdr Cap	5.967	Coefr-90%
LORAIN	WILLOWAY NURSERIES AVON 2-LONG RD	02042a	ISW	Irr Agr	10.080	Wthdr Cap	9.072	Coefr-90%
LORAIN	WILLOWAY NURSERIES AVON 2-SCHMETZER FAR	02042b	ISW	Irr Agr	0.360	Wthdr Cap	0.324	Coefr-90%
LUCAS	BAYPARK COMMUNITY HOSPITAL	02110	ISW & GW	Irr Oth	0.445	Wthdr Cap	0.401	Coefr-90%
LUCAS	BETTINGER FARMS-BARNES	01302a	GW	Irr Agr	1.296	Wthdr Cap	1.166	Coefr-90%
LUCAS	BETTINGER FARMS-BUSTERS	01302b	GW	Irr Agr	1.152	Wthdr Cap	1.037	Coefr-90%
LUCAS	BETTINGER FARMS-GLENS	01302c	GW	Irr Agr	1.296	Wthdr Cap	1.166	Coefr-90%
LUCAS	BETTINGER FARMS-MAIN	01302d	GW	Irr Agr	1.440	Wthdr Cap	1.296	Coefr-90%
LUCAS	BETTINGER FARMS-SR 295	01302e	GW	Irr Agr	1.440	Wthdr Cap	1.296	Coefr-90%
LUCAS	BP HUSKY REFINING	00292	LE & GW	Ind Prc	73.612	Wthdr Cap	7.361	Coefr-10%
LUCAS	BRANDYWINE COUNTRY CLUB	00328	ISW	Irr GC	0.600	Wthdr Cap	0.540	Coefr-90%
LUCAS	DANA CORP-TOLEDO	00439	GW	Irr Oth	0.245	Wthdr Cap	0.221	Coefr-90%
LUCAS	DENNIS TOPSOIL & LANDSCAPING	01646	ISW & GW	Irr Agr	0.860	Wthdr Cap	0.774	Coefr-90%
LUCAS	DETWILER GOLF COURSE	00844	ISW & GW	Irr GC	1.040	Wthdr Cap	0.936	Coefr-90%
LUCAS	EAGLES LANDING GOLF CLUB	01953	GW	Irr GC	0.720	Wthdr Cap	0.648	Coefr-90%
LUCAS	ENVIROSAFE SERVICES OF OHIO	01681	GW	Dwtr	1.240	Wthdr Cap	0.000	NonConsUse
LUCAS	FE-BAYSHORE ELECTRIC GENERATING STATION	00619	ISW	EleGen OT	810.000	Wthdr Cap	8.100	Coefr-1%
LUCAS	HANSON AGGREGATES-SYLVANIA	00974	GW	QDwtr/Ind NCU	9.510	Wthdr Cap	0.000	NonConsUse
LUCAS	HANSON AGGREGATES-WATERVILLE	00975	GW	QDwtr/Ind NCU	7.100	Wthdr Cap	0.000	NonConsUse
LUCAS	HEATHER DOWNS COUNTRY CLUB	00637	ISW & GW	Irr GC	1.420	Wthdr Cap	1.278	Coefr-90%
LUCAS	HIGHLAND MEADOWS GOLF COURSE	00357	ISW	Irr GC	0.504	Wthdr Cap	0.454	Coefr-90%
LUCAS	INVERNESS CLUB	01638	GW	Irr GC	1.580	Wthdr Cap	1.422	Coefr-90%
LUCAS	ISAAC LUDWIG MILL	01317	ISW	Mill	130.000	Wthdr Cap	0.000	NonConsUse
LUCAS	MAPLEVIEW FARMS-FULTON TWP	00294a	GW	Irr Agr	0.864	Wthdr Cap	0.778	Coefr-90%
LUCAS	MAPLEVIEW FARMS-HARDING TWP	00294b	GW	Irr Agr	1.440	Wthdr Cap	1.296	Coefr-90%
LUCAS	MAPLEVIEW FARMS-SWANTON TWP	00294c	GW	Irr Agr	2.880	Wthdr Cap	2.592	Coefr-90%
LUCAS	MAUMEE BAY GOLF COURSE	02252	ISW	Irr GC	2.000	Wthdr Cap	1.800	Coefr-90%
LUCAS	MEDICAL COLLEGE OF OHIO-TOLEDO	01276	GW	Irr Oth	0.704	Wthdr Cap	0.634	Coefr-90%
LUCAS	OREGON CITY	00013	LE	PWS	17.600	Trmt Cap	2.640	Coefr-15%
LUCAS	OTTAWA PARK GOLF COURSE	01377	GW	Irr GC	1.224	Wthdr Cap	1.102	Coefr-90%
LUCAS	RENO BEACH-HOWARD FARMS CD	00671	ISW	FldCntr	8.400	Wthdr Cap	0.000	NonConsUse
LUCAS	SOUTH TOLEDO GOLF CLUB	00133	GW	Irr GC	0.869	Wthdr Cap	0.782	Coefr-80%

County	FacilityID	RegNo	Src Type	Use_Cat	Withdr.BsIn-MGD	Withdr.Basis	CU BsIn-MGD	CU Basis
LUCAS	SPARTAN CHEMICAL COMPANY	01891	GW	Irr Oth	0.140	Withdr Cap	0.126	Coeff-90%
LUCAS	STONE OAK COUNTRY CLUB	01069	ISW	Irr GC	0.910	Withdr Cap	0.819	Coeff-90%
LUCAS	STONECO-MAUMEE	00856	GW	QDwtr/Ind NCU	10.940	Withdr Cap	0.000	NonConsUse
LUCAS	SWANTON VILLAGE	00323	ISW & GW	PWS	1.896	Withdr Cap-UG	0.284	Coeff-15%
LUCAS	SYLVANIA COUNTRY CLUB	00691	GW	Irr GC	1.272	Withdr Cap	1.144	Coeff-90%
LUCAS	SYLVANIA PACESETTER PARK	01934	GW	DustCntr	0.500	Withdr Cap	0.400	Coeff-80%
LUCAS	TOLEDO CITY	00376	LE	PWS	199.100	Trtmt Cap	28.865	Coeff-15%
LUCAS	TOLEDO COUNTRY CLUB	00189	GW	Irr GC	0.576	Withdr Cap	0.518	Coeff-90%
LUCAS	VALLEYWOOD GOLF CLUB	00739	GW	Irr GC	1.656	Withdr Cap	1.490	Coeff-90%
MARION	TRI COUNTY LIMESTONE COMPANY	00457	GW	QDwtr/Ind NCU	5.400	Withdr Cap	0.000	NonConsUse
MEDINA	BRUNSWICK HILLS GOLF COURSE	01669	ISW	Irr GC	4.320	Withdr Cap	3.888	Coeff-90%
MEDINA	BUNKER HILL GOLF COURSE	02264	ISW	Irr GC	1.872	Withdr Cap	1.685	Coeff-90%
MEDINA	CHEROKEE HILLS GOLF COURSE	01501	ISW	Irr GC	0.200	Withdr Cap	0.180	Coeff-90%
MEDINA	HINCKLEY HILLS GOLF COURSE	00100	ISW & GW	Irr GC	1.100	Withdr Cap	0.990	Coeff-90%
MEDINA	IRONWOOD GOLF COURSE-HINCKLEY	00874	ISW	Irr GC	0.750	Withdr Cap	0.675	Coeff-90%
MEDINA	LODI VILLAGE	00873	GW	PWS	1.485	Trtmt Cap	0.223	Coeff-15%
MEDINA	MEADOW GOLF COURSE	01924	ISW	Irr GC	1.000	Withdr Cap	0.900	Coeff-90%
MEDINA	PINE HILLS GOLF CLUB	00123	ISW	Irr GC	2.952	Withdr Cap	2.657	Coeff-90%
MEDINA	SHALE CREEK GOLF CLUB	02267	ISW	Irr GC	0.576	Withdr Cap	0.518	Coeff-90%
MEDINA	SKYLAND GOLF COURSE	01270	ISW	Irr GC	0.468	Withdr Cap	0.421	Coeff-90%
MEDINA	WEYMOUTH VALLEY COUNTRY CLUB	01508	ISW	Irr GC	1.368	Withdr Cap	1.231	Coeff-90%
MEDINA	WIERS FARM-LODI	01292	ISW	Irr Agr	1.580	Withdr Cap	1.422	Coeff-90%
MERCER	FOX'S DEN GOLF CLUB	01863	ISW & GW	Irr GC	2.290	Withdr Cap	2.061	Coeff-90%
MERCER	MENDON VILLAGE	00130	GW	PWS	0.348	Trtmt Cap	0.052	Coeff-15%
MERCER	ROCKFORD VILLAGE	00563	GW	PWS	0.528	Trtmt Cap	0.079	Coeff-15%
MERCER	STONECO-ROCKFORD	00850	GW	QDwtr/Ind NCU	5.040	Withdr Cap	0.000	NonConsUse
OTTAWA	BAY POINT GOLF COURSE	01363	LE	Irr GC	0.300	Withdr Cap	0.270	Coeff-90%
OTTAWA	BRUSH WELLMAN	00191	ISW & GW	Ind Prc	1.440	Withdr Cap	0.144	Coeff-10%
OTTAWA	CARROLL WATER & SEWER DISTRICT	02217	LE	PWS	2.200	Trtmt Cap	0.330	Coeff-15%
OTTAWA	CATAWBA WILLOWS GOLF COURSE	01150	ISW	Irr GC	1.260	Withdr Cap	1.134	Coeff-90%
OTTAWA	DAVID BENCH FARMS	01599	GW	Irr Agr	0.580	Withdr Cap	0.522	Coeff-90%
OTTAWA	ELMORE VILLAGE	00015	GW	PWS	0.285	Trtmt Cap	0.043	Coeff-15%
OTTAWA	ERIE PROVING GROUNDS	02242	LE	C&I	1.720	Withdr Cap	0.258	Coeff-15%
OTTAWA	FE-DAVIS BESSE NUCLEAR POWER STATION	00898	LE	EleGen CC	80.000	Withdr Cap	8.000	Coeff-10%
OTTAWA	GRAYMONT DOLIME OHIO	00436	GW	QDwtr/Ind NCU	4.752	Withdr Cap	0.000	NonConsUse
OTTAWA	LAFARGE-MARBLEHEAD	00825	LE & ISW & GW	QDwtr/Ind NCU	42.460	Withdr Cap	0.000	NonConsUse
OTTAWA	LITTLE PORTAGE WILDLIFE AREA	00759	ISW	WIAug	6.480	Withdr Cap	5.184	Coeff-90%

