Appendix C

Ohio 2004
Integrated Water Quality Monitoring and Assessment Report

Supplemental Materials:

Public Involvement and Participation in Compiling Ohio's Section 303(d) List of Impaired Waters

Appendix C.1	Summary of Listing Recommendations of the Ohio TMDL External Advisory Group
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Ohio Environmental Protection Agency
Division of Surface Water

March 30, 2004

Appendix C.1. Summary of Listing Recommendations of the Ohio TMDL External Advisory Group

The following is from the Executive Summary of "Recommendations on Total Maximum Daily Loads," Report to the Director of the Ohio EPA, June 30, 2000, prepared by the Ohio EPA External Advisory Group on Total Maximum Daily Loads.

The Listing Subgroup prepared sixteen major recommendations in a number of important areas related to listing and de-listing of the waters on Ohio's TMDL (303d) list. Recommendations were made in the areas of monitoring and data, priority setting and public involvement.

- Monitoring and Data

  The Listing Subgroup urges the Ohio EPA to increase the coverage of monitoring in Ohio to allow watersheds to be listed and de-listed with sufficient time for the TMDL process to address the range of impaired waters across the State. The subgroup is especially concerned about the number of waters for which data is unavailable, insufficient or too old with which to make sound decisions about listing and de-listing.

  Related to the increase in monitoring is the need to make all the information used in the TMDL process promptly available to stakeholders and the public in easily understandable and easily accessible formats (e.g., web). Because of the importance of human health concerns, all human health and fish tissue data collected by the various resource agencies in Ohio (state, local, and federal) should be coordinated and available electronically for the TMDL process.

  Ohio EPA should investigate other available information sources, and each type of data collected and used in the TMDL process should have an appropriate and adequate level of accuracy, precision, and reliability for its intended use in the TMDL process. The white paper the subgroup produced on minimum data quality requirements for listing and de-listing waters comprises its recommendation for minimum requirements related to the listing process.

- Priority Setting

  The Listing Subgroup recognizes that the TMDL process cannot immediately address all impaired waters. As a result, the subgroup recommends that a priority system be developed to allow Ohio EPA to address some problem areas more quickly, and perhaps with more effort, than others. The subgroup recommends that human health risks should receive additional priority in the TMDL process, including impaired and threatened public water supplies. Because of the predominance of habitat impairment of aquatic life in Ohio, waters impaired by habitat should be incorporated into the priority process as if a TMDL were required.

  The Listing Subgroup recognizes that there are environmental costs to deferring certain waters until late in the process, when they may then be more difficult or less able to be

restored. Ohio EPA should quantify the “cost of inaction” and incorporate this factor into its priority system. Ohio EPA should also develop a clear decision making process, using the factors mentioned here and others, including the presence of federal/state endangered or threatened species, restorability, and magnitude of impairment, and make this available for public review.

- Public Involvement

  The Listing Subgroup recommends that public involvement be incorporated throughout the listing process. The process of listing and identifying causes and sources of impairment should be clearly and concisely summarized in the 303(d) list introduction. How various types of data can and will be used should also be described, and public input on all aspects of the proposed list should be solicited. Finally, the Ohio EPA should provide a specific mechanism for the public to appeal the agency’s decisions on listing, failure to list, de-listing or acceptance of data.

Appendix C.2 Solicitation for External Water Quality Data, 2004 Integrated Report Project (August 26, 2003)

Date August 26, 2003

Re Solicitation for External Water Quality Data, 2004 Integrated Report Project
(No action is required on your part - submission of data is voluntary)

To: Interested Parties

From Dan Dudley, Manager, Standards & Technical Support Section
Division of Surface Water

The Ohio EPA Division of Surface Water (DSW) is soliciting readily available bacteria data for use in the 2004 Integrated Report. The report, due to U.S. EPA on April 1, 2004, fulfills the State's reporting obligations under Sections 305(b) and 303(d) of the Clean Water Act.

The 2002 Integrated Report was the first 303(d) reporting effort in which Ohio evaluated and listed waters for impairment of recreation uses. That evaluation was based on data collected by Ohio EPA and readily available in electronic form. For the 2004 report, we are seeking to refine the analysis for recreational uses and expand the data available for analysis, in accordance with the specifications outlined below.

In light of the recently enacted State legislation on what constitutes “credible data” (Am H.B. 43, 125th Ohio General Assembly) and subsequent rules to be developed, the time limitations for the preparation of the 2004 Integrated Report, and the extensive data already available to Ohio EPA for the evaluation of aquatic life uses, only bacteria data are being sought through this solicitation. How other types of chemical, physical or biological data will be solicited for future reporting efforts will be determined at a later date.

Ohio EPA measures recreational use attainment by comparing the level of indicator bacteria present in ambient water samples against the bacteria criteria contained in Ohio’s water quality standards (http://www.epa.state.oh.us/dsw/rules/3745-1.html). These indicator bacteria serve as predictors for the presence of enteric pathogens in the water. Exposure to pathogens as a result of recreating in contaminated waters may lead to a variety of illnesses such as gastroenteritis, dermatitis, conjunctivitis, and “swimmer’s ear.” As the level of indicator bacteria in the water rises, the risk of contracting illness as a result of exposure to pathogens in the water rises. The two types of indicator bacteria that Ohio EPA utilizes are fecal coliform and *E. coli*.

Ohio EPA intends to use two sources of external bacteria data (listed below) that are already accessible to the Agency. Additional data associated with these outside data collection efforts may also be available and the Agency is soliciting this information.

- Data collected by NPDES permit holders at ambient sites upstream and downstream of discharge locations and reported in Monthly Operating Reports - Ohio EPA will extract this data from the SWIMS data base. We think it is likely that some NPDES permit holders collect bacteria data at additional ambient stations. Ohio EPA is specifically soliciting NPDES permit holders for these test results. Data must have been collected after January 1, 1998 and must meet the basic terms of acceptability found in Attachment 1. Data must be provided in electronic data base or spreadsheet format such as STORET, Excel or Access. The submission of data should be made to the person listed below and be postmarked no later than September 26, 2003.

- Data collected by health departments and park officials at public bathing beaches - The bathing beach monitoring program is a cooperative effort of the Ohio Department of Health, the Department of Natural Resources, local health departments, and private and public organizations. The goal of the program is to protect the public from risks of contracting waterborne diseases from exposure to contaminated waters at public access beaches on Lake Erie and inland lakes and reservoirs. The cooperating agencies sample and analyze water from bathing beaches and recommend the posting of advisory signs warning the public when bacteria levels exceed Ohio's water quality standards. Sample results are compiled by the Ohio Department of Health and are posted on the beach monitoring web site (www.odh.state.oh.us/ODHPrograms/beach/beachmain.htm). Some health departments and State parks may collect bacteria data at additional ambient stations. Ohio EPA is specifically soliciting organizations for these test results. Data must have been collected after January 1, 1998 and must meet the basic terms of acceptability listed in Attachment 1. Data must be provided in electronic data base or spreadsheet format such as STORET, Excel or Access. The submission of data should be made to the person listed below and be postmarked no later than September 26, 2003.

There may be additional bacteria monitoring programs in Ohio. The use of data from such sources will be determined on a case by case basis. If your organization has bacteria data collected from surface waters in Ohio, then Ohio EPA would be interested in discussing its possible use in the Integrated Report. Contact Chris Skalski at (614) 644-2144 or chris.skalski@epa.state.oh.us before preparing and submitting any information. The Agency's capacity to accept and utilize the data in preparation of the Integrated Report is dependent upon a variety of factors and the use of all data brought to our attention may not be possible. Data must have been collected after January 1, 1998 and must meet the basic acceptability specifications listed in Attachment 1. Data must be provided in electronic format such as STORET, Excel or Access.

Mail data and supporting information listed in Attachment 1 by September 26, 2003 to Chris Skalski, Ohio EPA/DSW, P.O. Box 1049, Columbus, Ohio 43216-1049.

Attachment 1
Solicitation for External Water Quality Data, 2004 Integrated Report Project
(CWA Section 303(d) listing of impaired water uses)

An individual or organization who submits bacteria data to Ohio EPA for consideration in the 2004 Integrated Report shall attest to the validity of the data and adhere to the data quality specification listed here. The submission of data must cover the following:

A. Sampling and Test Methods, QA/QC Specifications: Sampling must be conducted in a manner consistent with procedures contained in the 20th edition of Standard Methods for the Examination of Water and Wastewater (1998) or the protocol outlined in Ohio EPA Water Quality Standard Guidance Number 3 entitled "Sampling Methods for Documentation of a Public Health Nuisance under OAC Rule 3745-1-04(F) and (G) - August 20, 1998 (http://www.epa.state.oh.us/dsw/guidance/wqs3.pdf).

Analytical testing must be conducted in accordance with U.S. EPA approved methods under 40 CFR 136 (http://www.epa.gov/waterscience/methods/) (also see http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr136_00.html). The name of the procedure used to analyze the sample must be identified. Data submissions must include a description of the Quality Assurance/Quality Control (QA/QC) plans under which the bacteria sample analysis occurred. This should address topics such as sample handling and preservation, sample holding time, chain of custody, precision, accuracy, etc.

B. Description of Sampling Program: A brief description of the purpose of data collection and the sampling design considerations should be provided. Are specific sources of potential contamination under investigation? Are samples collected at fixed station locations? How often and under what kinds of environmental conditions are samples collected? Have the results been published in a report or the scientific literature?

C. Minimum Data Submission: Ohio EPA is requesting only bacteria data (fecal coliform or *E. coli*) collected during the recreational season (May 1st to October 15th) from 1998-2003. The following information must be included in the data submission in an electronic spreadsheet or data base format:

- Sample collection date
- Sample site location including water body name, county, river mile (if known), latitude/longitude (decimal degrees or degrees, minutes, and seconds)
- Fecal coliform count or *E. coli* count
- Identification of units associated with bacteria counts
- Contact name, address, telephone number, and e-mail address of the person submitting the data set
- Identification of the laboratory performing the sample analysis
- Weather conditions, flow, precipitation, and total suspended solids (all optional)

Appendix C.3 Web Pages Announcing 2004 IR Preparation

Ohio EPA Division of Surface Water
122 S. Front St. Columbus OH 43215 (614) 644-2001
Chris Jones, Director

Ohio.gov So much to Discover!

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- Public Participation
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Printing Tips

Preparation of 2004 Integrated Report Underway

Ohio EPA is preparing the 2004 Integrated Report, which fulfills the State's reporting obligations under Sections 305(b) and 303(d) of the Federal Clean Water Act. The report will indicate the general condition of Ohio's waters and list those waters that are currently impaired and may require Total Maximum Daily Load (TMDL) development in order to meet water quality standards.

The report will follow **guidance released by U.S. EPA in July 2003**. The **most recent Ohio Integrated Report** was completed on October 1, 2002.

Ohio EPA will continue to use the watershed based listing approach, first used in 2002. We will include data collected as recently as 2003 where possible. Methods for gauging aquatic life use impairment will not change. Refinements in how we assess bacteria data for recreational use impairment and fish tissue contaminant data relative to the applicable water quality criteria (primarily PCBs and mercury) are underway. Major project milestones and dates for completion are:

Refine methodologies / compile data	September - November 2003
Prepare list / internal review	December 2003
Public notice draft 303(d) list	January 2004
Respond to comments / prepare final list	February - March 2004
Submit to U.S. EPA Region V for approval	April 1, 2004

Please continue to check this Web site for updates. Questions or comments may be directed to **Trinka Mount** at (614) 644-2140.

Current Interest

TMDL Available for Comment

QHEI and Biocriteria training dates announced

2004 319 Grant Information is available

2003 Sport Fish Consumption Advisory

Final Construction Storm Water General Permit

Land Application of Treated Wastewater Rule Development

Headwater Habitat Initiative

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122 S. Front St. Columbus OH 43215 (614) 644-2001
Chris Jones, Director
Air Land Water Pollution Prevention Public Information

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Printing Tips

DRAFT 2004 Integrated Report Available

Ohio EPA has drafted the **2004 Integrated Report**, which fulfills the State's reporting obligations under Sections 305(b) and 303(d) of the Federal Clean Water Act. The report indicates the general condition of Ohio's waters and lists those waters that are currently impaired and may require Total Maximum Daily Load (TMDL) development in order to meet water quality standards. The report follows **guidance released by U.S. EPA in July 2003**.

Highlights of the draft **2004 Integrated Report** include the following.

- **Recreation Use** was assessed with over 35,000 data records on bacteria levels in Ohio's inland waters. Data were available to assess approximately half of the State's waters for recreation use condition: for every watershed attaining the Primary Contact Recreation use, there are two impaired watersheds.
- Lake Erie beaches were also evaluated using data available from the **Ohio Department of Health**. While some individual beaches had no or very few violations of the *E. coli* criteria, the Bathing Water Recreation Use was considered impaired along the shorelines of the Western and Central basins. The Lake Erie Island beaches did meet these standards at all times.
- The draft Integrated Report contains a comprehensive look at how the State's protocol to issue **Fish Consumption Advisories (FCAs)** relates to the human health single route exposure **water quality criteria** for PCBs, mercury and a few other chemicals. The results led to the conclusion that 42 lakes, streams and rivers in the State are impaired by the presence of toxic chemicals in fish.
- There were slight improvements reported in the status of **Aquatic Life Use** attainment statistics.

Remaining project milestones and dates for completion are:

Public notice draft 303(d) list	January 2004
Respond to comments / prepare final list	February - March 2004
Submit to U.S. EPA Region V for approval	April 1, 2004

Go to the **2004 Integrated Report** page for more information.
Go to the **2002 Integrated Report** page to see the last report, which was completed on October 1, 2002.

Current Interest

TMDL Available for Comment

2004 319 Grant Information is available

2003 Sport Fish Consumption Advisory

Final Construction Storm Water General Permit

Land Application of Treated Wastewater Rule Development

Headwater Habitat Initiative

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Appendix C.4 Initial Comments on FCA Methods

Ohio EPA solicited comments on an early draft of Section 6.3, Methodology for Fish Consumption Advisories (FCA). Draft text was provided to the other members of the inter-agency committee on the State sports fish tissue advisory program (Robert Frey, Ohio Department of Health and Ray Petering, Ohio Department of Natural Resources). Two additional outside colleagues were also asked to review the material: Dr. Larry Antosch, Ohio Farm Bureau and Mr. Rob Reash, Water and Ecological Resources Section, American Electric Power. Comments have been kept on file and are available upon request. The verbal and written comments from these individuals were considered by Ohio EPA in the writing the January 9 draft and final versions of the 2004 IR.

Appendix C.5 Public Notice

FINAL Public Notice: January 12, 2004 Weekly Review & major daily newspapers

OHIO ENVIRONMENTAL PROTECTION AGENCY
PUBLIC NOTICE

NOTICE OF AVAILABILITY and REQUEST FOR COMMENTS
FWPCA Section 303(d) TMDL PRIORITY LIST FOR 2004

Notice is hereby given that the Ohio Environmental Protection Agency (Ohio EPA) Division of Surface Water (DSW) is providing for public review and comment the Total Maximum Daily Load (TMDL) priority list for 2004 as required by Section 303(d) of the Federal Water Pollution Control Act, 33 U.S.C. Section 1313(d). The list indicates the waters of Ohio which are currently impaired and may require TMDL development in order to meet water quality standards. The waters are ranked according to level of impairment to help indicate which have the greatest need for TMDL development. The list is contained within the *2004 Integrated Water Quality Monitoring and Assessment Report*, which in accordance with federal guidance, satisfies the Clean Water Act requirements for both Section 305(b) water quality reports and Section 303(d) lists. The report describes the procedure that Ohio EPA used to develop the list and indicates which areas have been selected for TMDL development during FFY 2005 through 2006.

A public information session will be held on February 3, 2004, at 2 pm at Ohio EPA's central office, located at 122 South Front Street, Columbus.

All interested persons wishing to submit comments for Ohio EPA's consideration may do so by email to dan.dudley@epa.state.oh.us, or in writing to Ohio EPA, Division of Surface Water, P.O. Box 1049, Columbus, Ohio 43216-1049 Attn: 303(d) Comments, by the close of business, February 20, 2004. Comments received after this date may be considered as time and circumstances permit. After consideration of comments, Ohio EPA will submit the document to the United States Environmental Protection Agency (U.S. EPA) for approval. The final report must be submitted to U.S. EPA by April 1, 2004.

The report is available on Ohio EPA Division of Surface Water Web site at http://www.epa.state.oh.us/dsw. To receive a printed copy, contact the Ohio EPA - DSW reception desk by telephone at (614) 644-2001 and request the report by name. To arrange to inspect Agency files or records pertaining to the document, to ask technical questions regarding the list or report, or to request notice of when Ohio EPA submits the document to U.S. EPA, please contact Dan Dudley at the e-mail address above or by calling (614) 644-2876.

List of Newspapers Publishing Public Notice

Akron Beacon Journal	Friday, January 9, 2004
Athens Messenger	Friday, January 9, 2004
Canton Repository	Saturday, January 10, 2004
Cincinnati Enquirer	Thursday, January 8, 2004
Columbus Dispatch	Wednesday, January 7, 2004
Dayton Daily News	Friday, January 9, 2004
The Herald Star	Thursday, January 8, 2004
Marietta Times	Friday, January 9, 2004
The Plain Dealer	Wednesday, January 7, 2004
Toledo Blade	Thursday, January 8, 2004
Youngstown Vindicator	Wednesday, January 7, 2004

Appendix C.6 Public Comments and Response to Comments

Part 1 Responses to Specific Comments Page C.6-3

The significant comments on the Section 303(d) listing of waters, and responses to those comments, have been grouped by topic area in Part 1. If electronic copies of the comment letters where submitted, they are presented in Part 2a. The Agency received a number of basic inquiries that were responded to individually as they were submitted. See Part 2b for a record of these comments and responses. Finally, the Agency received eight (8) letters or e-mails of a very general nature (see Part 2c) after the release of the draft report and the publication of a number of newspaper stories. These people wrote to express their views on water quality. Most were quite concerned about pollution and expressed support for efforts to improve water quality. The most extensive of these comments were submitted by Mr. Mike Fremont of Rivers Unlimited who provided evidence that clean water makes economic sense and urged the State to push for tough pollution control laws and clean water. The Agency is grateful for the interest in, and support for, clean water expressed by these all the comment writers listed in Part 2c. However, because these letters and e-mails provided no specific comments on the assessment methods or the specific waters on the Section 303(d) list, the Agency has not written responses to the comments in Part 2c.

In addition to comments from the public, Ohio EPA and U.S. EPA staff conferred several times about the federal guidance for preparing the report and the general status and draft versions of Ohio's work product. Some minor clarifications and additions to the final report reflect comments from U.S. EPA staff (contact U.S. EPA for specifics).