County	FacilityID	RegNo	SrcType	Use Cat	Withdr Bsn-MGD	Withdr Basis	CU Bsn-MGD	CJ Basis
OTTAWA	MAGEE MARSH WILDLIFE AREA	00767	LE	WIAug	32.000	Withdr Cap	25.600	Coef-80%
OTTAWA	MARBLEHEAD VILLAGE	01048	LE	PWS	0.576	Withdr Cap	0.086	Coef-15%
OTTAWA	OAK HARBOR GOLF CLUB	02262	ISW	Irr GC	0.288	Withdr Cap	0.259	Coef-90%
OTTAWA	OTTAWA COUNTY REGIONAL WATER SYSTEM	00037	LE	PWS	9.900	Trtmt Cap	1.485	Coef-15%
OTTAWA	PUT-IN-BAY VILLAGE	01499	LE	PWS	0.473	Trtmt Cap	0.071	Coef-15%
OTTAWA	STONECO-ROCKY RIDGE	00957	GW	QDwtr/Ind NCU	5.190	Withdr Cap	0.000	NonConsUse
OTTAWA	SUGAR CREEK GOLF COURSE	02261	ISW	Irr GC	0.432	Withdr Cap	0.399	Coef-90%
OTTAWA	TOUSSAINT WILDLIFE AREA	00760	ISW	WIAug	9.360	Withdr Cap	7.488	Coef-80%
OTTAWA	WHITE ROCK QUARRY	00840	GW	QDwtr/Ind NCU	11.660	Withdr Cap	0.000	NonConsUse
OTTAWA	WITTS ORCHARDS-RUSHA CREEK	01349	ISW	Irr Agr	1.000	Withdr Cap	0.900	Coef-90%
OTTAWA	WITTS ORCHARDS-TOUSSAINT RIVER	01360	ISW	Irr Agr	0.720	Withdr Cap	0.648	Coef-90%
PAULDING	ANTWERP VILLAGE	00272	GW	PWS	0.745	Trtmt Cap	0.112	Coef-15%
PAULDING	LAFARGE-PAULDING	00700	ISW & GW	Ind Prc-94/C&f-6	1.272	Withdr Cap	0.131	Coef-10.3%
PAULDING	OAKWOOD VILLAGE	00634	GW	PWS-75/Ind P-25	0.415	Withdr Cap	0.057	Coef-13.8%
PAULDING	PAULDING VILLAGE	00631	ISW	PWS	3.202	Withdr Cap-UG	0.480	Coef-15%
PAULDING	PAYNE VILLAGE	00108	GW	PWS	0.315	Trtmt Cap	0.047	Coef-15%
PAULDING	STONECO-AUGLAIZE	00959	GW	QDwtr/Ind NCU	7.780	Withdr Cap	0.000	NonConsUse
PAULDING	US ROUTE 24 CONSTRUCTION-PAULDING	02223	GW	Ind Prc	0.276	Withdr Cap	0.028	Coef-10%
PORTAGE	AKRON CITY	00362	ISW	PWS	73.700	Trtmt Cap	11.055	Coef-15%
PORTAGE	AURORA COUNTRY CLUB	01648	ISW	Irr GC	0.300	Withdr Cap	0.270	Coef-90%
PORTAGE	BALLENTINE SAND & GRAVEL	01458	GW	Ind NCU	0.290	Withdr Cap	0.000	NonConsUse
PORTAGE	BARRINGTON GOLF CLUB	01837	ISW & GW	Irr GC	3.990	Withdr Cap	3.591	Coef-90%
PORTAGE	BECK SAND & GRAVEL	01037	ISW & GW	Ind NCU	9.050	Withdr Cap	0.000	NonConsUse
PORTAGE	BEECHWOOD ISLAND ESTATES	01540	GW	PWS	0.010	Withdr Cap	0.002	Coef-15%
PORTAGE	BIRCHWOOD MANOR	00495	GW	PWS	0.145	Trtmt Cap	0.022	Coef-15%
PORTAGE	FAIRLANE WATER COMPANY	01712	GW	PWS	0.048	Trtmt Cap	0.007	Coef-15%
PORTAGE	GOLF WORLD ENTERPRISES	01602	GW	Irr GC	0.310	Withdr Cap	0.279	Coef-90%
PORTAGE	GOODYEAR-WINGFOOT LAKE AIRSHIP OPS	00625	GW	C&I	0.250	Withdr Cap	0.038	Coef-15%
PORTAGE	HUGO SAND COMPANY	01404	ISW & GW	Ind NCU	1.335	Withdr Cap	0.000	NonConsUse
PORTAGE	KENT CITY	00406	GW	PWS	6.432	Withdr Cap	0.965	Coef-15%
PORTAGE	KENT CITY-WATERFALL	02122	ISW	Wtrfl	18.600	Withdr Cap	0.000	NonConsUse
PORTAGE	KENT STATE UNIVERSITY GOLF COURSE	01634	GW	Irr GC	0.720	Withdr Cap	0.648	Coef-90%
PORTAGE	LAFARGE-SHALERSVILLE	00821	ISW & GW	Ind Prc	9.114	Withdr Cap	0.911	Coef-10%
PORTAGE	MANTUA VILLAGE	01468	GW	PWS	1.100	Trtmt Cap	0.165	Coef-15%
PORTAGE	MAPLECREST GOLF COURSE	00131	GW	Irr GC	1.100	Withdr Cap	0.990	Coef-90%
PORTAGE	OAK KNOLLS GOLF COURSE	00883	ISW	Irr GC	0.980	Withdr Cap	0.882	Coef-90%
PORTAGE	OMNOVA SOLUTIONS-PERFORMANCE CHEMICAL	01818	GW	Ind Prc	1.840	Withdr Cap	0.184	Coef-10%

County	Facility/D	RegNo	Src.Type	Use.Cat	Wfndr.Bsr-MGD	Wfndr.Basis	CU.Bsr-MGD	CU.Basis
PORTAGE	OSCAR BRUGMANN SAND & GRAVEL	02273	ISW & GW	QDwtr/Ind NCU	2.500	Wfndr Cap	0.000	NonConsUse
PORTAGE	PARADISE LAKE COUNTRY CLUB	00443	ISW & GW	Irr GC	0.309	Wfndr Cap	0.270	Coef-90%
PORTAGE	PORTAGE COUNTY-BRIMFIELD	00404	GW	PWS	1.100	Trtmt Cap	0.165	Coef-15%
PORTAGE	PORTAGE COUNTY-SHALERSVILLE	00405	GW	PWS	3.740	Trtmt Cap	0.561	Coef-15%
PORTAGE	R A CRUISE SAND & GRAVEL	01616	ISW & GW	Ind NCU	0.720	Wfndr Cap	0.000	NonConsUse
PORTAGE	RAVENNA CITY-LAKE HODGSON	00442	ISW	PWS	6.600	Trtmt Cap	0.980	Coef-15%
PORTAGE	ROBIN PARK MHP	01579	GW	PWS	0.155	Trtmt Cap	0.023	Coef-15%
PORTAGE	SOLOM SAND & GRAVEL	01612	GW	QDwtr/Ind NCU	0.440	Wfndr Cap	0.000	NonConsUse
PORTAGE	SUNNY HILL GOLF & RECREATION	00633	ISW & GW	Irr GC	2.350	Wfndr Cap	2.115	Coef-90%
PORTAGE	TELEDYNE-PLANT 275	01229	ISW & GW	Ind Prc	4.742	Wfndr Cap	0.474	Coef-10%
PORTAGE	TWINSBURG DEVELOPMENT	02251	GW	QDwtr/Ind NCU	3.600	Wfndr Cap	0.000	NonConsUse
PORTAGE	WALDEN GOLF & TENNIS	01296	ISW	Irr GC	0.580	Wfndr Cap	0.522	Coef-90%
PORTAGE	WINGFOOT LAKE PARK	00624	GW	Irr/BPWS	0.340	Wfndr Cap	0.306	Coef-15%
PUTNAM	COLUMBUS GROVE VILLAGE	00200	GW	PWS	1.309	Trtmt Cap	0.196	Coef-15%
PUTNAM	CONTINENTAL VILLAGE	02076	GW	PWS	0.219	Trtmt Cap	0.033	Coef-15%
PUTNAM	COUNTRY ACRES GOLF CLUB	00611	ISW & GW	Irr GC	1.672	Wfndr Cap	1.505	Coef-90%
PUTNAM	KALIDA VILLAGE	00327	GW	PWS	0.429	Trtmt Cap	0.064	Coef-15%
PUTNAM	LEIPSIC VILLAGE	00792	GW	PWS	1.430	Trtmt Cap	0.215	Coef-15%
PUTNAM	LEIPSIC VILLAGE-YELLOW CREEK	02173	ISW	Ind Prc	3.611	Wfndr Cap-UG	0.361	Coef-10%
PUTNAM	NATIONAL LIME & STONE-RIMER	02172	GW	QDwtr/Ind NCU	2.000	Wfndr Cap	0.000	NonConsUse
PUTNAM	NIESE & MAAAG-GENES	02239	ISW	Irr Agr	0.648	Wfndr Cap	0.583	Coef-90%
PUTNAM	NIESE & MAAAG-MARKS	02238	ISW	Irr Agr	0.648	Wfndr Cap	0.583	Coef-90%
PUTNAM	NIESE & MAAAG-NIESE	02233	GW	Irr Agr	0.432	Wfndr Cap	0.389	Coef-90%
PUTNAM	NIESE & MAAAG-OREN	02236	ISW	Irr Agr	0.648	Wfndr Cap	0.583	Coef-90%
PUTNAM	NIESE & MAAAG-PECK	02237	ISW	Irr Agr	0.648	Wfndr Cap	0.583	Coef-90%
PUTNAM	NIESE & MAAAG-SUTER	02232	GW	Irr Agr	0.432	Wfndr Cap	0.389	Coef-90%
PUTNAM	NIESE & MAAAG-SUTTER	02235	GW	Irr Agr	0.288	Wfndr Cap	0.259	Coef-90%
PUTNAM	OTTAWA VILLAGE	00099	ISW	PWS	4.160	Wfndr Cap-UG	0.624	Coef-15%
PUTNAM	OTTOVILLE VILLAGE	00489	GW	PWS	0.238	Trtmt Cap	0.036	Coef-15%
PUTNAM	PANDORA VILLAGE	01012	GW	PWS	0.317	Trtmt Cap	0.048	Coef-15%
PUTNAM	PIKE RUN GOLF CLUB	02199	ISW & GW	Irr GC	1.311	Wfndr Cap	1.180	Coef-90%
PUTNAM	PUTNAM STONE COMPANY	00429	ISW & GW	QDwtr/Ind NCU	2.416	Wfndr Cap	0.000	NonConsUse
RICHLAND	OAWC-WALCREST	02214	GW	PWS	0.013	Trtmt Cap	0.002	Coef-15%
SANDUSKY	CARMEUSE LIME-MILLERSVILLE	00688	GW	QDwtr/Ind NCU	3.340	Wfndr Cap	0.000	NonConsUse
SANDUSKY	CARMEUSE LIME-WOODVILLE	00689	GW	QDwtr/Ind NCU	26.870	Wfndr Cap	0.000	NonConsUse
SANDUSKY	CLYDE CITY	00298	ISW	PWS	5.846	Wfndr Cap-UG	0.876	Coef-15%
SANDUSKY	FREMONT CITY	00361	ISW	PWS	15.400	Trtmt Cap	2.310	Coef-15%

County	FacilityID	RegNo	Spc Type	Use Cat	Wthdr Bsit-MGD	Wthdr Basis	CU Balm-MGD	CU Basis
SANDUSKY	GIBSONBURG VILLAGE	00612	GW	PWS	0.682	Trtmt Cap	0.102	Coef-15%
SANDUSKY	HIDDEN HILLS GOLF CLUB	01631	ISW & GW	Irr GC	1.650	Wthdr Cap	1.485	Coef-90%
SANDUSKY	HOWARD SACHS FARMS-CR 201	01590a	GW	Irr Agr	1.075	Wthdr Cap	0.988	Coef-90%
SANDUSKY	HOWARD SACHS FARMS-SMITH RD	01590b	GW	Irr Agr	0.460	Wthdr Cap	0.414	Coef-90%
SANDUSKY	LINDSEY VILLAGE	01211	GW	PWS	0.237	Trtmt Cap	0.036	Coef-15%
SANDUSKY	MRTN MRTTA MAGNESIA SPECIALTIES-PLANT	01017a	GW	Ind Prc	1.488	Wthdr Cap	0.149	Coef-10%
SANDUSKY	MRTN MRTTA MAGNESIA SPECIALTIES-QUARRY	01017b	GW	QDwtr/Ind NCU	8.640	Wthdr Cap	0.000	NonConsUse
SANDUSKY	PICKERAL CREEK WILDLIFE AREA	00758	ISW & GW	WIAug	66.820	Wthdr Cap	53.456	Coef-80%
SANDUSKY	SANDUSKY COUNTY-SHOREWOOD VILLAGE	00927	GW	PWS	0.134	Trtmt Cap	0.020	Coef-15%
SANDUSKY	SLEEPY HOLLOW GOLF COURSE	00265	GW	Irr GC	1.230	Wthdr Cap	1.107	Coef-90%
SANDUSKY	STYLE CREST MANUFACTURING	01720	GW	Ind Prc	0.900	Wthdr Cap	0.090	Coef-10%
SANDUSKY	SYCAMORE HILLS GOLF COURSE-FREMONT	01462	ISW & GW	Irr GC	1.435	Wthdr Cap	1.292	Coef-90%
SANDUSKY	VICKERY INTERNATIONAL-VICKERY	01209	GW	Ind Prc	0.360	Wthdr Cap	0.036	Coef-10%
SANDUSKY	WAYNE DUCK FARM	00970	GW	Lvs	1.800	Wthdr Cap	1.440	Coef-80%
SANDUSKY	WOODVILLE VILLAGE	00972	GW	PWS	0.687	Trtmt Cap	0.103	Coef-15%
SENECA	ATTICA VILLAGE	00028	ISW	PWS	0.774	Wthdr Cap-UG	0.116	Coef-15%
SENECA	BARB & DICK'S BERRY FARM	00290	GW	Irr Agr	0.216	Wthdr Cap	0.194	Coef-90%
SENECA	BETTSVILLE VILLAGE	01001	GW	PWS	0.317	Trtmt Cap	0.048	Coef-15%
SENECA	BLOOMVILLE VILLAGE	00051	GW	PWS	0.317	Trtmt Cap	0.048	Coef-15%
SENECA	CARMEUSE LIME-MAPLE GROVE	00887	GW	QDwtr/Ind NCU	3.490	Wthdr Cap	0.000	NonConsUse
SENECA	CHURCH & DWIGHT COMPANY	02230	GW	Ind Prc	0.920	Wthdr Cap	0.092	Coef-10%
SENECA	CLINTON HEIGHTS GOLF COURSE	01708	ISW	Irr GC	0.150	Wthdr Cap	0.135	Coef-90%
SENECA	FLAT ROCK CARE CENTER	00395	GW	C&I	0.151	Wthdr Cap	0.023	Coef-15%
SENECA	HANSON AGGREGATES-BLOOMVILLE	00979	GW	QDwtr/Ind NCU	5.115	Wthdr Cap	0.000	NonConsUse
SENECA	HANSON AGGREGATES-FLAT ROCK	00977	GW	QDwtr/Ind NCU	1.356	Wthdr Cap	0.000	NonConsUse
SENECA	HONEYWELL INTERNATIONAL	01328	GW	Ind Prc-63/MQR-37	0.720	Wthdr Cap	0.099	Coef-13.7%
SENECA	LOUDON MEADOWS GOLF COURSE	00610	GW	Irr GC	0.450	Wthdr Cap	0.405	Coef-90%
SENECA	MOHAWK GOLF CLUB	00831	ISW & GW	Irr GC	0.575	Wthdr Cap	0.518	Coef-90%
SENECA	NATIONAL MACHINERY COMPANY	01039	GW	Ind Prc	0.288	Wthdr Cap	0.029	Coef-10%
SENECA	NATURE TRAILS GOLF COURSE	01356	GW	Irr GC	0.241	Wthdr Cap	0.217	Coef-90%
SENECA	OAWC-TIFFIN	00606	ISW & GW	PWS	3.773	Trtmt Cap	0.566	Coef-15%
SENECA	ROPPE CORP	01332	GW	Ind Prc	0.600	Wthdr Cap	0.060	Coef-10%
SENECA	SENECA HILLS GOLF COURSE	01351	ISW	Irr GC	0.269	Wthdr Cap	0.242	Coef-90%
SENECA	STEYER FARM	00621	ISW	Irr Agr	1.008	Wthdr Cap	0.907	Coef-90%
SHELBY	THE WAY INTERNATIONAL	01166	GW	C&I	0.501	Trtmt Cap	0.075	Coef-15%
STARK	CONGRESS LAKE COUNTRY CLUB-FISH PONDS	01267a	GW	Lvs	0.370	Wthdr Cap	0.296	Coef-80%
STARK	CONGRESS LAKE COUNTRY CLUB-IRRIGATION	01267b	ISW	Irr GC	2.620	Wthdr Cap	2.358	Coef-90%