Part 2 Comment Letters and E-mails Submitted

Responses to Specific Comments on Ohio's 2004
Integrate Report and Section 303(d) List

General Comments

Comment: OEC We are supportive of many of the methodologies used by the Ohio EPA, including the use of biocriteria for determining attainment for aquatic life uses, the development of TMDLs on a watershed basis, and the inclusion of attainment status for bacteria/recreational uses and drinking water uses.

Comment: OFBF OFBF would like to commend Ohio EPA for including in the report a more in-depth discussion of the procedure used to categorize Ohio's inland surface water resources. There is a marked improvement from the 2002 Report. Making the process more transparent removes the mystery around how an assessment unit moves through the decision-making process and gets placed into a particular reporting category.

Comment: OEUI The Utilities believe that Ohio EPA ("the Agency") has produced, in general, a technically sound approach to assessing the status of water bodies and interpreting those conditions when water quality impairment shows high certainty. More specifically, the Utilities support the methodology that Ohio EPA has proposed for identifying actual water quality impairments when a fish consumption advisory (FCA) has been issued for a water body segment.

Response: The Agency acknowledges these positive comments.

Comment: OEC There are no listings for inland lakes, ponds, reservoirs, headwater streams or wetlands. The OEC believes that these waters of the state should be included.

Response: The Watershed Assessment Unit (WAU) includes all surface waters within its boundaries. While not separately assessed, inland lakes, reservoirs, wetlands and headwater streams are waters included through the listing process. Questions about the condition of such waters can be addressed during the TMDL process if there is a need to do so. Specific methodologies for wetland assessment are under development and may be applied in future Integrated Reports. Lake assessment work is a matter of limited resources. See Section 6.2 for additional discussion of the status of lakes and wetland methods.

Comment: OEUI The 2004 integrated report contains few references to the recommendations outlined in the multi-stakeholder TMDL review process conducted by Ohio EPA in the past. While the Utilities recognize that staff and resource limitations have precluded many of the recommendations from being implemented, the final integrated report should contain: 1) a narrative assessment of how Ohio EPA has, from a process standpoint, made efforts to involve many of the recommendations made in the report; and 2) an assessment of which of the key recommendations (especially consensus recommendations) have, or have not, been incorporated into the 2004 integrated report. The agency and the participating stakeholders invested vast resources in the process; thus, a basic "report card" should be issued with each integrated report to ensure that the recommendations are not ignored.

Response: This is a good suggestion. The Division will endeavor to have this type of program status report posted along with other information on our TMDL web page (see next comment and

response). However, no material relative to this comment has been added to the final report.
Comment: ODOT This report contains basic yet critical information needed by ODOT and the regulated community to comply regulations associated with TMDLs, such as the status of TMDL development and, especially, which TMDLs have been approved by U.S. EPA. However, after this report is final, it will again become unclear which TMDLs have been approved because there is not a simple way to access this information. A relatively simple solution would be to place a "TMDL box score" on the DSW web page indicating which TMDLs are approved, under active development (with projected completion dates), etc. If updated monthly, this would eliminate the need for individuals to contact DSW staff directly to obtain this basic information. Resurrecting the "Explore Your Watershed" web page would be tremendously helpful if it contained TMDL information (status of development, causes and sources of impairment, etc) in addition to all use designations, Antidegradation Rule categories, 303(d) list status, and any other regulatory information. Currently, multiple sources of information must searched to obtain this information.

Response: Since receiving this comment, an updated map of TMDL activity in Ohio has been posted on the Ohio EPA TMDL web page. We will update the map as changes occur. This and other basic program information has been accessible for some time, and we will work on making more information available on the web as we have staff resources available. We are not able to support the "Explore Your Watershed" web page; the static data there were quite out of date, and links to the information were removed some time ago. We are working on some other web-based applications to make data and information more available, both within the Ohio EPA and with the Ohio Water Resources Council.

Comment: ODOT Include a summary page in the Introduction summarizing changes, successes, new assessment methods and where the details can be accessed on the Internet.

Response: This is a good suggestion. Information has been added to Section 1.

Section 4 Ohio EPA Programs
Comment: NEORSD The discussion of the *Combined Sewer Overflow Control Program* (subsection 4.2.5) at the top of page 11 should note that combined sewers are designed and built to carry dry weather flows to treatment plants and to overflow only when wet-weather flow exceeds the capacity of the system.

Response: Text in the first paragraph of the referenced section of the report has been modified.

Comment: NEORSD The discussion about the U.S. EPA Phase II regulations in the fifth paragraph under subsection 4.2.9, *Storm Water Permit Program* on page 13 should note that the U.S. EPA Phase II regulations allow states to issue either individual or general permits, rather than “require(s) a general permit.”

Response: A sentence has been added to the final report that reflects this comment.

Comment: OEUI While the Utilities support the use of biological community performance as a direct measure of attainment of the aquatic life use, we would like to point out the “quasi antiquity” of the numeric biological criteria. Ohio EPA first proposed numeric biological criteria in 1987. The underlying data used to calibrate each ecoregion-specific criterion (i.e., reference stream

performance) goes back prior to 1987. In some instances, the age of reference stream data is likely to be 20 – 25 years old. The Utilities believe that a re-calibration of the "least disturbed" reference site performance is needed. Water quality (and biological) conditions change with time, and a truly regulatory application of the biocriteria requires some certainty that the reference condition has either not changed, or has changed in one direction or another. The Utilities would like to see Ohio EPA address this issue in the final report.

Response: The Division has been re-sampling many ecoregional reference sites over the past decade with the intent of doing the type of data analysis mentioned in the comment. Ohio EPA has allocated resources in its SFY 2006 and SFY 2007 budgets for this task. While this is considered an important and high priority task, its successful completion will depend on resources being allocated and approved for this task in the next state biennium.

Comment: OEUI As a general comment, the draft 2004 integrated report does not explicitly discuss whether non-biological monitoring data (water chemistry and ambient toxicity) may be used for assessing attainment. This issue is relevant for data collectors other than Ohio EPA, who want to know if water quality data, once submitted, will be considered for use attainment status.

Response: The Ohio Water Quality Standards at 3745-1-07(A)(6) are specific in stating that aquatic life use attainment for EWH, WWH, and MWH will be assessed using the applicable biological criteria. Therefore, Ohio EPA strongly urges all parties interested in assessing these aquatic life uses in Ohio streams and rivers to conduct biological monitoring in accordance with Ohio EPA protocols listed in 3745-1-07(B)(1) and cited in 3745-1-03. Other data collected from sites, including ambient chemistry and toxicity data, is of critical importance in the assessment process for the determination of causes and sources of aquatic life use impairment.

Comment: ODOT Pg. 8, Section 4.2.2. (TMDL program work) We suggest providing training and education for impacted municipalities, other state agencies and business on funding options and where to get assistance in addressing these problems.

Response: The interest and support for training and education relative to Ohio's TMDL program is acknowledged. To date, the Division has provided this type of outreach as part of individual projects and through presentations at numerous conferences and meetings over the past 5 years. We will continue to evaluate the need for training and education, especially at the statewide organization level. The Division will solicit input from other stakeholders to gage the needs and will provide such training and educational materials as resources allow.

Comment: ODOT Pg. 10, Section 4.2.3. Create a table with contact information for the 38 watershed coordinators.

Response: We agree that this information would be useful to the reader. Contact information for the coordinators changes periodically, so we are including a link to the web page at http://www.dnr.state.oh.us/soilandwater/docs/watershedcoord.pdf. The final report also contains a link to the Ohio watershed web page (http://ohiowatersheds.osu.edu/).

Section 5 Ohio's WQS Use Designations

Comment: OEUI In the chart on page 18 of the report, it is unclear what time frame (i.e., ripeness

of data) has been used for assessing the aquatic life use for EWH, WWH, and MWH. How recent must the chemical/biological survey results be to assess the attainment of aquatic life uses? Did the agency use the same time frame of previous data for the 2004 report that was used in the 2002 report? This topic needs further clarification in the final report.

Response: The text on page 30 has been modified. The time period of chemical/biological survey data used to assess watersheds, large rivers, and the Lake Erie shoreline is noted at two locations in the IR; see the chart on page 19 and the text in Section 6.5.1, page 30. Newer data was used in the 2004 IR (1993 - 2002) as compare to the 2002 IR (1991 - 2000).

Section 6 Methods to Assess Use Attainment

6.1 Sources of Existing and Readily Available Data

Comment: OEUI At the bottom of page 20, there is a brief description of the "credible data law," which was passed by the Ohio Legislature in 2003. What progress has Ohio EPA made in implementing the bill? When will the agency begin to require the use of "credible data" for permitting purposes? The Utilities request that a status report on the implementation of the credible data be included in the final report.

Response: The following information addresses these questions, and is presented here in lieu of modifications in the final report. Under the credible data law the Director of the Ohio EPA is tasked with proposing administrative rules to implement a surface water quality monitoring program consisting of 3 levels of credible data with prescribed purposes, and the certification of qualified data collectors who can collect data. These rules are currently being developed and are due to be proposed in October 2004. Early stakeholder input will occur in the next several months. Our time frame for starting to use level 3 credible data from outside sources (qualified data collectors) depends upon the adoption of final rules, but could be as early as 2005 or 2006. The Division is planning to take full advantage of all level 3 credible data in preparing the 2006 IR.

Credible data from this program does not directly apply to permitting. Section 6111.52 of the Ohio Revised Code stipulates five Clean Water Act activities performed by the Ohio EPA where level 3 credible data are required; permitting is not one of these activities.

6.2 Methods under Development

Comment: ODOT Pg. 21-23, Section 6.2.1. When planning projects near drinking water supply intakes, ODOT considers whether the project is located within a public water system's emergency management zone (EMZ) and corridor management zone (CMZ), based on information from Ohio EPA's SWAP Program. In the development of the drinking water use designation, we request that Ohio EPA be explicit about the difference (if any) between EMZs, CMZs, and areas assigned a drinking water use designation. To make this matter simpler for the regulated community, perhaps areas assigned a drinking water use designation should be identical to EMZs.

Response: We agree that there should be a better correlation between the drinking water use designation and the SWAP Program's management zones. We will consider this recommendation in our review of the drinking water use designation in the next triennial water quality standards review. As part of that review, definitions of the public water supply use designation will be evaluated.

6.3 Methodology for Fish Consumption Advisories (FCA)

Comment: OEC We are pleased that Ohio EPA has included fish consumption advisories as a basis for non-attainment. However, we have concerns. The methodology used results in many waters that have fish advisories not being considered to be in non-attainment. This highlights the need for Ohio EPA to adopt stricter human health criteria, especially in the Ohio River basin. As you recall, the OEC has argued for years that Ohio EPA's human health methodologies are not up-to-date, and that there is a glaring inequity between the Lake Erie basin criteria and the Ohio River basin criteria that is not explained by scientific differences between the basins. Further, the listing for non-attainment for fish consumption raises issues as to whether the mercury reduction components of the Clean Water Act are working. We believe that Ohio EPA should aggressively review the Pollutant Minimization Plan requirements, and should add additional conditions to NPDES permits for mercury and other pollutants that cause the fish consumption advisories.

Response: Support for the application of FCA information in the Section 303(d) listing process is acknowledged. Ohio EPA has considered U.S. EPA guidance on the subject and has carefully linked our decisions on which waters to list as impaired due to FCAs to the legally adopted human health based water quality criteria. (Note that some changes were made, see the next comment and response.) Differences in the human health based mercury criteria between the Lake Erie and Ohio River basins must be addressed in the State's Water Quality Standard rules. The Agency will consider this matter when the rules are next reviewed. National U.S. EPA recommendations and State wide information about mercury in fish tissue will be considered.

We are addressing mercury reduction through our NPDES permits in a number of ways. To obtain data that will allow us to identify facilities that discharge mercury at levels that could violate water quality standards, we are requiring facilities statewide to conduct low-level mercury monitoring. In cases where the data indicate the potential for the violation of standards, we include limits in the NPDES permit that are calculated to protect the water quality standards. If a facility is unable to immediately comply with the mercury limits and decides to apply for coverage under Ohio's mercury variance, their NPDES permit requires them to develop and implement a pollutant minimization program (PMP) for mercury. Ohio EPA is working with U.S. EPA Region 5 and other Region 5 states to issue guidance on mercury PMPs to help provide consistency in the elements, the review and the implementation of effective mercury reduction efforts.

Comment: NEORSD Section 6.3 of the Draft Report provides an outline of procedures used in the report to judge impairment of waters based on fish consumption advisories and related human health WQS criteria. Appendix A.1 of the Draft Report details calculation of a threshold value used to implement these procedures. For mercury in the Lake Erie basin, this value is calculated to be 430 µg/kg of fish tissue. We have reproduced this calculation as Case 1 in the attached Supplementary Calculations.

This procedure does not take into account the Relative Source Contribution factor. Per the *Great Lakes Water Quality Initiative Criteria Documents for the Protection of Human Health* (EPA-820-B-95-006, U.S. EPA, 1995), this factor is to be 0.8 for non-carcinogens in the Great Lakes drainage basin. It was used in derivation of the Ohio Lake Erie basin mercury criterion for human health, as shown in Case 2, Calculation 1 of the Supplementary Calculations. Using the same procedures as the Draft Report, but including the Relative Source Contribution factor (Case 2, Calculation 2) results in a lower threshold value of 350 µg/kg. This same value can be derived

by using the human health WQS criterion and trophic level-specific bioaccumulation factors and consumption rates, as shown in Case 2, Calculation 3.

However, the application of a single fish tissue threshold value for two different trophic levels is inconsistent with the WQS criterion's reliance on trophic level-specific bioaccumulation factors and trophic level-specific consumption rates. The correct approach, implicit in the WQS, is to apply trophic level-specific threshold values. Trophic level-specific threshold values can be calculated by multiplying the WQS criterion times the criterion's trophic level-specific bioaccumulation factors. The results are 86 µg/kg and 430 µg/kg for trophic level 3 and 4 fish, respectively. (See Supplemental Calculations, Case 3.)

Nearly all of the fish species listed in Appendix A.2 of the Draft Report are assigned trophic levels in Appendix I: Table 6 of the *Great Lakes Water Quality Initiative Technical Support Document for the Procedure to Determine Bioaccumulation Factors* (EPA-820-B-95-005, U.S. EPA, 1995). Therefore, these can readily be matched to trophic level-specific mercury concentrations.

Using any of the approaches outlined above for application of human health WQS criteria results in an increase in the number of waters impaired for mercury.

However, the WQS criterion for protection of piscivorus wildlife in the Ohio Lake Erie basin is 1.3 ng/L for mercury. This is significantly more stringent than the human health criterion discussed so far. Like that criterion, trophic level-specific fish tissue threshold values can be calculated from this criterion in the same fashion as for human health, in this case using bioaccumulation factors from *Great Lakes Water Quality Initiative Criteria Documents for the Protection of Wildlife* (EPA-820-B-95-008, U.S. EPA, 1995). This results in threshold values of 36 µg/kg and 180 µg/kg for trophic level 3 and 4 fish, respectively. (See Supplemental Calculations, Case 4.)

Response: We agree that the procedure should take into account the Relative Source Contribution factor, which recognizes the fact that people are exposed to mercury from other sources. This lowers the threshold value from 430 ug/kg to 350 ug/kg, resulting in the addition of the Cuyahoga River, the East Branch Black River and Walburn Reservoir to the impaired waters list. These revisions have been made in the final report.

We disagree with the suggestion that trophic level-specific bioaccumulation factors and consumption rates should be used in the procedure. The approach that was used to determine impairment based on fish consumption advisories is a more direct evaluation of whether the level of fish contamination could harm people. The suggested approach of multiplying the criterion by trophic level-specific bioaccumulation factors has a higher degree of uncertainty because of the uncertainty in determining bioaccumulation factors.

Comment: NEORSD Based on these calculations, it is apparent that most of the fish in Appendix A.2 exceed the threshold values for human health, and nearly all of them exceed those prepared based on the wildlife criterion. Both this and a growing body of low-level mercury data support the need for a region-wide TMDL for mercury.

Such a TMDL appears to be needed also to satisfy the requirement at Ohio Administrative Code paragraph 3745-33-07 (D) (8) that "Reasonable progress shall have been made in the development

of a TMDL implementation plan prior to renewing variances approved under paragraph (D) (9) or (D) (10) of this rule." As the amount of low-level mercury data increases, it is increasingly obvious that compliance with effluent limits for discharges to these waters is technically infeasible. We suspect that a region-wide mercury TMDL will find that such sources are generally insignificant compared to nonpoint mercury sources and therefore allow the *de minimis* sources to be regulated accordingly.

Response: While we recognize the need for a region-wide TMDL for mercury, the resources and expertise, either at the State of Region EPA level, to conduct this work has been lacking. The Agency will examine the Administrative rule cited in the comment in light of the current situation and propose appropriate steps.

Comment: OEUI The Utilities agree with the general approach proposed by Ohio EPA to determine when the issuance of a fish consumption advisory translates to actual water quality impairment. The Utilities also believe that the proposed approach adequately satisfies U.S. EPA's concerns with the listing of water bodies that are listed solely because of the issuance of a fish consumption advisory.

Response: Support for the approach that was used is acknowledged.

Comment: OEUI If the concentration of a human health water quality criterion is not exceeded in the water column, but the actual fish tissue concentration exceeds the back-calculated fish tissue concentration (imbedded in the numeric criterion), then a demonstration that the actual criterion is not exceeded should take precedence over the actual fish tissue concentration.

Response: We believe that in such instances the water body should be listed as impaired. The fact that there is a fish consumption advisory and there is documentation that the concentration of pollutant in fish exceeds the threshold upon which the water quality criteria are based demonstrates that there is a problem. The fish are obviously accumulating the pollutant from somewhere, even if the water column concentration is below the water quality criterion. The result of the TMDL may be that sources other than traditional water column sources need to be addressed.

Comment: OEUI The default fish consumption rate for mercury is 0.015 kg/day. Based on more recent fish consumption information published by U.S. EPA, this consumption rate overestimates the fish consumption for mercury-sensitive consumers.

Response: The purpose of the comparison was to determine whether there were exceedences of the water quality criterion. The current water quality criterion for mercury includes a fish consumption rate of 0.015 kg/day. Therefore, it is appropriate to use that rate in the comparison exercise. We will take this comment into consideration when the water quality criterion for mercury is next updated. Be aware, however, that the latest guidance from U.S. EPA is to use the even higher fish consumption rate of 0.0175 kg/day when calculating water quality criteria.

Comment: OEUI In Appendix A.2 (p. A.2-1), the caption above the table indicates that "average values for species that exceeded the threshold of 430 ug/kg are highlighted." The Utilities believe that using the arithmetic mean to determine a central tendency for pollutants in fish should only be done when the data themselves are shown to be normally distributed. In many cases, the

concentration of pollutants in fish have a logarithmic distribution. If the data set is not normally distributed, the geometric mean of the actual fish tissue results should be used to compare against the WQC-derived fish tissue threshold.