County	FacilityID	RegNo	Src.Type	Use.Cat	Withdr.Bsln-MGD	Withdr.Basis	CU Bsln-MGD	CU Basis
STARK	HARTVILLE VILLAGE	05000	GW	C&I	0.172	Withdr Cap	0.026	Coeff-15%
STARK	KW ZELLERS & SON FARMS-DUQUETTE	01116a	GW	Irr Agr	0.778	Withdr Cap	0.700	Coeff-90%
STARK	KW ZELLERS & SON FARMS-PINEDALE	01116b	GW	Irr Agr	1.000	Withdr Cap	0.900	Coeff-90%
SUMMIT	BROOKLEDGE GOLF CLUB	00701	ISW & GW	Irr GC	0.777	Withdr Cap	0.699	Coeff-90%
SUMMIT	COUNTRY CLUB OF HUDSON	01912	ISW & GW	Irr GC	2.650	Withdr Cap	2.385	Coeff-90%
SUMMIT	CUYAHOGA FALLS CITY	00499	GW	PWS-93/Ind P-7	28.220	Withdr Cap	4.148	Coeff-14.7%
SUMMIT	EDWIN SHAW HOSPITAL	01459	GW	C&I	0.490	Withdr Cap	0.074	Coeff-15%
SUMMIT	ELLSWORTH MEADOWS GOLF COURSE	02111	ISW & GW	Irr GC	0.519	Withdr Cap	0.467	Coeff-90%
SUMMIT	FOX DEN FAIRWAYS	00864	GW	Irr GC	0.777	Withdr Cap	0.699	Coeff-90%
SUMMIT	GLEN EAGLES GOLF CLUB	01303	ISW	Irr GC	1.107	Withdr Cap	0.996	Coeff-90%
SUMMIT	HARWICK STANDARD DISTRIBUTION	01795	GW	Ind Prc	0.500	Withdr Cap	0.050	Coeff-10%
SUMMIT	HUDSON CITY	00152	GW	PWS	2.460	Trtmt Cap	0.369	Coeff-15%
SUMMIT	LAKE FOREST COUNTRY CLUB	00919	ISW	Irr GC	1.440	Withdr Cap	1.296	Coeff-90%
SUMMIT	LAKEMORE VILLAGE	02245	GW	PWS	0.825	Trtmt Cap	0.124	Coeff-15%
SUMMIT	LEISURE TIME-IRRIGATION	00674a	ISW & GW	Irr GC	0.552	Withdr Cap	0.497	Coeff-90%
SUMMIT	LEISURE TIME-POOL	00674b	GW	Rec	0.026	Withdr Cap	0.021	Coeff-80%
SUMMIT	MAPLEWOOD MHP	01153	GW	PWS	0.103	Trtmt Cap	0.015	Coeff-15%
SUMMIT	OE-GORGE ELECTRIC GENERATING STATION	00717	ISW	EleGen OT	140.000	Withdr Cap	1.400	Coeff-1%
SUMMIT	RIVERWOODS GOLF COURSE	02268	ISW	Irr GC	0.080	Withdr Cap	0.072	Coeff-90%
SUMMIT	ROSES RUN COUNTRY CLUB	01971	ISW	Irr GC	0.800	Withdr Cap	0.720	Coeff-90%
SUMMIT	SILVER LAKE COUNTRY CLUB	00724	GW	Irr GC	1.440	Withdr Cap	1.296	Coeff-90%
SUMMIT	SYCAMORE VALLEY GOLF COURSE	01675	ISW	Irr GC	0.640	Withdr Cap	0.576	Coeff-90%
TRUMBULL	FOREST OAKS GOLF CLUB	00987	ISW & GW	Irr GC	1.064	Withdr Cap	0.958	Coeff-90%
TRUMBULL	WEST FARMINGTON VILLAGE	00009	ISW	PWS	0.219	Withdr Cap-UG	0.033	Coeff-15%
VAN WERT	CONVOY VILLAGE	00981	GW	PWS	0.427	Trtmt Cap	0.064	Coeff-15%
VAN WERT	COOPER FARMS COOKED MEATS	02117	GW	Ind Prc	0.705	Withdr Cap	0.071	Coeff-10%
VAN WERT	DELPHOS CITY PWS-WELLFIELDS	00240-41	GW	BPWS	1.942	Withdr Cap	0.291	Coeff-15%
VAN WERT	DELPHOS CITY-UG RES	02169	ISW	PWS	6.127	Withdr Cap-UG	0.919	Coeff-15%
VAN WERT	MIDDLE POINT VILLAGE	01259	GW	PWS	0.127	Trtmt Cap	0.019	Coeff-15%
VAN WERT	NATIONAL LIME & STONE-DELPHOS	01455	GW	QDwtr/Ind NCU	1.536	Withdr Cap	0.000	NonConsUse
VAN WERT	OHIO CITY VILLAGE	00502	GW	PWS	0.748	Trtmt Cap	0.112	Coeff-15%
VAN WERT	RIDGE TOWNSHIP QUARRY	01348	GW	QDwtr/Ind NCU	1.152	Withdr Cap	0.000	NonConsUse
VAN WERT	STONECO-SCOTT	00958	GW	QDwtr/Ind NCU	3.890	Withdr Cap	0.000	NonConsUse
VAN WERT	THE WOODS GOLF CLUB	00989	ISW & GW	Irr GC	1.470	Withdr Cap	1.323	Coeff-90%
VAN WERT	VAN WERT CITY	00333	ISW & GW	PWS	10.797	Withdr Cap-UG	1.619	Coeff-15%
VAN WERT	WILLSHIRE VILLAGE	00184	GW	PWS	0.083	Trtmt Cap	0.012	Coeff-15%
WILLIAMS	AQUA OHIO-NORLICK	01341	GW	PWS	0.206	Trtmt Cap	0.031	Coeff-15%

County	FacilityID	RegNo	SrcType	UseCat	Withdr Bsin:MGD	Withdr Basis	CU Bsin:MGD	CU Basis
WILLIAMS	AQUA OHIO-SENECA	00839	GW	PWS	0.238	Trtmt Cap	0.036	Coefr-15%
WILLIAMS	BRIDGEWATER DAIRY	01992	GW	Lvs-70/Ind P-30	1.500	Withdr Cap	0.885	Coefr-59.0%
WILLIAMS	BRYAN CITY	00899	GW	PWS	5.566	Trtmt Cap	0.835	Coefr-15%
WILLIAMS	BUEHRER FARMS-EAST	01283	ISW	Irr Agr	0.342	Withdr Cap	0.308	Coefr-90%
WILLIAMS	BUEHRER FARMS-WEST	01290	ISW	Irr Agr	0.342	Withdr Cap	0.308	Coefr-90%
WILLIAMS	CENTER CONCRETE	00727	GW	Ind Prc	0.100	Withdr Cap	0.010	Coefr-10%
WILLIAMS	CHASE BRASS & COPPER	00737	GW	Ind Prc-71/C&I-29	1.152	Withdr Cap	0.132	Coefr-11.5%
WILLIAMS	DIETSCH'S GRAIN FARM-IRRIGATION	02093	GW	Irr Agr	2.364	Withdr Cap	2.128	Coefr-90%
WILLIAMS	EDGERTON VILLAGE	01342	GW	PWS-67/Ind P-33	1.512	Withdr Cap	0.202	Coefr-13.4%
WILLIAMS	EDON VILLAGE	01095	GW	PWS	0.285	Trtmt Cap	0.043	Coefr-15%
WILLIAMS	HILLSIDE COUNTRY LIVING	01828	GW	C&I	0.330	Withdr Cap	0.050	Coefr-15%
WILLIAMS	MENARD INC	02263	GW	Ind Prc	0.222	Withdr Cap	0.022	Coefr-10%
WILLIAMS	MONTPELIER VILLAGE	00030	GW	PWS-66/Ind P-34	3.038	Withdr Cap	0.404	Coefr-13.3%
WILLIAMS	ORCHARD HILLS COUNTRY CLUB	01260	ISW & GW	Irr GC	1.695	Withdr Cap	1.526	Coefr-90%
WILLIAMS	PIONEER VILLAGE	00312	GW	PWS-65/Ind P-35	1.296	Withdr Cap	0.172	Coefr-13.3%
WILLIAMS	RIVERSIDE GREENS	02265	ISW & GW	Irr GC	1.584	Withdr Cap	1.426	Coefr-90%
WILLIAMS	SPANGLER CANDY COMPANY	00681	GW	Ind Prc	0.389	Withdr Cap	0.039	Coefr-10%
WILLIAMS	STRYKER VILLAGE	00880	GW	PWS	0.475	Trtmt Cap	0.071	Coefr-15%
WILLIAMS	SUBRAN GOLF	01007	ISW & GW	Irr GC	0.187	Withdr Cap	0.168	Coefr-90%
WILLIAMS	WEST UNITY VILLAGE	00860	GW	PWS-80/Ind P-20	1.520	Withdr Cap	0.227	Coefr-14.0%
WILLIAMS	WINDWOOD HOLLOW GOLF COURSE	01437	ISW & GW	Irr GC	0.160	Withdr Cap	0.144	Coefr-90%
WOOD	BELMONT COUNTRY CLUB	00951	ISW & GW	Irr GC	2.586	Withdr Cap	2.327	Coefr-90%
WOOD	BIRCH RUN GOLF CLUB	00256	GW	Irr GC	0.200	Withdr Cap	0.180	Coefr-90%
WOOD	BLOOMDALE VILLAGE	00117	GW	PWS	0.066	Trtmt Cap	0.010	Coefr-15%
WOOD	BOWLING GREEN CITY	00251	ISW	PWS	14.444	Withdr Cap-UG	2.167	Coefr-15%
WOOD	BRADNER VILLAGE	00594	GW	PWS	0.528	Trtmt Cap	0.079	Coefr-15%
WOOD	CARDINAL AGGEGATE	02259	GW	QDwt/Ind NCU	2.880	Withdr Cap	0.000	NonConsUse
WOOD	CARL DIERKSHEIDE FARMS	00667	GW	Irr Agr	0.518	Withdr Cap	0.466	Coefr-90%
WOOD	CUSTAR STONE COMPANY-CUSTAR	00973	GW	QDwt/Ind NCU	2.592	Withdr Cap	0.000	NonConsUse
WOOD	DAVID APPLE FARM	01593	GW	Irr Agr	1.008	Withdr Cap	0.907	Coefr-90%
WOOD	GRAND RAPIDS VILLAGE	01362	ISW	BPWS	1.575	Withdr Cap	0.236	Coefr-15%
WOOD	HESS FARM	01592	ISW & GW	Irr Agr	0.340	Withdr Cap	0.306	Coefr-90%
WOOD	NORTH BALTIMORE VILLAGE	01022	ISW	PWS	3.225	Withdr Cap-UG	0.483	Coefr-15%
WOOD	NORTH BRANCH NURSERY	00445	ISW	Irr Agr	4.360	Withdr Cap	3.915	Coefr-90%
WOOD	O T & E W SHAFFER	01583	GW	Irr Agr	0.290	Withdr Cap	0.261	Coefr-90%
WOOD	OSU OARDC NW BRANCH	00704	GW	Irr.Oth-83/Lvs-17	0.700	Withdr Cap	0.616	Coefr-88%
WOOD	PEMBERVILLE VILLAGE	00620	GW	PWS	0.550	Trtmt Cap	0.083	Coefr-15%