Response: There are not enough data points to determine the distribution of pollutants for fish species from Ohio water bodies, with the exception of Lake Erie and the Ohio River. Geometric means are often appropriate in cases where rates of change or ratios are being compared and averaged. For fish tissue, Ohio EPA agrees with the conclusion that "Arithmetic means are unbiased, easier to calculate and understand, scientifically more meaningful (at least for concentration data), and more protective of public health" (1). In a case where the quantity of fish data were such that a distribution could be determined, Ohio EPA would consider the use of a geometric mean. Given that current data are limited and that the arithmetic mean has been shown be a reasonable and protective estimator of concentrations of pollutants in fish tissue, Ohio EPA will continue to use arithmetic means to compare against the WQS-derived fish tissue threshold."

(1) Parkhurst, D. F. Arithmetic Versus Geometric Means for Environmental Concentration Data; Environmental Science & Technology. 1998, Feb. 1 News, 92A.

6.4 Methodology for Recreation Uses

Comment: OEC Regarding beach closings as a trigger for listing, we note that the Ohio EPA is saying that a beach can be closed nine times during a season without it being considered to be impaired. We do not agree with this as a policy statement. Surely, the state of Ohio should not be saying that a beach can be closed that many times during a summer yet be considered acceptable. We urge you to change the criteria to one beach closing.

Response: Ohio EPA applied the evaluation criteria used by the Lake Erie Commission in their State of the Lake report. The Agency believes this is an important public policy matter, but decided not to set a different “target number” for the maximum number of days when beaches are posted with high bacteria level warnings. As a member of the Lake Erie Commission, Ohio EPA will ask that this issue be re-examined before the 2006 IR is prepared.

Because data from groups of individual beaches were pooled to report impairment of the three Lake Erie Assessment Units there is really no practical impact on the 303(d) list of category 5 waters. The Western and Central basins were listed as impaired because several beaches reported 10 days or more above the criterion, while the Lake Erie Islands had zero days reported above the bathing water criterion and this assessment unit was listed as not impaired.

Comment: NEORSD The report fails to delineate which Lake Erie beaches fall into any particular assessment unit.

Response: The final report has provided this information in Table 7-4.

Comment: NEORSD The report’s screening criteria for recreation activities do not align with Ohio Water Quality Criteria. We appreciate their use at this stage of evaluation; however, we reserve the right to comment on them in future reports if the current level of review should seem inappropriate.

Response: The Agency acknowledges this fact. Ohio EPA will solicit public input on evaluation methods developed for the 2006 IR.

Comment: NEORSD The table in Section 5 (page 18) is incorrect for "Bathing Waters:" The listed attribute applies only to inland waters. It should read: **Ohio River, Lake Erie or** bathing beach with lifeguard/bath house. Accordingly, the evaluation status should read: Lake Erie beaches fully evaluated; **no other areas assessed**.

Response: The Agency agrees; the chart on page 18 has been modified.

6.5 Methodology for Aquatic Life Uses

Comment: OEUI 6 In the discussion under Section 6.5.4 (evaluation method for watershed assessment units), the draft integrated report states that:

> Watershed Assessment Units were considered meeting their aquatic life designated use only if a score of 100 was reported. In other words, if all sites are not in full attainment, then assessment unit is listed as not attaining the aquatic life use. (p. 32)

Expecting perfect (100%) attainment of applicable numeric biocriteria is inconsistent with how the biocriteria were developed. In the derivation of numeric biocriteria from reference site data, Ohio EPA expressly chose the 25th percentile of all reference site metric scores to be regarded as the minimum for the "reference stream" condition. Choosing the 25th percentile for reference sites means that 25% of reference site scores do not attain the minimum criterion value. Thus, Ohio EPA recognized that reference sites do not, with some frequency, attain the applicable biocriteria. The recognition of random, poor score performance at reference sites should be used in the assessment of aquatic life use attainment. In other words, a certain percentage of sites that are assessed cannot be expected *a priori* to attain the minimum criteria.

Response: The observation of the comment writer about the selection of the 25th percentile of reference site biocriteria scores for the Water Quality Standard criterion are essentially correct. However, this does not invalidate the basic methodology applied to the evaluation of biological data and the determination of use attainment or impairment in the assessment units. The Division anticipates re-examining the scoring system used to summarize overall "watershed health" from the aquatic life perspective prior the 2006 IR.

Section 7 List of Impaired Waters

Comment: NEORSD Subsection 7.3.2.1, Lake Erie Beaches, refers to "proximity to urban areas with wet weather inputs of raw sewage at beaches in Lorain And Cuyahoga Counties." However, the associated areas (HUC11 04110001 070, 04110002, 04110002 060, 04110003 010) all list "Urban Runoff/Storm Sewers" as "High Magnitude Sources." NEORSD studies indicate that these are significant sources of bacteria in these areas. This omission continues into Appendix D.4. We suggest that it be corrected in both documents.

Response: "Urban Runoff / Storm Sewers" has been added to the listing of high magnitude sources for the Lake Erie Central Basin Shoreline assessment unit, Appendix D.4, page 2. A reference to urban storm water inputs has been added in the text on page 43.

Comment: NEORSD In addition, we would like to note that there are growing suspicions that waterfowl, and their concentration at highly nutritious urban beaches, may be an additional input of bacterial contamination. This should be considered in these areas.

Response: The Agency acknowledges this possibility, but lacks data to include a discussion in the report.

Comment: OFBF Page 33, Section 7.1 Categories of Waters. It is encouraging to see that U.S. EPA guidance contains provisions to categorize waters where the cause of the impairment is not a pollutant as "waters not requiring a TMDL" (Category 4C). It was also encouraging to see that this provision was incorporated into the listing process developed and utilized by Ohio EPA (Figure 7-1, page 34). Given the fact that habitat modification and hydromodification were identified as a cause of impairment in 133 and 94 watershed assessment units respectively (Table 7-10, page 50) why is it that none of 225 assessed watershed assessment units were placed in Category 4C? What criteria must be met to include a watershed assessment unit in Category 4C?

Response: As noted in Table 7-10, 190 WAUs had more than one high magnitude cause listed. Most of these situations (132) involve the identification of specific pollutants such as nutrients or siltation/sediment along with habitat or flow modifications. There are 58 watersheds listed as Category 5 due to one or a combination of the following in addition to the habitat modifications and hydromodification causes: aquatic life use impairments driven by pollutants linked to urbanized watershed issues including urban runoff/storm sewers and onsite septic systems or non-urban issues related to mine drainage, or impairments of other beneficial uses including recreation and fish consumption.

It has been our experience that the sub-standard biological performance in watersheds, when linked to the alteration of physical habitats and flow regimes recorded in the Qualitative Habitat Evaluation Index (QHEI), is frequently associated with some degree of stream bed siltation/sedimentation. Ohio EPA is doing "habitat" TMDLs that combine certain QHEI metrics and siltation/sedimentation as the intermediate restoration targets aimed at restoring the biological criteria and aquatic life use. Placement of waters in Category 4C must proceed on a case-by-case evaluation that conclusively supports the absence of pollutants as contributing to the biological impairment.

Comment: OEUI Table 7-9 presents a summary of aquatic life use attainment in three hydrologic categories: Watershed Assessment Units, Large River Assessment Units, and Lake Erie Assessment Units. For Lake Erie, approximately 68% of sites assessed are judged to in non-attainment. This percentage is considerably higher than the other assessment categories. The Utilities believe that the Lake Erie results should be considered preliminary. Biological criteria for Lake Erie's near-shore areas have not been adopted into the Ohio surface water regulations. Moreover, the high non-attainment status for Lake Erie sites appears to be anomalous (i.e., artificially inflated). The Utilities urge Ohio EPA to exercise caution when listing Lake Erie near-shore zones, especially if the cause and source of impairment is not well documented.

Response: The comments from OEUI are well taken. We agree that additional analysis and assessment of biological data needs to be undertaken before biocriteria can be codified for the Lake Erie nearshore reaches. However, while the assessment process may be somewhat more tenuous, considerable scientific best professional judgment, in addition to the fish biocriteria, was used to determine aquatic life use status of the Lake Erie nearshore assessment units. Additionally, the listing of the Lake Erie assessment units as Category 5 is also driven by impairments of the recreation beneficial use and human health issues related to fish consumption advisories.

Comment: ODOT Pg. 34, Figure 7-1. Add a box summarizing each category like the one for Category 4.
Response: Text was added to Figure 7-1 in the final document.

Section 8 Removing Waters From the 303(d) List
Comment: OEC We have concerns with some of the de-listings that Ohio EPA has included in this list and on the 2002 list. In 2002, dozens of river segments were de-listed due to what the Ohio EPA considered to be inadequate data or old data. In the current list, there are de-listings that result for reasons that we are not convinced are appropriate. Tables 7-6, 7-7, 7-8, 8-1, 8-2, and 8-3 identify waterways that are no longer listed for various reasons, such as insufficient data and changed methodologies; in a few cases, waters were not listed even though the local health department has issued fish consumption advisories.

Response: It is important to distinguish between the 2002 and 2004 lists, and within the 2004 IR between real de-listings and summaries of the effect of methodology changes. It is also important to remember that listing must be based on available, relevant data that are compared to water quality standards that have been adopted for use within the state.

The 2002 Integrated Report was very different from previous 303(d) lists due to fundamental changes in federal guidance and to Ohio's experience with TMDL projects. With a fresh look at the accumulated information, many changes were needed, for the reasons outlined in the 2002 report. Many ideas were added and many were discarded. One of the ideas added, evaluating the Recreation Use of Ohio's waters, resulted in some new listings. However, the 2002 report clearly indicated that the Recreation Use methodology was coarse and would be revised in future versions of the report.