County	FacilityID	RegNo	Src Type	Use Cat	Withdr Bsin-MGD	Withdr Basis	CU Bsin-MGD	CU Basis
WOOD	RIVERBY HILLS GOLF COURSE	00173	ISW	Irr GC	0.400	Withdr Cap	0.360	Coeff-90%
WOOD	STONECO-LIME CITY	00954	GW	QDwtr/Ind NCU	5.040	Withdr Cap	0.000	NonConsUse
WOOD	STONECO-PORTAGE	00955	GW	QDwtr/Ind NCU	4.200	Withdr Cap	0.000	NonConsUse
WOOD	STONERIDGE GOLF CLUB	02022	ISW & GW	Irr GC	1.061	Withdr Cap	0.955	Coeff-90%
WOOD	TANGLEWOOD GOLF CLUB-PERRYSBURG	01534	ISW & GW	Irr GC	1.890	Withdr Cap	1.701	Coeff-90%
WOOD	WAGNER FARMS-WAYNE	01911	GW	Irr Agr	0.220	Withdr Cap	0.198	Coeff-90%
WOOD	WAYNE VILLAGE	00566	GW	PWS	0.180	Withdr Cap	0.027	Coeff-15%
WOOD	WEST MILGROVE QUARRY	02247	GW	QDwtr/Ind NCU	1.580	Withdr Cap	0.000	NonConsUse
WYANDOT	CAREY VILLAGE	00050	GW	PWS-40/Ind P-60	2.260	Withdr Cap	0.271	Coeff-12.0%
WYANDOT	HICKORY GROVE GOLF CLUB	00901	ISW & GW	Irr GC	0.350	Withdr Cap	0.315	Coeff-90%
WYANDOT	KIEFFER, IRVEN	00987	ISW	Irr Agr	0.750	Withdr Cap	0.675	Coeff-90%
WYANDOT	KILLDEER PLAINS UPGROUND RES	01306	ISW	W/Aug	8.309	Withdr Cap-UG	6.647	Coeff-80%
WYANDOT	NATIONAL LIME & STONE-CAREY	01077	GW	QDwtr/Ind NCU	7.708	Withdr Cap	0.000	NonConsUse
WYANDOT	NEVADA VILLAGE	00603	GW	PWS	0.220	Trtmt Cap	0.033	Coeff-15%
WYANDOT	OHIO FRESH EGGS-MARSEILLES	02007	GW	Lvs-70/CI-20/WQR-1	0.590	Withdr Cap	0.360	Coeff-61.0%
WYANDOT	STONE CROSSING GOLF CLUB	00875	GW	Irr GC	0.600	Withdr Cap	0.540	Coeff-90%
WYANDOT	SYCAMORE VILLAGE	00509	GW	PWS	0.190	Trtmt Cap	0.029	Coeff-15%
WYANDOT	THE OLEN COPORATION PLANT 6	02270	GW	QDwtr/Ind NCU	40.100	Withdr Cap	0.000	NonConsUse
WYANDOT	UPPER SANDUSKY CITY	00122	ISW	PWS	4.255	Withdr Cap-UG	0.638	Coeff-15%
WYANDOT	WYANDOT DOLOMITE	00699	GW	QDwtr/Ind NCU	8.780	Withdr Cap	0.000	NonConsUse

County	Diversion	Withdrawal	Use/Cat	Dyrs/Bsln-MGD	Dyrd Basis	Cnsmd OB-MGD	Cnsmd Basis	Rtrnd-MGD	Rtrnd Basis
Ashland	Rural Lorain Ccoounty Water Authority	Avon Lake City	PWS	0.2 Approval Amount	0.2 Approval Amount	0	100% Cnsmd/Dschrgd OB	0	NA
Medina	Medina County	Avon Lake City	PWS	0.1 Approval Amount	0.1 Approval Amount	0	100% Cnsmd/Dschrgd OB	0	NA
Medina	Medina City	Avon Lake City	PWS	1.12 Approval Amount	0.168	0.168	Coefficient	0.952	Coefficient
Auglaize	Minster Village	Minster Village	PWS	0.7 Approval Amount	0.7	0.7	100% Cnsmd/Dschrgd OB	0	NA
Summit	Akron City	Akron City	PWS	21.333 Approval Amount	3.201	3.201	Coefficient	18.132	Coefficient
Summit	Fairlawn City	Akron City	PWS	1.477 Approval Amount	0.222	0.222	Coefficient	1.255	Coefficient
Summit	Copley/Coventry/Springfield Twps	Akron City	PWS	4.8 Approval Amount	0	0	Cnsmd Wtr Rplcd byODNR	4.8	Condition of Approval
Portage	OTC-Service Plaza MP-197	Portage County-Shalersville	PWS	0.1 Approval Amount	0.1	0.1	100% Cnsmd/Dschrgd OB	0	NA
Portage	Ravenna City-Outside WWSA	Ravenna City	PWS	0.12 Approval Amount	0.12	0.12	100% Cnsmd/Dschrgd OB	0	NA
Portage	Ravenna City-Inside WWSA	Ravenna City	PWS	2.382 Approval Amount	0.357	0.357	Coefficient	2.025	Coefficient
Auglaize	Saint Marys City	Saint Marys City	PWS	0.408 Approval Amount	0.061	0.061	Coefficient	0.347	Coefficient
Medina	I-71 Exit 204 Area	Lodi Village	PWS	0.1 Approval Amount	0.1	0.1	100% Cnsmd/Dschrgd OB	0	NA
Crawford	Bucyrus City	Bucyrus City	PWS	1.432 Approval Amount	0.215	0.215	Coefficient	1.217	Coefficient
Summit	Lakemore Village	Lakemore Village	PWS	0.033 Approval Amount	0.005	0.005	Coefficient	0.028	Coefficient
Stark	Hartville Village	Hartville Village	PWS	0.146 Approval Amount	0.146	0.146	100% Cnsmd/Dschrgd OB	0	NA

## Appendix D

### **BASIN-WIDE WATER CONSERVATION & EFFICIENCY OBJECTIVES adopted in Resolution 5 by the Great Lakes-St. Lawrence River Basin Water Resources Council on December 8, 2008**

#### **-Guide programs toward long-term sustainable water use.**

- Use adaptive programs that are goal-based, accountable and measurable.
- Develop and implement programs openly and collaboratively, including with local stakeholders, Tribes and First Nations, governments and the public.
- Prepare and maintain long-term water demand forecasts.
- Develop long-term strategies that incorporate water conservation and efficient water use.
- Review and build upon existing planning efforts by considering practices and experiences from other jurisdictions.

#### **-Adopt and implement supply and demand management to promote efficient use and conservation of water resources.**

- Maximize water use efficiency and minimize waste of water.
- Promote appropriate innovative technology for water reuse.
- Conserve and manage existing water supplies to prevent or delay the demand for and development of additional supplies.
- Provide incentives to encourage efficient water use and conservation.
- Include water conservation and efficiency in the review of proposed new or increased uses.
- Promote investment in and maintenance of efficient water infrastructure and green infrastructure.

#### **-Improve monitoring and standardize data reporting among State and Provincial water conservation and efficiency programs.**

- Improve the measurement and evaluation of water conservation and water use efficiency.
- Encourage measures to monitor, account for, and minimize water loss.
- Track and report program progress and effectiveness.

#### **-Develop science, technology and research.**

- Encourage the identification and sharing of innovative management practices and state of the art technologies.
- Encourage research, development and implementation of water use and efficiency and water conservation technologies.
- Seek a greater understanding of traditional knowledge and practices of Basin First Nations and Tribes.
- Strengthen scientific understanding of the linkages between water conservation practices and ecological responses.

#### **-Develop education programs and information sharing for all water users.**

- Ensure equitable public access to water conservation and efficiency tools and information.
- Inform, educate and increase awareness regarding water use, conservation and efficiency and the importance of water. Promote the cost-saving aspect of water conservation and efficiency for both short-term and long-term economic sustainability.

- Share conservation and efficiency experiences, including successes and lessons learned across the Basin.
- Enhance and contribute to regional information sharing.
- Encourage and increase training opportunities in collaboration with professional or other organizations in order to increase water conservation and efficiency practices and technological applications.
- Ensure that conservation programs are transparent and that information is readily available.
- Aid in the development and dissemination of sector-based best management practices and results achieved.
- Seek opportunities for the sharing of traditional knowledge and practices of Basin First Nations and Tribes.

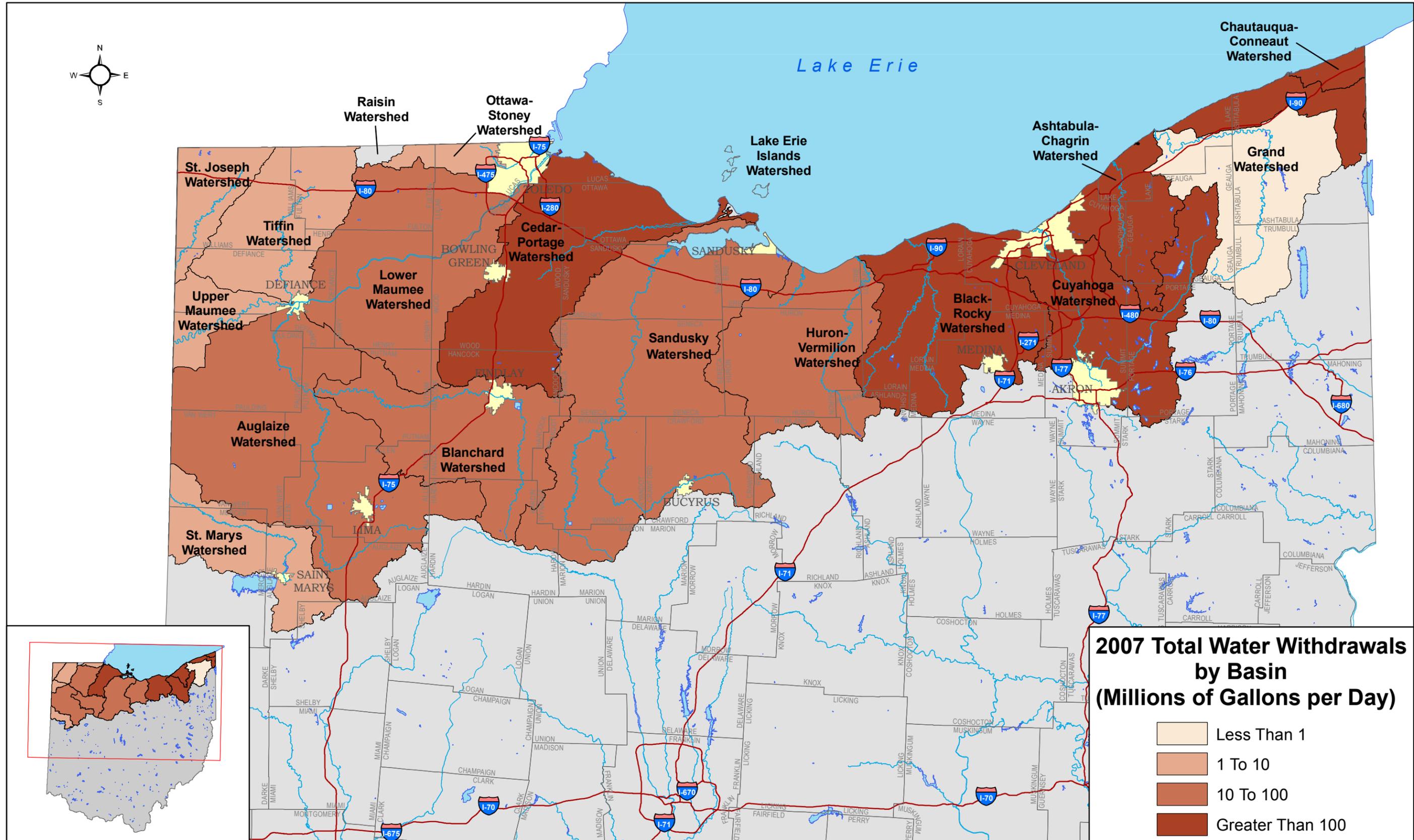
## Appendix E

### Maps

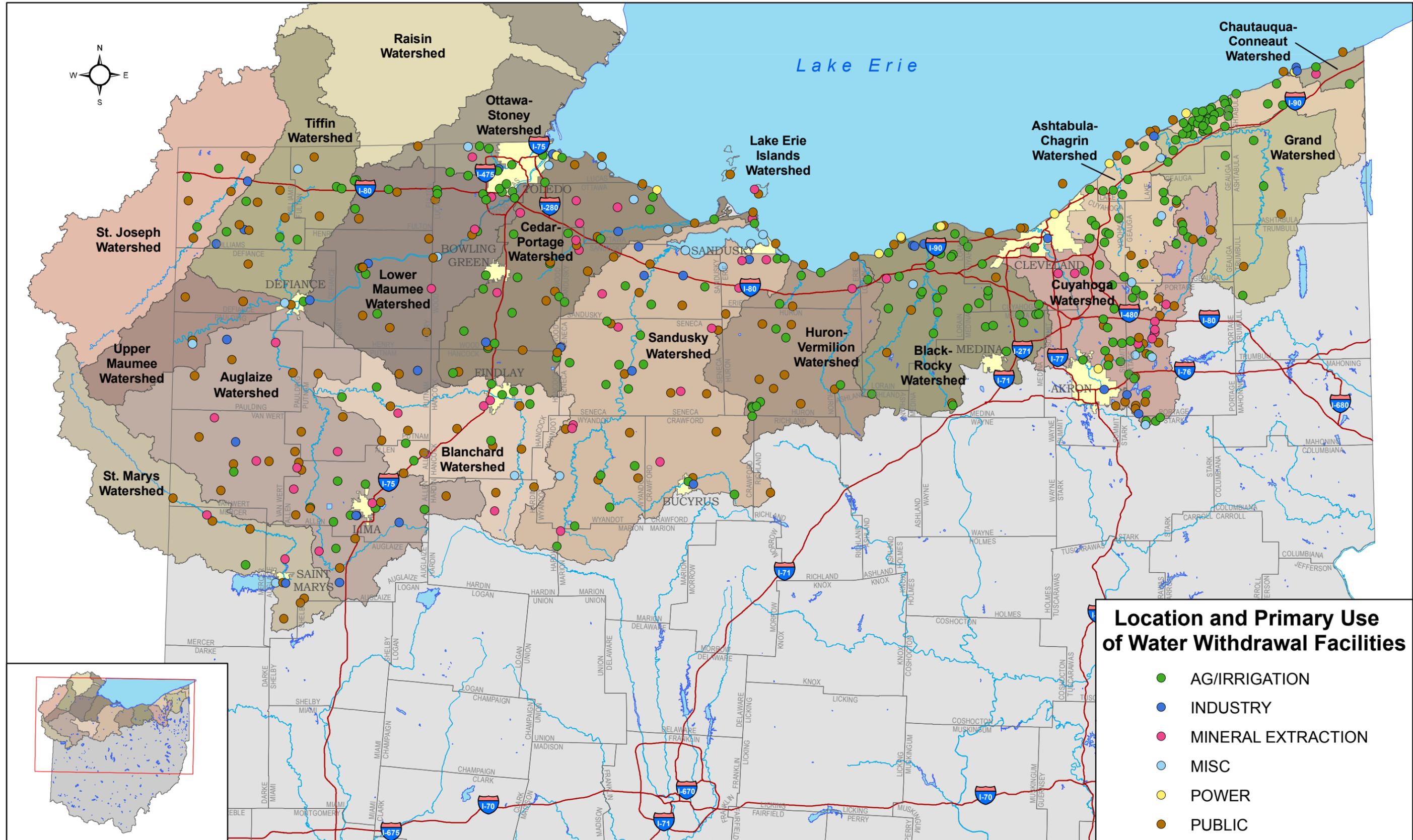
- E1 Lake Erie Watershed
- E2 2007 Rate of Water Withdrawals by Basin
- E3 Location and Primary use of Water Withdrawal Facilities in Lake Erie Basin
- E4 2007 Ground Water Withdrawals
- E5 2007 Surface Water Withdrawals
- E6 Navigation Channels of Major Tributaries
  - i. Ashtabula
  - ii. Cleveland
  - iii. Conneaut
  - iv. Fairport Harbor
  - v. Lorain
  - vi. Toledo



# 2007 Total Water Withdrawals by Basin



# Location and Primary Use of Water Withdrawal Facilities in Lake Erie Basin

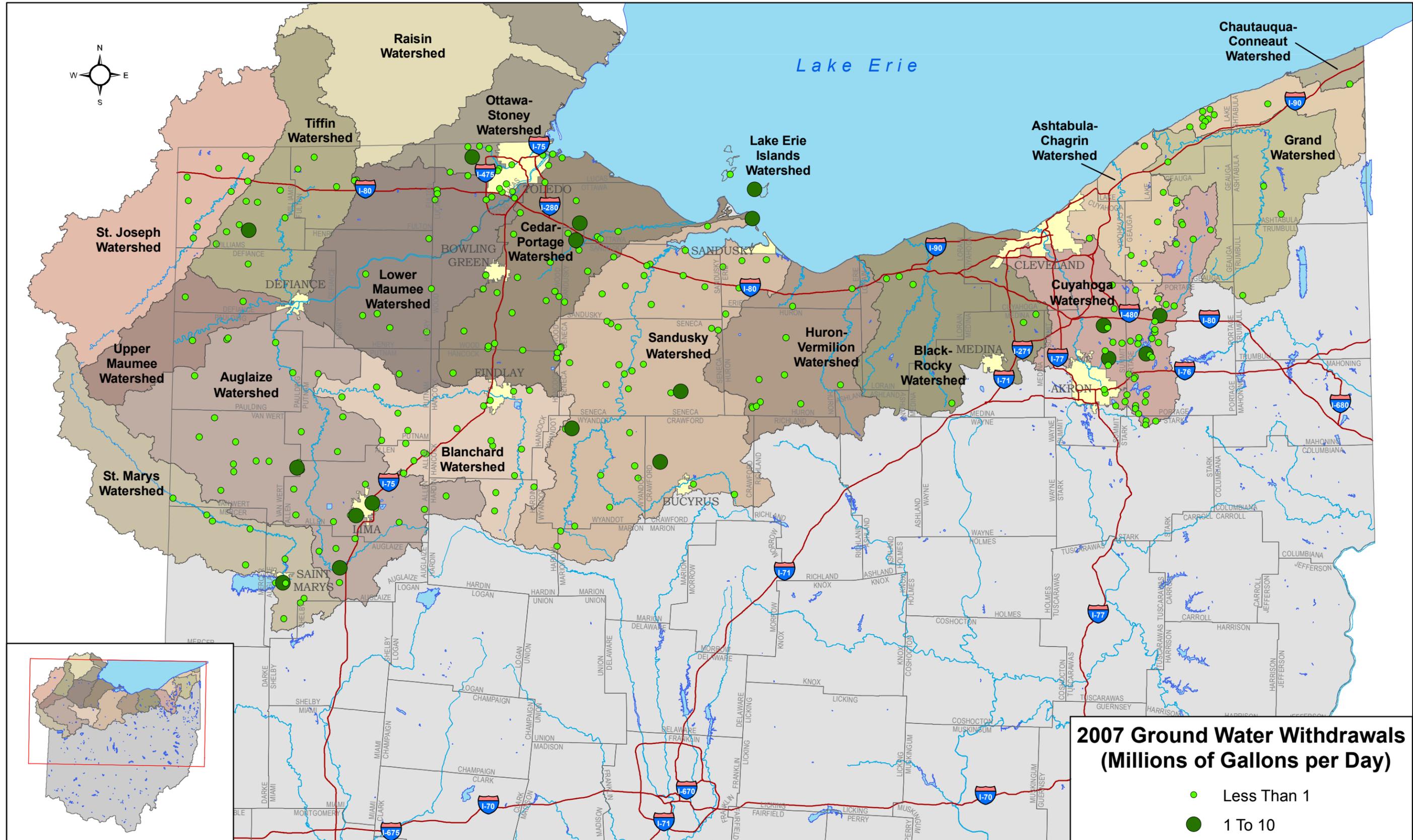


**Location and Primary Use of Water Withdrawal Facilities**

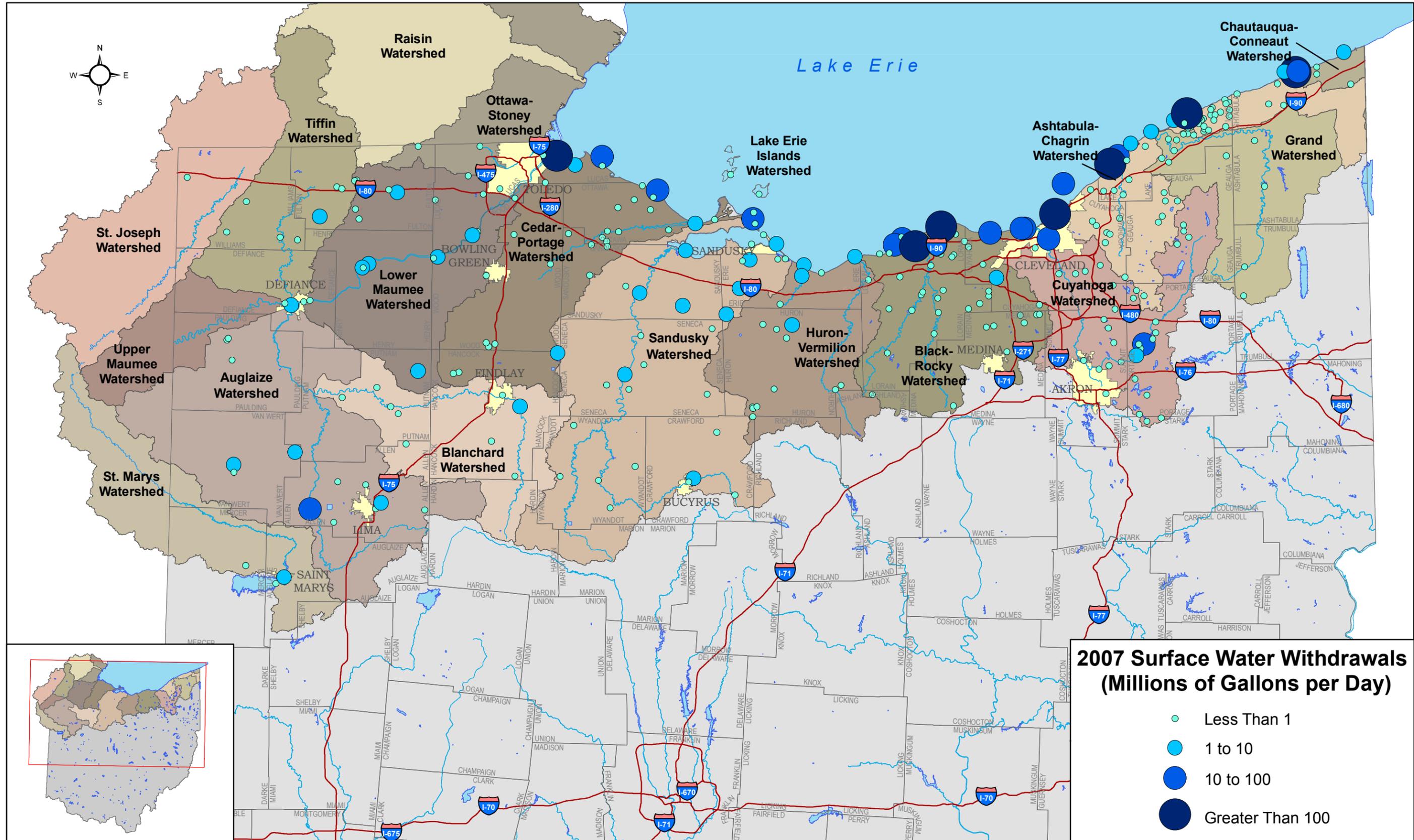
- AG/IRRIGATION
- INDUSTRY
- MINERAL EXTRACTION
- MISC
- POWER
- PUBLIC



# 2007 Ground Water Withdrawals

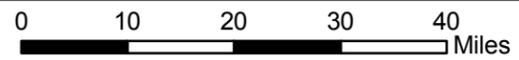
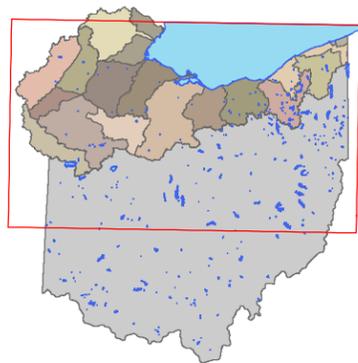