The tables mentioned by the comment writer are the direct result of refinement of the coarse 2002 Recreation Use methodology in the 2004 report. Here, it is also important to distinguish between analysis of the effect of the methodology change and true de-listings: tables in section 7 are not de-listings. Rather, Tables 7-6 through 7-8 discuss the disposition of watersheds under the new methodology relative to the older methodology.

Tables 8-1 and 8-3 are true de-listings and are valid for the reasons indicated in the report. Regarding Table 8-1, including a watershed based on data error is not logical and diminishes the power and purpose of a clearly stated methodology. For the same reason, the one watershed in Table 8-3 whose status changes under the new methodology must be de-listed, or the new listings of numerous watersheds using the same methodology is undermined. We expect further

refinements in methodologies in future lists, and the list must be allowed to change to truly reflect the refinements.

Table 8-2 reports on actions that U.S. EPA has proposed but not completed to date. Thus, these are not true *de*-listings because they are not officially listed. The text is retained in the final report in case U.S. EPA completes its proposed action. Ohio believes the U.S. EPA listing action would be based on flawed methodology, and the de-listings would be valid based on the new methodology outlined in the 2004 report.

Section 9 Prioritize Future TMDL Work

Comment: OEC The draft list identifies a schedule for the preparation of TMDL watershed restoration plans. The OEC urges the state of Ohio to commit to a timely, specific schedule for all TMDL watershed restoration plans around the state and to fulfill that commitment.

Response: TMDLs have been a top priority for the past several years and will continue to be. A substantial proportion of staff resources are devoted to TMDL development, and TMDLs are fully integrated into other programs. We continue to seek new partners who share a concern for water resource restoration and new ways to involve local stakeholders in decision-making. Involving others is crucial to the success of the TMDL program, both in terms of timeliness and effectiveness.

Hand-Delivered
February 20, 2004

Mr. Dan Dudley
Division of Surface Water
Ohio EPA
PO Box 1049
Columbus, Ohio 43216-1049

Re: Comments on the Ohio EPA's draft 2004 Integrated Report (Ohio Water Quality Inventory and TMDL Watershed Restoration Program)

Dear Mr. Dudley:

Thank you for the opportunity to comment on the draft report referenced above regarding Ohio's overall water quality and the state's TMDL watershed restoration program. The Ohio Environmental Council (OEC) has several comments that we hope you will take into consideration while preparing the final report for US EPA:

- We are supportive of many of the methodologies used by the Ohio EPA, including the use of biocriteria for determining attainment for aquatic life uses, the development of TMDLs on a watershed basis, and the inclusion of attainment status for bacteria/recreational uses and drinking water uses.

- We are pleased that Ohio EPA has included fish consumption advisories as a basis for non-attainment. However, we have concerns. The methodology used results in many waters that have fish advisories not being considered to be in non-attainment. This highlights the need for Ohio EPA to adopt stricter human health criteria, especially in the Ohio River basin. As you recall, the OEC has argued for years that Ohio EPA's human health methodologies are not up-to-date, and that there is a glaring inequity between the Lake Erie basin criteria and the Ohio River basin criteria that is not explained by scientific differences between the basins. Further, the listing for non-attainment for fish consumption raises issues as to whether the mercury reduction components of the Clean Water Act are working. We believe that Ohio EPA should aggressively review the Pollutant Minimization Plan requirements, and should add additional conditions to NPDES permits for mercury and other pollutants that cause the fish consumption advisories.

- We have concerns with some of the de-listings that Ohio EPA has included in this list and on the 2002 list. In 2002, dozens of river segments were de-listed due to what the Ohio EPA considered to be inadequate data or old data. In the current list, there are de-listings that result for reasons that we are not convinced are appropriate. Tables 7-6, 7-7, 7-8, 8-1,

8-2, and 8-3 identify waterways that are no longer listed for various reasons, such as insufficient data and changed methodologies; in a few cases, waters were not listed even though the local health department has issued fish consumption advisories.

- Regarding beach closings as a trigger for listing, we note that the Ohio EPA is saying that a beach can be closed nine times during a season without it being considered to be impaired. We do not agree with this as a policy statement. Surely, the state of Ohio should not be saying that a beach can be closed that many times during a summer yet be considered acceptable. We urge you to change the criteria to one beach closing.

- There are no listings for inland lakes, ponds, reservoirs, headwater streams or wetlands. The OEC believes that these waters of the state should be included.

- The draft list identifies a schedule for the preparation of TMDL watershed restoration plans. The OEC urges the state of Ohio to commit to a timely, specific schedule for all TMDL watershed restoration plans around the state and to fulfill that commitment.

Thank you again for considering our comments. The OEC is very interested in the state's TMDL watershed restoration program. We see this program, under section 303(d) of the Clean Water Act, as a vital safety net for Ohio's watersheds. It has the laudable goal of fulfilling the promise of the Clean Water Act to restore the chemical, physical and biological integrity of the nation's waters.

Best regards,

Keith Dimoff
Assistant Director

February 18, 2004

Ohio Environmental Protection Agency
Division of Surface Water
P.O. Box 1049
Columbus, OH 43216-1049
Attn: 303(d) Comments

Re: Review and Comment on 2004 Integrated Water Quality Monitoring and Assessment Report

To Whom It May Concern:

The Ohio Farm Bureau Federation (OFBF) would like to thank you for the opportunity to review and submit comments on the draft 2004 Integrated Water Quality Monitoring and Assessment Report.

OFBF is the largest voluntary nonprofit agricultural organization in the state of Ohio. Our members produce virtually every kind of agricultural commodity and as a result, OFBF is strongly interested in Ohio's TMDL program.

In an effort to ensure that Ohio agriculture is an active partner in watershed management activities, OFBF developed and launched the Agricultural Watershed Awareness and Resource Evaluation (AWARE) program. This program is designed to raise the comfort level of the agricultural community so that they will engage in watershed management discussions. We agree that without the involvement of all watershed stakeholders, the TMDL program is destined for failure.

The voluntary implementation of management practices by Ohio's agricultural producers is resulting in many positive impacts on air, soil and water quality. We encourage our members to continue to be good stewards of our natural resources.

As per the published January 12, 2004 News Release, we have performed our review of the 2004 Integrated Water Quality Monitoring and Assessment Report. OFBF supports the use of scientifically based data and information to develop and establish water resource management programs for the state of Ohio. We are encouraged by the general approach being used by Ohio EPA in the development of the Integrated Water Quality Monitoring and Assessment Report. Water quality assessment and reporting on a watershed basis has advantages when it comes to the development and implementation of watershed management plans.

The watershed monitoring and assessment process being utilized by Ohio EPA is dependent upon the use of a geometric monitoring site selection process to correctly characterize the surface water resources of each watershed assessment unit. This innovative approach to water resource assessment has only taken place in a limited number of watersheds in Ohio to date. A long-term commitment to the continuation of this monitoring strategy is necessary to ensure that all of Ohio's 331 watershed assessment units are evaluated consistently. Consistency in assessment and evaluation is a major concern to OFBF.

Our specific comments regarding the draft 2004 Integrated Water Quality Monitoring and

Assessment Report follow:

1. OFBF would like to commend Ohio EPA for including in the report a more in-depth discussion of the procedure used to categorize Ohio's inland surface water resources. There is a marked improvement from the 2002 Report. Making the process more transparent removes the mystery around how an assessment unit moves through the decision-making process and gets placed into a particular reporting category.

2. Page 33, Section 7.1 Categories of Waters. It is encouraging to see that U.S. EPA guidance contains provisions to categorize waters where the cause of the impairment is not a pollutant as "waters not requiring a TMDL" (Category 4C). It was also encouraging to see that this provision was incorporated into the listing process developed and utilized by Ohio EPA (Figure 7-1, page 34). Given the fact that habitat modification and hydromodification were identified as a cause of impairment in 133 and 94 watershed assessment units respectively (Table 7-10, page 50) why is it that none of 225 assessed watershed assessment units were placed in Category 4C? What criteria must be met to include a watershed assessment unit in Category 4C?

Once again, thank you for the opportunity to provide comments and feel free to give Dr. Larry Antosch of our staff a call, at 614-246-8264, if you have any questions regarding these comments.

Sincerely,

John C. Fisher
Executive Vice President

JCF/lma

February 19, 2004

Ohio EPA
Division of Surface Water
P.O. Box 1049
Columbus, Ohio 43216-1049

Attn: 303(d) Comments

Dear Sir/Madam:

The Northeast Ohio Regional Sewer District (NEORSD) is pleased to provide the attached comments on the January 9, 2004 *Ohio 2004 Integrated Water Quality Monitoring and Assessment Report – Draft for Public Comment* (Ohio 2004 IR) prepared to fulfill the requirements of Sections 305(b) and 303(d) of the Clean Water Act.

Thank you for this opportunity to provide input. If you have any questions regarding the comments, please contact Keith Linn of my staff at LinnK@neorsd.org or (216) 641-6000.

Sincerely,

Erwin J. Odeal
Executive Director

Attachment
kjl
cc: SST
PAC

NORTHEAST OHIO REGIONAL SEWER DISTRICT COMMENTS ON
OHIO 2004 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT –
DRAFT FOR PUBLIC COMMENT

1. The discussion of the *Combined Sewer Overflow Control Program* (subsection 4.2.5) at the top of page 11 should note that combined sewers are designed and built to carry dry weather flows to treatment plants and to overflow only when wet-weather flow exceeds the capacity of the system.