# 2007 Surface Water Withdrawals

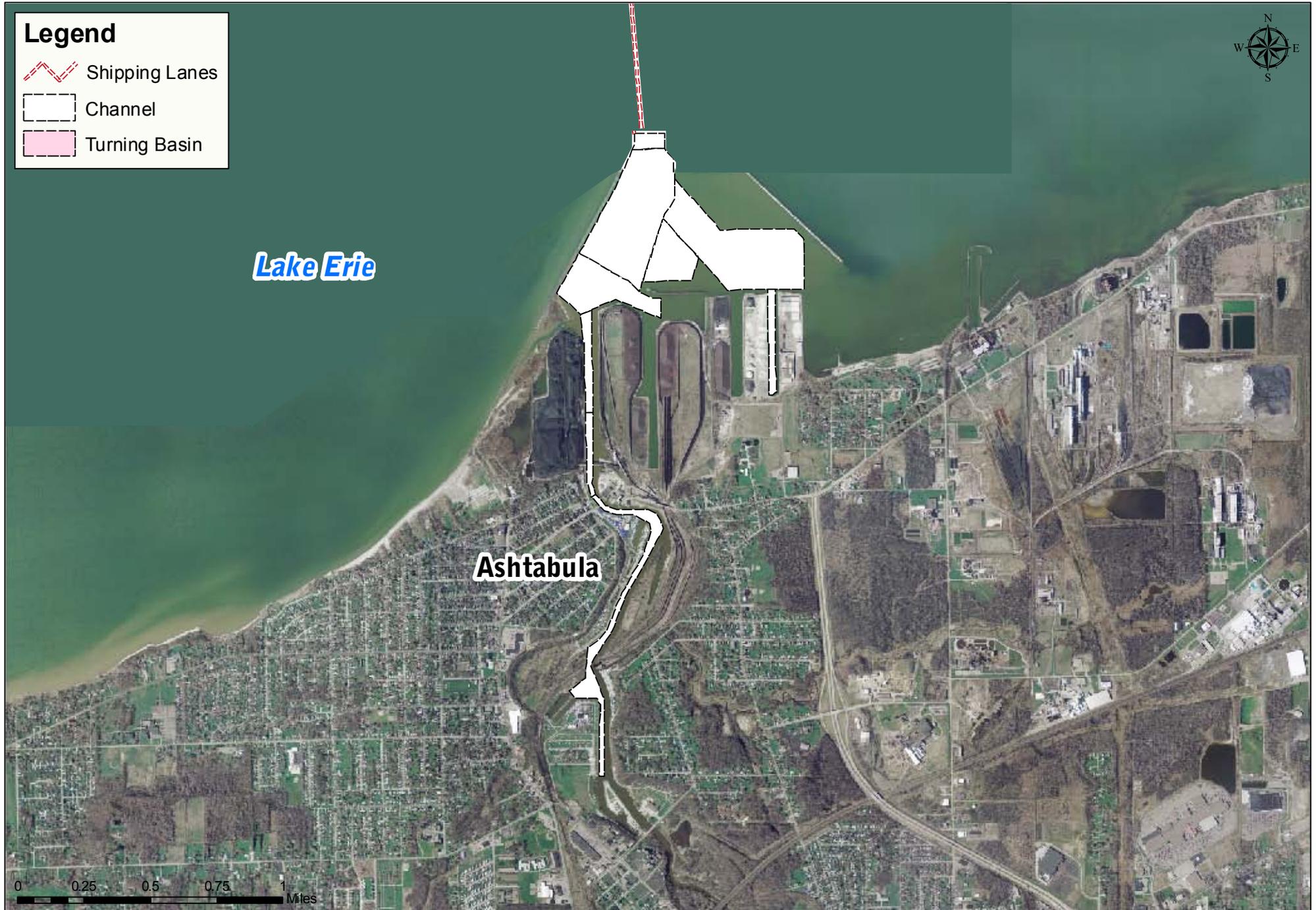


**2007 Surface Water Withdrawals  
(Millions of Gallons per Day)**

- Less Than 1
- 1 to 10
- 10 to 100
- Greater Than 100



# Commercial Shipping Channels - Ashtabula River, Ashtabula



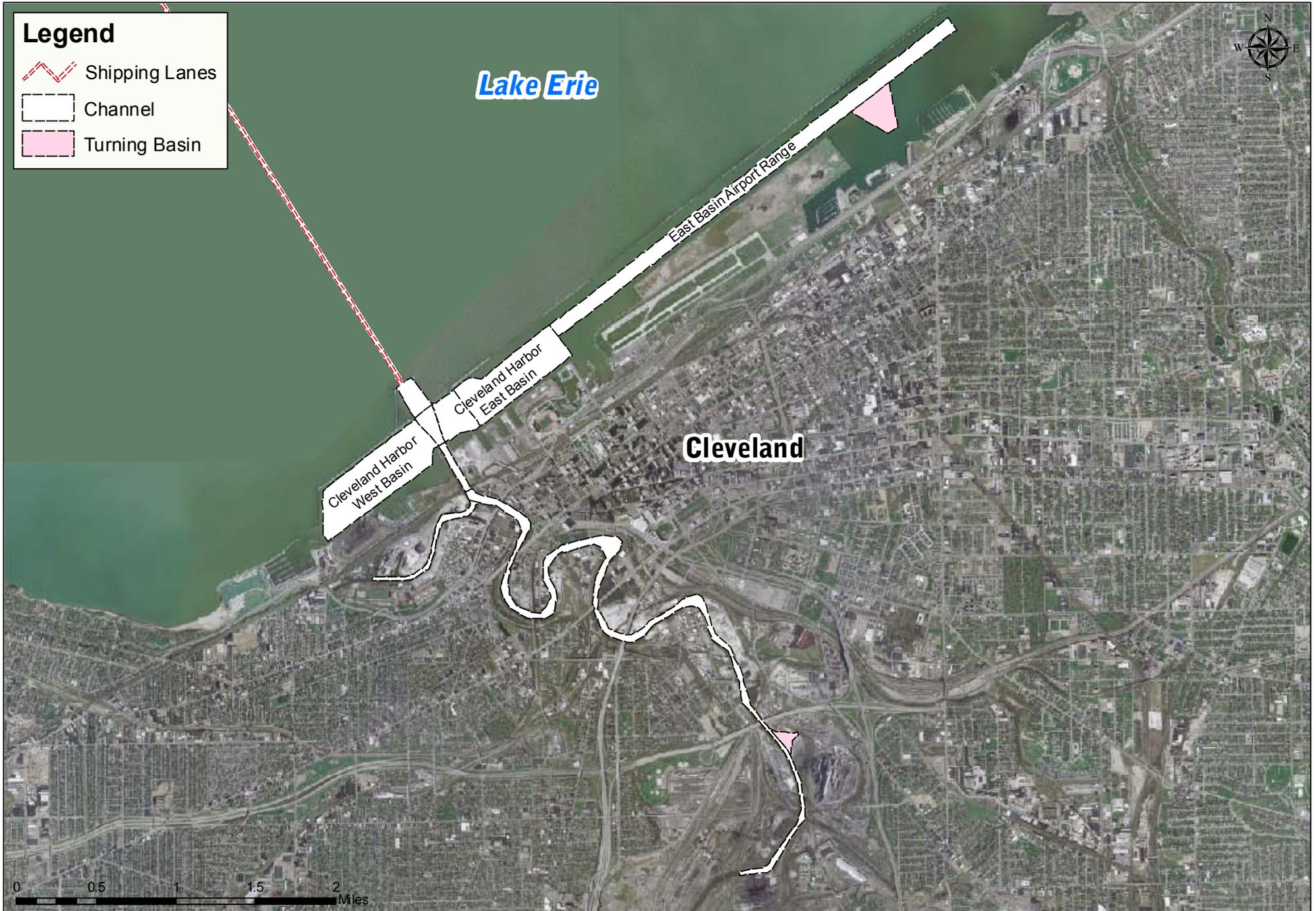
**GIS Data Sources:**

Ohio Statewide Imagery Program - State of Ohio, 2006  
Navigation and Shipping Channels - ODNR OCM, 2007/ digitized from NOAA charts

**Map Prepared by:**

Ohio Department of Natural Resources  
Office of Coastal Management

# Commercial Shipping Channels - Cuyahoga River, Cleveland



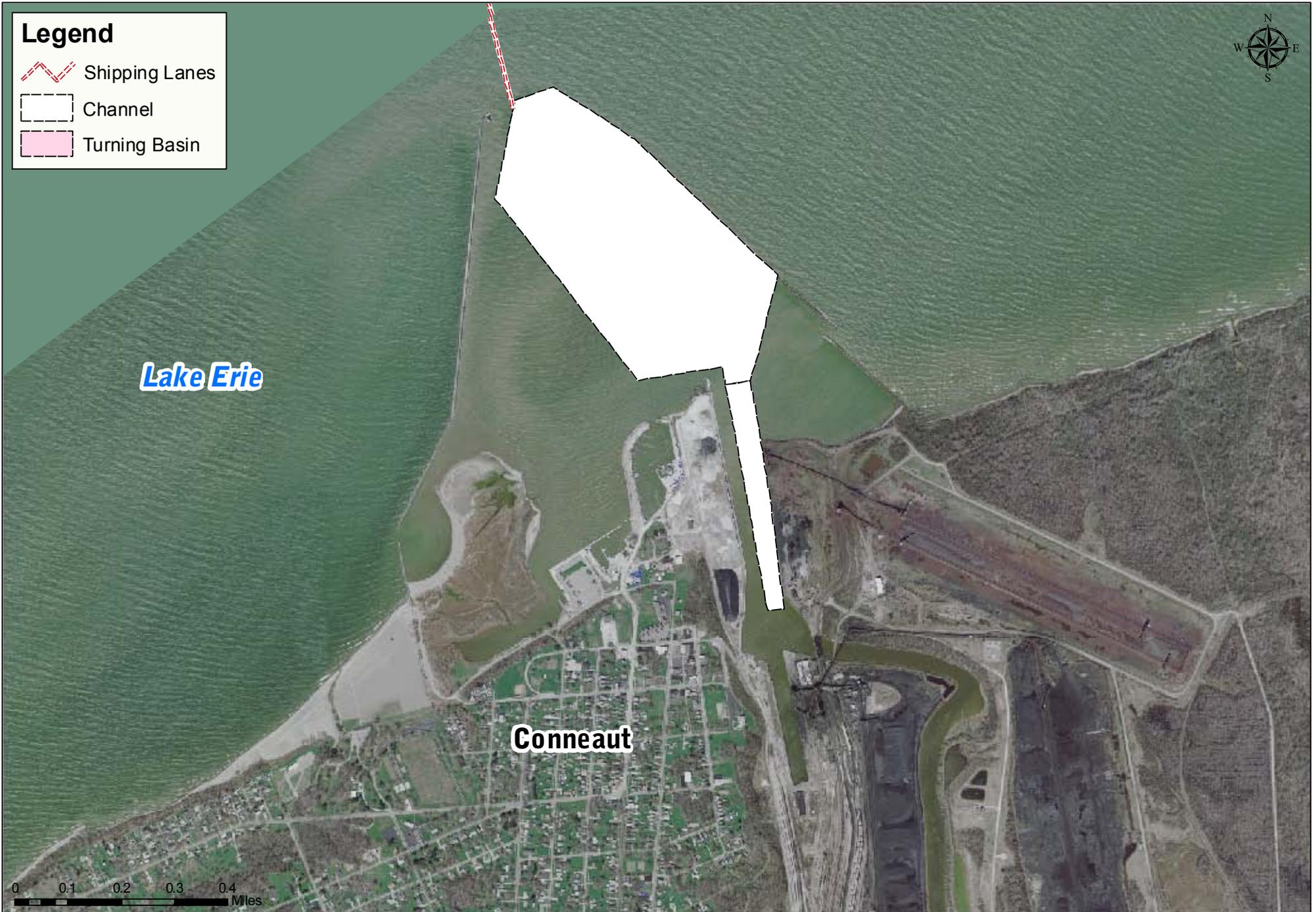
**GIS Data Sources:**

Ohio Statewide Imagery Program - State of Ohio, 2006  
Navigation and Shipping Channels - ODNR OCM, 2007/ digitized from NOAA charts

**Map Prepared by:**

Ohio Department of Natural Resources  
Office of Coastal Management

# Commercial Shipping Channels - Conneaut Creek, Conneaut



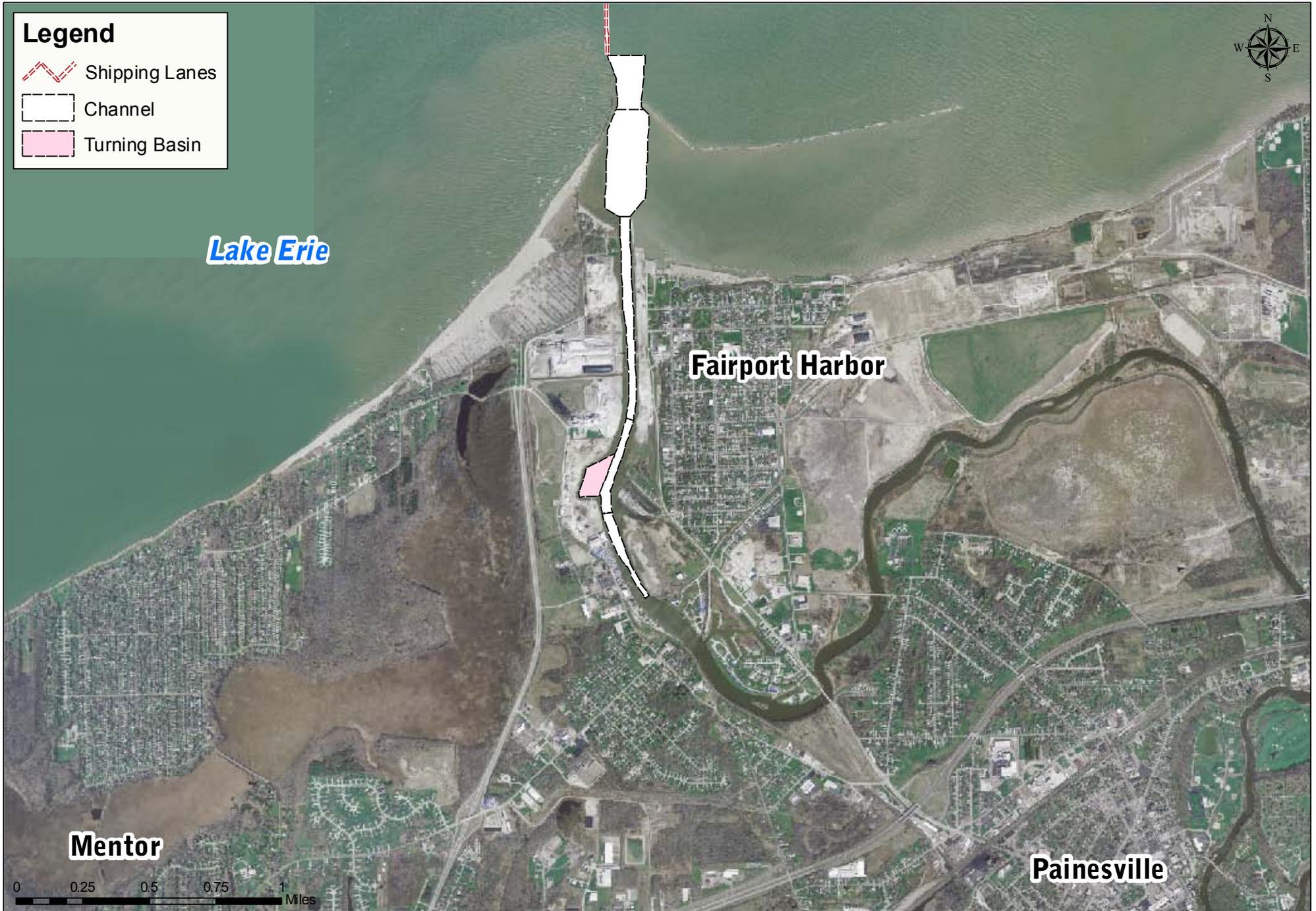
**GIS Data Sources:**

Ohio Statewide Imagery Program - State of Ohio, 2006  
Navigation and Shipping Channels - ODNR OCM, 2007/ digitized from NOAA charts

**Map Prepared by:**

Ohio Department of Natural Resources  
Office of Coastal Management

# Commercial Shipping Channels - Grand River, Fairport Harbor



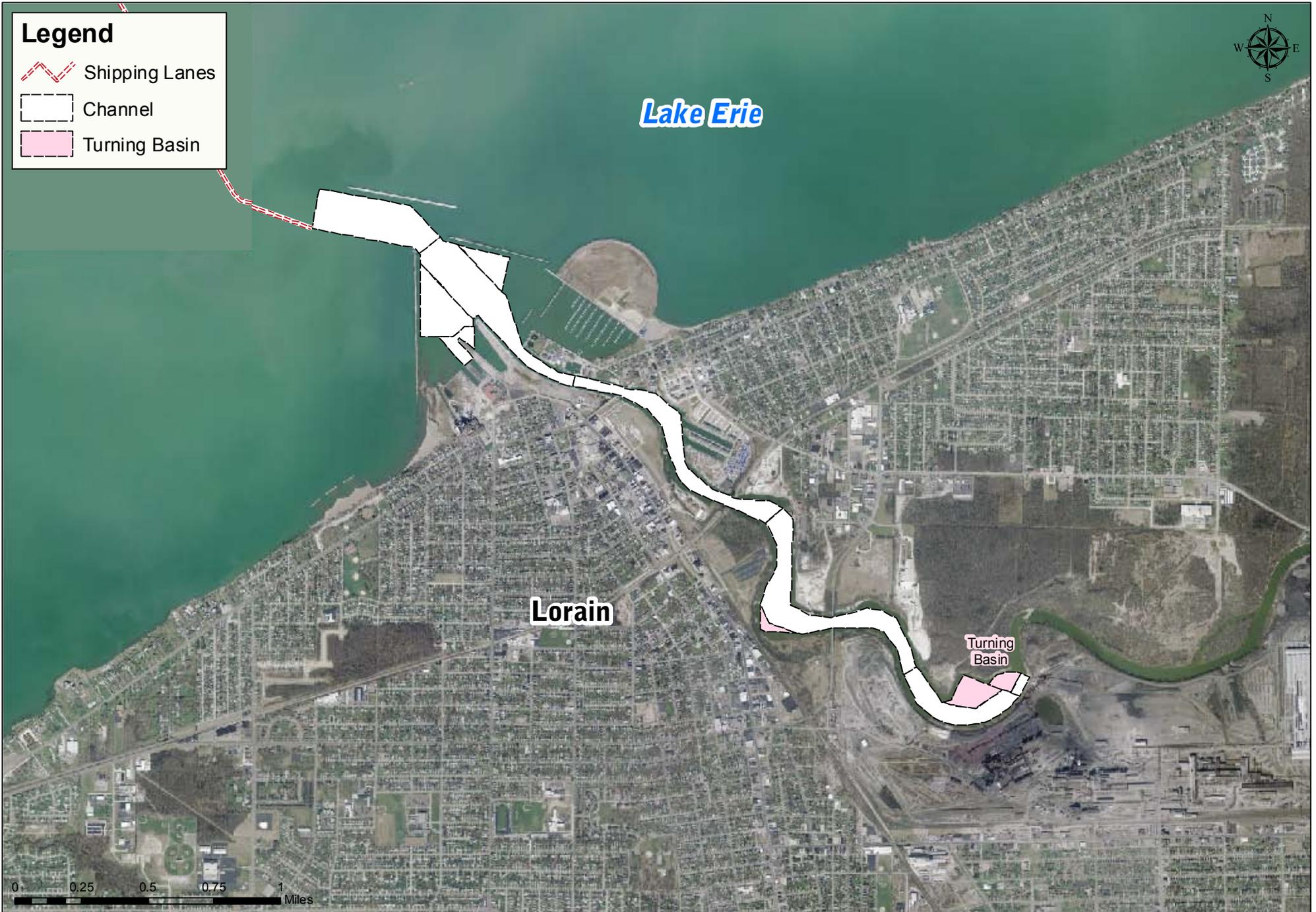
**GIS Data Sources:**

Ohio Statewide Imagery Program - State of Ohio, 2006  
Navigation and Shipping Channels - ODNR OCM, 2007/ digitized from NOAA charts

**Map Prepared by:**

Ohio Department of Natural Resources  
Office of Coastal Management

# Commercial Shipping Channels - Black River, Lorain



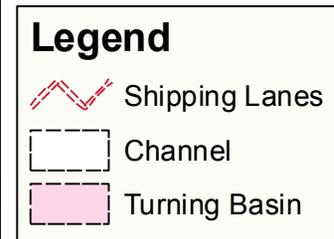
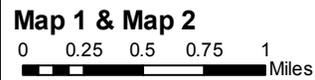
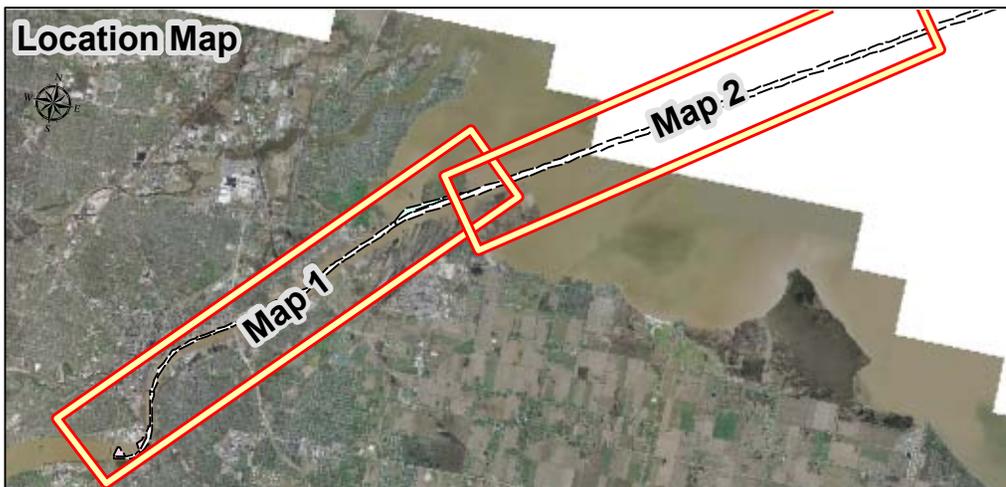
**GIS Data Sources:**

Ohio Statewide Imagery Program - State of Ohio, 2006  
Navigation and Shipping Channels - ODNR OCM, 2007/ digitized from NOAA charts

**Map Prepared by:**

Ohio Department of Natural Resources  
Office of Coastal Management

# Commercial Shipping - Toledo



**Map Prepared by:**  
Ohio Department of Natural Resources  
Office of Coastal Management

**GIS Data Sources:**  
Ohio Statewide Imagery Program - State of Ohio, 2006  
Navigation and Shipping Channels - ODNR OCM, 2007/  
digitized from NOAA charts

## Appendix F

### **Public Comments on Draft Final Report**

- Kent Environmental Council
- Ohio Coastal Resources Management Project
- Sierra Club Members

November 15, 2010

To: Sean Logan, Director of ODNR & Chair of the Ohio Great Lakes Compact Advisory Board  
Fm: Charles Frederick, Chairperson, Kent Environmental Council

Re: Comments on the Draft Report and Recommendations of the Ohio Great Lakes Compact Advisory Board

Kent Environmental Council thanks you and all members of the Advisory Board for a thoughtful review and recommendations on these important Great Lakes issues, essential for the long term sustainable ecosystem health of the watersheds and the people who live here.

Kent Environmental Council (KEC) strongly urges the Advisory Board to specifically include *tributaries* of Lake Erie and all the other Great Lakes in the recommendations for Water Withdrawal legislation (page 15). It is not clear that "inland surface water" includes tributaries to Lake Erie.

In the Kent area, we have seen the visible adverse environmental impacts of large water withdrawals on the upper reaches of the Cuyahoga River in the 1960s and 1970s. At that time the City of Akron withdrew the entire flow of the Cuyahoga River during the hot summer months, about 70 million gallons per day (MGD). Just one mile below Akron's Lake Rockwell dam (public water supply), the historic Kent dam backed up a dam pool of stagnant water that looked like green pea soup all summer. That was a significant adverse environmental impact in the Lake Erie watershed, *miles* above the navigation channel in Cleveland.

Since that time, residential and industrial usage in the Akron area has declined to about 40 MGD. The Ohio Supreme Court settled a lawsuit by requiring that Akron release a minimum daily flow from Rockwell dam, and the City of Kent modified the historic dam, so the Cuyahoga River is now free-flowing in the Kent area. KEC and all residents who participated in cleaning up the river celebrate the attainment of all water quality standards in this area. The Kent State University Crooked River Adventures kayak and canoe livery this summer was a great success, with over 2,000 paddlers enjoying their trips down the river to either Munroe Falls or Cuyahoga Falls, and the services of area businesses.

KEC supports the recommendations for water conservation and efficiency and urges that the most protective, science-based thresholds be established.

Thank you for this opportunity to submit our comments.



Charles Frederick, Chair

Kent Environmental Council

Comments and Recommendations on the Ohio Great Lakes Compact Advisory Board Draft Report *from* Ohio Coastal Resource Management Project

November 19, 2010

**To: Sean Logan, Director of ODNR & Chair of the Ohio Great Lakes Compact Advisory Board**  
**From: Edith Chase, Honorary OCRMP Board Member, Ohio Coastal Resource Management Project**  
**Re: Comments on the Draft Report and Recommendations of the Ohio Great Lakes Compact Advisory Board**

Ohio Coastal Resource Management Project (OCRMP) Board members commend the Ohio Great Lakes Compact Advisory Board for their careful review and recommendations on these water withdrawal, consumptive use and diversion issues that are critical for the protection of Lake Erie and the ecosystem health of all the Great Lakes, their watersheds, and communities.

OCRMP supports the use of the baseline list (pg. 2-8) to determine what constitutes a new or increased withdrawal, consumptive use or diversion. Every proposal for new or increased withdrawal, consumptive use or diversion that is above the threshold must be carefully evaluated, with opportunity for public comment, pursuant to provisions of the Great Lakes Compact and federal and state laws and regulations.

We support the recommendations (pg. 12-13) for a water conservation and efficiency program, information-sharing and water metering as described in the report. We would like to emphasize the importance of in-place water use. We urge the addition of evaluation of water use rate structure in each community. A flat-rate structure would provide significant incentives to reduce water use (rather than charging less per gallon, the more water used). Another option is to add a surcharge during the hot summer months to discourage non-essential uses such as car-washing and lawn-watering. "Continuous improvement" (pg. 12) should specify no backsliding.

It is critical that programs be guided toward long-term sustainable water use (Sec. 2.a), with benefits to residential, commercial and industrial users. Dr. Michael Donahue, then Executive Director of the Great Lakes Commission, pointed out in 1999 the close relationship between water quantity and water quality. The Great Lakes are an intensively used resource, said Donahue, with fluctuating lake levels leading to a plethora of issues associated with dredging needs, water supply and water treatment infrastructure, nearshore water quality, assimilative capacity, and wetlands and habitat.

Urban and suburban sprawl over the last several decades has led to the loss of over 1 million acres of Ohio farmland, as well as most of Ohio's wetlands that filter and store stormwater, an important no- or low-cost ecosystem service. Serious questions must be raised about the effects of impervious surface on groundwater recharge, access to ground and surface water supply, waste disposal requirements and impacts on sources of drinking water, conflicts with established uses, as well as the role of water supply and sewerage infrastructure in exacerbating sprawl. Land use decisions need to be based on water quality/water quantity relationships at the local watershed level.

In view of the droughts of 1988 and 1991, we urge each facility listed to develop a comprehensive plan, with specific measures to increase the efficient use and conservation of water, and how to measure the results. A broad range of alternatives must be considered. The state should evaluate each plan, and provide incentives for implementation in a timely manner. For example, Ohio's Balanced Growth program lists a wide variety of incentives for land use planning.