2. The discussion about the U.S. EPA Phase II regulations in the fifth paragraph under subsection 4.2.9, *Storm Water Permit Program* on page 13 should note that the U.S. EPA Phase II regulations allow states to issue either individual or general permits, rather than "require(s) a general permit."

3. The report fails to delineate which Lake Erie beaches fall into any particular assessment unit.

4. The report's screening criteria for recreation activities do not align with Ohio Water Quality Criteria. We appreciate their use at this stage of evaluation; however, we reserve the right to comment on them in future reports if the current level of review should seem inappropriate.

5. The table in Section 5 (page 18) is incorrect for "Bathing Waters:"

   a. The listed attribute applies only to inland waters. It should read:
   Ohio River, Lake Erie or bathing beach with lifeguard/bath house

   b. Accordingly, the evaluation status should read:
   Lake Erie beaches fully evaluated; **no other areas assessed**

6. Subsection 7.3.2.1, Lake Erie Beaches, refers to "proximity to urban areas with wet weather inputs of raw sewage at beaches in Lorain And Cuyahoga Counties." However, the associated areas (HUC11 04110001 070, 04110002, 04110002 060, 04110003 010) all list "Urban Runoff/Storm Sewers" as "High Magnitude Sources." NEORSD studies indicate that these are significant sources of bacteria in these areas. This omission continues into Appendix D.4. We suggest that it be corrected in both documents.

   In addition, we would like to note that there are growing suspicions that waterfowl, and their concentration at highly nutritious urban beaches, may be an additional input of bacterial contamination. This should be considered in these areas.

7. Section 6.3 of the Draft Report provides an outline of procedures used in the report to judge impairment of waters based on fish consumption advisories and related human health WQS criteria. Appendix A.1 of the Draft Report details calculation of a threshold value used to implement these procedures. For mercury in the Lake Erie basin, this value is calculated to be 430 µg/kg of fish tissue. We have reproduced this calculation as Case 1 in the attached Supplementary Calculations.

This procedure does not take into account the Relative Source Contribution factor. Per the *Great Lakes Water Quality Initiative Criteria Documents for the Protection of Human Health* (EPA-820-B-95-006, U.S. EPA, 1995), this factor is to be 0.8 for non-carcinogens in the Great Lakes drainage basin. It was used in derivation of the Ohio Lake Erie basin mercury criterion for human health, as shown in Case 2, Calculation 1 of the Supplementary Calculations. Using the same procedures as the Draft Report, but including the Relative Source Contribution factor (Case 2, Calculation 2) results in a lower threshold value of 350 µg/kg. This same value can be derived by using the human health WQS criterion and trophic level-specific bioaccumulation factors and consumption rates, as shown in Case 2, Calculation 3.

However, the application of a single fish tissue threshold value for two different trophic levels is inconsistent with the WQS criterion's reliance on trophic level-specific bioaccumulation factors and trophic level-specific consumption rates. The correct approach, implicit in the WQS, is to apply trophic level-specific threshold values. Trophic level-specific threshold values can be calculated by multiplying the WQS criterion times the criterion's trophic level-specific bioaccumulation factors. The results are 86 µg/kg and 430 µg/kg for trophic level 3 and 4 fish, respectively. (See Supplemental Calculations, Case 3.)

Nearly all of the fish species listed in Appendix A.2 of the Draft Report are assigned trophic levels in Appendix I: Table 6 of the *Great Lakes Water Quality Initiative Technical Support Document for the Procedure to Determine Bioaccumulation Factors* (EPA-820-B-95-005, U.S. EPA, 1995). Therefore, these can readily be matched to trophic level-specific mercury concentrations.

Using any of the approaches outlined above for application of human health WQS criteria results in an increase in the number of waters impaired for mercury.

However, the WQS criterion for protection of piscivorus wildlife in the Ohio Lake Erie basin is 1.3 ng/L for mercury. This is significantly more stringent than the human health criterion discussed so far. Like that criterion, trophic level-specific fish tissue threshold values can be calculated from this criterion in the same fashion as for human health, in this case using bioaccumulation factors from *Great Lakes Water Quality Initiative Criteria Documents for the Protection of Wildlife* (EPA-820-B-95-008, U.S. EPA, 1995). This results in threshold values of 36 µg/kg and 180 µg/kg for trophic level 3 and 4 fish, respectively. (See Supplemental Calculations, Case 4.)

Based on these calculations, it is apparent that most of the fish in Appendix A.2 exceed the threshold values for human health, and nearly all of them exceed those prepared based on the wildlife criterion. Both this and a growing body of low-level mercury data support the need for a region-wide TMDL for mercury.

Such a TMDL appears to be needed also to satisfy the requirement at Ohio Administrative Code paragraph 3745-33-07 (D) (8) that "Reasonable progress shall have been made in the development of a TMDL implementation plan prior to renewing variances approved under paragraph (D) (9) or (D) (10) of this rule." As the amount of low-level mercury data

increases, it is increasingly obvious that compliance with effluent limits for discharges to these waters is technically infeasible. We suspect that a region-wide mercury TMDL will find that such sources are generally insignificant compared to nonpoint mercury sources and therefore allow the *de minimis* sources to be regulated accordingly.

SUPPLEMENTARY CALCULATIONS

Case 1
As detailed in Appendix A.1 of the Draft Report.

(RfD × Body Weight) / Fish Consumption
= Draft 2004 IR Threshold Value for Mercury in Fish Tissue

(1.0 E-4 mg/kg/d × 65 kg) / 0.015 kg/d
= 0.43 mg/kg = **430 µg/kg**

Case 2
Based on GLI procedures and values for the protection of human health.

Calculation 1 – Derivation of Ohio Lake Erie basin human health WQS criterion:

(RfD × Body Weight × **Relative Source Contribution**)
/ [(Fish Consumption $_{TL3}$ × BAF $_{TL3}$) + (Fish Consumption $_{TL4}$ × BAF $_{TL4}$)]
= Human Health WQS

(1.0 E-4 mg/kg/d × 65 kg × **0.8**)
/ [(0.0036 kg/d × 27,900 L/kg) + (0.0114 kg/d × 140,000 L/kg)]
= 3.1 E-6 mg/L = **3.1 ng/L**

Calculation 2 – Calculation of fish tissue concentration based on consumption and reference dose:

(RfD × Body Weight × **Relative Source Contribution**) / Fish Consumption
= Human Health Threshold Value for Mercury in Fish Tissue

(1.0 E-4 mg/kg/d × 65 kg × **0.8**) / 0.015 kg/d
= 0.35 mg/kg = **350 µg/kg**

Calculation 3 – Calculation of fish tissue concentration based on WQS criterion, bioaccumulation factors, and relative consumption rates:

Human Health WQS
× {[BAF $_{TL3}$ × (FC $_{TL3}$ / FC $_{Total}$)] + [BAF $_{TL4}$ × (FC $_{TL4}$ / FC $_{Total}$)]}
= Human Health Threshold Value for Mercury in Fish Tissue

0.0031 µg/L
× {[27,900 L/kg × (3.6 g/d / 15 g/d)] + [140,000 L/kg × (11.4 g/d / 15 g/d)]}
= **350 µg/kg**

Case 3
Trophic level-specific fish tissue concentrations based on human health WQS criterion.

Calculation 1 – Trophic Level 3:

Human Health WQS × BAF_{TL3}
= Human Health Threshold Value for Mercury in Trophic Level 3 Fish Tissue

0.0031 µg/L × 27,900 L/kg
= **86 µg/kg**

Calculation 2 – Trophic Level 4:

Human Health WQS × BAF_{TL4}
= Human Health Threshold Value for Mercury in Trophic Level 4 Fish Tissue

0.0031 µg /L × 140,000 L/kg
= **430 µg/kg**

Case 4
Trophic level-specific fish tissue concentrations based on wildlife WQS criterion.

Calculation 1 – Trophic Level 3:

Wildlife WQS × BAF_{TL3}
= Wildlife Threshold Value for Mercury in Trophic Level 3 Fish Tissue

0.0013 µg /L × 27,900 L/kg
= **36 µg/kg**

Calculation 2 – Trophic Level 4:

Wildlife WQS × BAF_{TL4}
= Wildlife Threshold Value for Mercury in Trophic Level 4 Fish Tissue

0.0013 µg /L × 140,000 L/kg
= **180 µg/kg**

From: "Robert Lang" <Robert.Lang@dot.state.oh.us>
To: <dan.dudley@epa.state.oh.us>
Date: 2/20/04 11:05AM
Subject: 303(d) Comments

Mr. Dudley,

Please consider the following comments from the Ohio Department of Transportation on the draft 2004 Integrated Water Quality Monitoring and Assessment Report, dated January 9, 2004:

1. This report contains basic yet critical information needed by ODOT and the regulated community to comply regulations associated with TMDLs, such as the status of TMDL development and, especially, which TMDLs have been approved by U.S. EPA. However, after this report is final, it will again become unclear which TMDLs have been approved because there is not a simple way to access this information. A relatively simple solution would be to place a "TMDL box score" on the DSW web page indicating which TMDLs are approved, under active development (with projected completion dates), etc. If updated monthly, this would eliminate the need for individuals to contact DSW staff directly to obtain this basic information. Resurrecting the "Explore Your Watershed" web page would be tremendously helpful if it contained TMDL information (status of development, causes and sources of impairment, etc) in addition to all use designations, Antidegradation Rule categories, 303(d) list status, and any other regulatory information. Currently, multiple sources of information must searched to obtain this information.

2. Include a summary page in the Introduction summarizing changes, successes, new assessment methods and where the details can be accessed on the Internet.