We agree with a focus on the largest water users first (pg. 12), in a collaborative effort, that includes evaluation of any and all cumulative adverse effects for all water withdrawn. The

definition of significant individual or cumulative adverse impacts must be science-based, and include any action that may be irreversible, or that may interfere with long-term sustainable water use (pg.14). Decisions should be based on stringent water quality standards, using biocriteria and a flow model. We support Michigan's approach to use species loss and flows; for example an acceptable threshold could be 2% of species loss for a high-quality stream and 50% species loss for a limited water quality stream. It is critical to prevent depletion and degradation of the resource, so that industry will be around for 100 years, not 25 years. Additional benefits include reduced costs for drinking water treatment, and added recreational opportunities for the public.

OCRMP has serious concerns regarding the use of the threshold of more than one inch for determining an adverse impact on the lowering of Lake Erie water levels. (pg. 17). Only 1% of the water in the Great Lakes is renewable. We can visualize a shuttle of Asian tankers taking Great Lakes water to Japan, carefully scheduled to keep the decrease in water level to 0.9 inch. If climate changes occur as predicted, the water level in the lakes may fall from increased evaporation. All cumulative adverse impacts must be considered, including downstream impacts such as increased dredging costs, loss of hydropower generation, effects on shorelands, and degradation of water quality.

OCRMP calls for a science-based model for withdrawals from streams and rivers and urges adoption of the most environmentally protective, science-based, sustainable thresholds. Please provide as many opportunities as possible for public comment. Thank you for this opportunity to express our views.

Nov 15, 2010

Sean Logan

Dear Logan,

The Great Lakes Compact has the potential to safeguard our water supply and foster healthy, sustainable and vibrant communities for centuries to come. Ohio's citizens, businesses and environment are entitled access to water and you have the opportunity to ensure a balanced use approach. Please do not squandering this opportunity by pandering to special interest.

The Great Lakes Compact Advisory Board Draft Report fails to set thresholds for water withdrawals in our most sensitive streams. A science-based approach to determine water allowances is the only responsible way to balance water use needs. Do not allow corporate special interest to guide the process of setting thresholds without justification.

The Draft Report recommends that permits for water withdrawals be given for the life of a facility. This recommendation lacks foresight and disregards the changing world we live in. Permits should be reviewed based upon the best available science every 5 years.

The Draft Report is lacking details regarding water conservation and efficiency programs. Please provide a full description of how Ohio will comply with water conservation goals, objectives, and programs by the December 8th deadline established by the Great Lakes Compact.

Please continue to work with stakeholders to develop a complete regulatory program before submitting recommendations to Ohio's legislature. Water is a fundamental part of our communities. We urge you to Protect our water at the source and submit a Final Report that recognizes everyones need for water not just industries.

Sincerely,

**The Ohio Department of Natural Resources received a copy of the preceding letter from each of the following Sierra Club members:**

1

Ardith Wake	Alexandra Hanna	Deborah Stutman-
Edgar Hull	Pamela Tate	Brickey
Rick Anderson	A, Schmitt	Nicole Eppstein
John Beamer	Harold Leahy	Lea Beitenhaus
Monica Brisen	Linda Freemam	Victoria Hennessy
Bette Woolley	Teresa Dozeer	Angela Harmon
Nathan Daniel	Izzy Esler	Carla Edlefson
Gail Steward	Sarah Cercone	Katrina Pearso
Marianne Frusteri	Nicole Friend	Thomas Fry
Amy Kasprzak	Miranda Reason	Louise Esther Riohstein
Kim Whitehead	Jon Martin	Michael Webster
Sheldon Kanfer	George Williams	Mary Bell
Judity Weiss	Peter Schanz	Rodger Baur
John Squeri	Casey Weinstein	Linda Sharp
Wayne Wright	Kevin Crisler	Eric Simpson
Susan Wright	Matt Trokan	Janet Dubas
Nina McLellan	Sibley Arnebeck	Sarah Galmarini
Curt Hofmann	Calvin Cole	Lee Borocz-Johnson
Raymond DiCarlo	Mary Wood Constable	Audrey Hodolic
Dave Simons	Russell Whitley	Val Leonardi
John Hiestand	Chadwick Wright	Rochelle Lazio
Kathi Ridgway	Jonathan Fried	Corah Szerenyi
Scott Steiner	Cheryl Liniman	Noah Hogan
Melinda Chamberlain	Karen Kindel	Brenda Dillane
Constance Irvin	Vivian Austin	Deanne Moenk
Marilee Nagy	Bob Rohrbaugh	Robert Kyle
Tim Wohlgamuth	Jerome Stanley	Mary Blair
David Strasser	Jonathan Slaughter	Mikcael Mucciarone
Clifford Smith	Barbara Martien	Dianne Louis
Cole Mellino	Jane Dinda	Patricia Cook
Sharon Coleman	Richard A. Horton	Karl Leibfacher
Cynthia Upp	Maureen Absten	Judi Germaine
Patrick Smith	Pat Johnson	Allan Orashan
Deborah Lyons	Eileen Dziak	Diana Bradley
Jacquelyn Millag	Michael Kubisek	Tim Herriott
Gail Stafford	Joshua Heller	David Fisher
Lawrence Ric	Carla Rautenberg	Ralph Thacker
Carolyn Rice	Debra Gray	Carol McMahan
James Cunningham	WarrenTruley	Deborah Lichtenberger
Noelle Fox	Ross Ke;sonpetit	James Heine
Charles Nohava	Treasa Lucas	JF Shott
Martha Paige	Mike Gates	Rose Forby
Eric Gulley	Claire Hickman	Thomas Duvall
Natalie Fox	Judith Boone	Deborah Miller
Kathleen Jackson		Steve Namkoong

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2

Cory Helffrich	Ellen Wright	Mary Dustin
Lori Leaf	Rita Rose	Caroline McClennan
Lucretia Crawford	John Shepard	Alison McIntyre
Mary Hood	Julia DeNiro	Michael Stemple
Corinne Alexander	Lois Bluhm	Greg Noneman
Anna Geimeier	Patrick Kilbane	Alison Bashian
Terriane Swift	Kelly Gallagher	Wojtek Chojna
Mary Skirving	Michael Boehm	Ed Phillips
Frank Cornelius	Mary Sue Smeiner	Robert Bohland
Judy Vershum	Nancy Dorian	Chad Liebenguth
Duane Gellner	Laura Thomas	Kenneth Johnsen
James Pexa	James Wagner	R. Way choff
Michael Wildermuth	Nelson Baker	Marjorie Brittingham
Thomas Mirick	Peggy Adams	Calvin Rittenhouse
Franklin Wallbrown	Maria-Francesca Fleming	Brie Schmidt
Missy Proffitt	Lindsay Miller	Tom Snearey
Paul Hopkins	Andrea Doty	Kathryn Schmauch
Pamela Baldwin	Patty Naumann	William Haddad
Peggy Gheta	Phyllis Elmo	George Marsh
Joe Jennings	Jeff Cox	Rachel Haven
Melissa Ochal	Jeff Teeter	Tom Jordan
Sally Kille	Valorie Wolcott	Roberta Aber
Patsy Deerhake	Mendelson	Robert Mihaly
Andy Wallis Jr.	Heather Sommerdyke	Trisha Durham
Paul Szymanowski	Cynthia Schlaepfer-	Eric Wohlgamuth
Pamela Lankard	Youker	Dawn Stanko
Mary Weber	Delbert Russell	Susie Davis
Virginia Wagner	Brian Erickson	Christine Child
Maribeth Metzler	Eileen Anderson	Patricia Fair
Patricia Jacobs	Michael Markic	Lisa Butch
Diane Dodge	Kimberlee Lloyd	Jon Hartle
Kevin Oldman	Martha Bishop	Timothy Mobley
Joel Saeks	Andrew Bishop	Kathleen Markus
Stacey Deck	Bob Cenni	Walczak
Suzanne Ralph	Meghan Ninneman	Helen Rowan
Nancy Crafton	David Laux	Jenny Lee Vaughn
JoAnn Lorello	Tim Collingwood	Melinda Michael
Mark Chudzik	Sandi Archer	Leslie Rumbarger
Connie Kendall	Francine Demyan	Julia Radwany
Jean Deckenbach	Judy Claffey	Gina Boltz
Edward Roach	Autumn Polans	Gary Dopp
Beth Cagan	Lorin Swinehart	Florence Thompson
John Hartnett	Jon Faulkner	Hope Phillips
Robert Carpenter	Michael Hall	Jeri Jofredi
Karen Sullivan	Cindy Moore	Kurt Shaffer
Todd Chapin	K. Vail	Carolyn Leonhardt

**The Ohio Department of Natural Resources received a copy of the preceding letter from each of the following Sierra Club members:**

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Tom Horvath	George Rahlfs	Ann Griffen
John Barnard	Daniel Kellner	Jeannie Finlay-
Herbert Gross	Roberta Miller	Kochanowski
Rebecca Pint	Jerry Tinianow	Anita Antonacci
Annette Segall	Judy Kramer	Jennifer Hill
Dennis Ring	Carol Cochrane	Mark Moore
Laura Camarillo	Anna Freeman	Kenneth Winstel
Lynne Myers	Elizabeth Irvin	Timothy tTrent
Christine Cassella	Jakub Gola	Johannah Hupp-Clark
Dorothy Matz	Kevin Armitage	Michael Webb
Ruth Tisher	Melinda Stephan	Nicholas Hennessy
Debra Bryant	Mark Hunter	Nancy Dawley
Sylvia Kist	William Dowling	Tim Luttermoser
Mark Jensen	Jane Larson	Michael Oatney
Don Kleinhenz	Larry Evans	Karen Toil
Lynn Buffington	Julie Bovender	Jeffrey Eads
James Ruthkowski	Edwin Bixenstine	Glenn Ruff
Ellen Hogarty	Ga Tanner	Grant Kollar
Randolph Gyulay	Laurel Winters	Susan Kollar
Patricia Marida	Eric Irvin	Virginia Sustarsic
Laura Read	Steve Simmons	Mary Thoma
Robert Swab	Christian Mrosko	Joe Sinnard
Helen Swab	Laus Becker	Dorothy Fuchs
Patricia Platt	Patricia Dion	Jerry Jelinek
Chuck Countryman	John Loeffel St.	Renee Tyree
Thomas Devers	Barbara Talbert	Anita Allen
Suzanne Devers	Thomas Cali	Greg Sletten
Thomas McGowan	Karryn Hart	John Clark
Thomas Collins	Paul Reynolds	Kathleen Cain
Diane Munson	John Lenarduzzi	Bruce Smith
Kristina Colahan	Rose Juriga	Charles Mullen
Andrea Zemel	Kevin Stith	Herbert Fast
Shawn Wykle	Karen York	Jennifer Squires
Megan Steva	Edwin Crim	Gerry Wolter
Janice Mastin-Kamps	Mark Laskey	Robert Wagner
Glenn Friedman	David Sages	Deborah Binkley
Brianne Wettrick	Beverly Hess	Gatena Galipo
Jason Kassouf	Sam Jewler	Alicia Alvarado
Marvin Schwartz	Alan Borchart	Shad Williams
Allison Webster	Kathy Borchart	Ned Hamson
Marlene Brewington	Sally Hudak	MacKenzie Bailey
Albert Davis	Paula Kurth	Mark Mendoza
J. Ammon	Chelsea Hannah Houston	Patrick Hartnett
Ronn Koester	Rebecca Jestice	Jill Dorsey
Randy Camper	Bob Higgins	Joan Lang
Edwin Martz	Rev. William Snodgrass	Leonard Bildstein

**The Ohio Department of Natural Resources received a copy of the preceding letter from each of the following Sierra Club members:**

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Nicki Stoneman	Greg Terhune
Kate Birkholz	Dennis Spisak
Louis Williams	Gregg Alexander
Melvin Arndt	Warren Roark
Marji Mendelsohn	Mark Welsh
Ania Siatoniowski	Jeanne Long
Danial Graham	Al Abrams
Ann Witt	Lisa Catlett
Michael Kremer	Susan Miller
Rhonda Marr	Summer LaPlante
Susan Miller	Paula Pickerill
Deborah Wissman	Barbara Brovarne
Seth Vermaaten	Russell Bair
Brent Stansbury	Christopher Spayd
Melanie Essig	Chad Findley
Gail Meese	Angela Christopher
Warren Whitaker	Holy Funk
James Converse	John Luksic
Janet Corbett	Jerry Karlovec
Nicole Mezie	Virginia Olienechak
Rita Wiewall	Shearle Furnish
Dylan York	Lowell Palm
Shirley Nienkark	Jon Serena
Jennifer Pritchard	David McCombs
Shelley Gompers	Rachael Kahny
Virginia Burroughs	Jean Nadeau
Michael Thain	David Modarelli
James Lovich	Paul Rupright
Sandy Barnett	Jeanne Simpson
Sara Pandolfi	Stephen Zerefos
Dane Puterbaugh	
Sandra Wagner	
Tom Burkett	
Paula Travis	
Maureen Lorenz	
Sally Small	
Susan Lynch	
Andie Deimer	
Carol Hunt	
Evelyn Flowers	
Barbara Von Benken	
Alec Johnson	
Sandra Kluk	
Wayne Munson	
Cathy Wootan	