3. There is a typo on Pg. 6, Section 3.2.2. Remove "than" from the sixth line in front of "$7 million".

4. Pg. 8, Section 4.2.2. We suggest providing training and education for impacted municipalities, other state agencies and business on funding options and where to get assistance in addressing these problems.

5. Pg. 10, Section 4.2.3. Create a table with contact information for the 38 watershed coordinators.

6. Pg. 21-23, Section 6.2.1. When planning projects near drinking water supply intakes, ODOT considers whether the project is located within a public water system's emergency management zone (EMZ) and corridor management zone (CMZ), based on information from Ohio EPA's SWAP Program. In the development of the drinking water use designation, we request that Ohio EPA be explicit about the difference (if any) between EMZs, CMZs, and areas assigned a drinking water use designation. To make this matter simpler for the regulated community, perhaps areas assigned a drinking water use designation should be identical to EMZs.

7. Pg. 34, Figure 7-1. Add a box summarizing each category like the one for Category 4.

Rob Lang, Environmental Specialist
ODOT - Office of Environmental Services
1980 West Broad Street, Columbus, Ohio 43223

01/14/04
Julie,
I'll be glad to try to answer your questions over the phone - call me at your convenience
Dan Dudley
Manager, Standards & Technical Support
Division of Surface Water, Ohio EPA
(614) 644-2876
dan.dudley@epa.state.oh.us

>>> "Julie Brown" <julie-brown@oh.nacdnet.org> 01/12/04 04:24PM >>>
I am rather confused at the 2004 draft Integrated Report and the Fish Advisory Information. I am a Watershed Coordinator for Paint Creek so my questions concern this particular stream. I had never heard anything before about their being high PCB levels in the lower 5 miles of Paint Creek. Also, I am confused about Paint Creek being de-listed for mercury under table 7-3 of the 2004 Draft Integrated Report. I would appreciate any help you can give.
Julie Brown
Paint Creek Watershed Coordinator
740-772-4110

01/14/04
Glenn,
The dates are the scheduled years for Ohio EPA to finish the TMDL (loads will have been determined). Appendix Table B.3 provides this same schedule information sorted chronologically.

Dan Dudley
Manager, Standards & Technical Support
Division of Surface Water, Ohio EPA
(614) 644-2876
dan.dudley@epa.state.oh.us

>>> "Glenn Weist" <gweist@HandB.com> 01/14/04 12:31PM >>>
In Appendix B.1.1. Status of Watershed Assessment Units (Summary Table) the far right column is labeled "Projected TMDL" and the datum in each row down this column is a date. Are these dates when the daily loads will have been determined or when the actual daily loads are projected to be met for that particular assessment unit? Thank you for taking my question.

Glenn E. Weist, P.E.
Henderson and Bodwell, L.L.P.
3530 Irwin-Simpson Road
Mason, OH 45040
p. 513.398.1728

01/22/04
Bruce:
all should be explained at this site:
http://www.epa.state.oh.us/dsw/tmdl/2004IntReport/2004OhioIntegratedReport.html
Dan Dudley
Manager, Standards & Technical Support
Division of Surface Water, Ohio EPA
(614) 644-2876
dan.dudley@epa.state.oh.us

>>> "Bruce Landeg" <blandeg@lakecountyohio.org> 01/22/04 10:27AM >>>
What is the name of the report due 1 April, and is it available in draft form on-line? Thanks

Bruce R. Landeg PE PS
Chief Deputy Engineer, Lake County Engineers Dept.
550 Blackbrook Rd.
Painesville, OH 44077
440-350-2770 (W) 440-352-8133(F)
blandeg@lakecountyohio.org

Engineering Lake County's Future
Visit the State Route 2 Major Investment Study website:
http://www.lakecountyohio.org/engineer/sr2/index.html

01/22/04
As requested:

http://www.epa.state.oh.us/dsw/tmdl/2004IntReport/2004OhioIntegratedReport.html

Dan Dudley
Manager, Standards & Technical Support
Division of Surface Water, Ohio EPA
(614) 644-2876
dan.dudley@epa.state.oh.us

>>> russell m bimber <randcbim@juno.com> 01/22/04 08:01AM >>>
Can you give me a URL for the latest draft report about the status of Ohio's waterways, or attach a copy of it to an e-mail reply to this request, or mail me a copy? My address is 156 Kendal Dr., Oberlin, OH 44074.

Russell M. Bimber

01/23/04
Thank you for your prompt reply. And thank you for the information you are sending. No, I do not want the 500 page report. I will use the web and read what you send. Thank you again. Diana Steel

01/22/04
Diana,
A short reply to let you know -

Is the draft report available on a web site?
yes,
http://www.epa.state.oh.us/dsw/tmdl/2004IntReport/2004OhioIntegratedReport.html

Is there a section for the Northeast Ohio watershed and the Black, Rocky, Cuyahoga, Grand and Astabula Rivers available in hard copy?
I'll have the pages from the watershed assessment unit appendix (D.2) for these rivers printed and sent to you next week.

Are there summaries available where the raw data has been analyzed? And if that's not possible, how about the data for Rocky River and the Cuyahoga River?
Not sure I follow your questions - the pages noted above will be a summary of the data records consulted and what conclusion was drawn. Access to all the raw data is doable, but would require some time - let me know if you what to follow up on that. I suggest you look at the reports listed at the link below - there are reports on some of the rivers you listed:
http://www.epa.state.oh.us/dsw/document_index/psdindx.html

I would like hard copies of whatever is available.
See above for what is being sent - let me know if you what a hard copy of the entire report - its about 500 pages

Please place my name on your interested parties list for the final report.
Done

Dan Dudley
Manager, Standards & Technical Support
Division of Surface Water, Ohio EPA
(614) 644-2876
dan.dudley@epa.state.oh.us

>>> diana v steel <whoopingcrane4@juno.com> 01/22/04 12:11PM >>>
23 Jan. 04
3827 W. 133rd St.
Cleveland, Ohio 44111

Dan Dudley
Ohio EPA]Division of Surface Water P. O. Box 1049 Columbus, Ohio 43216

Re: Public Comment on Draft Report for State's Waterways.
Hello. Is the draft report available on a web site? Is there a section for the Northeast Ohio watershed and the Black, Rocky, Cuyahoga, Grand and Astabula Rivers available in hard copy? Are there summaries available where the raw data has been analyzed? And if that's not possible, how about the data for Rocky River and the Cuyahoga River? I would like hard copies of whatever is available. Please place my name on your interested parties list for the final report.

I think it is a very good positive step to include bacteria levels and fish consumption advisories in this current report. If the public understands what is going on in the water in their own watersheds, we can get their support and cooperation in fighting pollution and erosion. They will be supportive of paying for water treatment plants, separate storm water sewers and sanitary sewers and new septic tank systems We need your data and reports to educate the public, the local governments and the developers as to why they cannot fill in wetlands, destroy headwater streams, ignore erosion and agricultural runoff and point and non point pollution. People love the rivers or why else would they keep building right up to the edge of the water? This is true of individual property owners as well as cities such as Cleveland. Environmental impacts are never in the public discussions for public projects such as convention centers and science centers and rock hall of fame buildings or housing complexes. I see children swimming in the local rivers and fishing in the rivers with their parents. I think we could get folks to support water quality if they know what Water Quality means. Information from Ohio EPA has to reach the general public in a broader message. The environmental organizations try to do their part.....but Ohio EPA's own data is grim on the state of the water quality and that information would motive more activism in the communities throughout the State a if the bacteria levels and the fish consumption advisories and the specific toxins in specific waterways were made available in the watersheds where people live The down side is others want to fill in every stream; cut down every tree and shrub; it is a myth that building in wetlands and culverting streams and burying headwater streams is "cheap" way to develop. The Ohio EPA needs to examine its role in impacting water quality by it granting approval for every permit and ignoring what scientists say is the ineffectiveness of mitigation. I see the loss of wetlands to unnecessary retail and housing developments permitted by the State on the sole argument that it will bring jobs and money to the community when that has never been proven to be true one year, five years, ten years after the development. So the State still does not meet water quality standards and we do not have economic prosperity. That is a lose-lose situation. If we concentrated on the EPA's mission to protect the water that would be a proud achievement. Consider, also, when the taxpayers have to pay millions of dollars for Confined Disposal Facilities to hold polluted sediments/dredgings from the Cleveland harbor, sediments that could be reduced significantly through erosion control and wide riparian corridors and buffers upstream, the true economic costs of filling in the streams and wetlands are greater than anyone has every calculated.

Thank you. Diana Steel Wetlands and Water Quality Committee; Sierra Club. Northeast Ohio Group

From: "Mike Fremont" <mike@riversunlimited.org>
To: <dan.dudley@epa.state.oh.us>
Date: 2/19/04 3:45PM
Subject: 2004 Integrated WQ Report

Dear Dan,

In the presence of the continuing and possibly increasing rate of development, we do not believe that under present plans OEPA can restore or even maintain state water quality.

As we have reported for several years, Ohio is not availing itself of hundreds of millions of dollars per year economic return in the 40% of waterways here that are not fishable or swimmable. Yes, it would cost something to get and keep these waters cleaner. An increase in rates here, a state incentive or subsidy for farmers there, the Governor using his bully pulpit to urge cleanup IN THE INTEREST OF JOBS AND THE STATE ECONOMY. We are quite confident from our now 7 years of studies we have sponsored at Ohio State that in most if not all cases the benefits would far exceed these costs. In the case of point-source pollution, cleanup may disgruntle polluters but we know of no documented case where one has left the state for more lax enforcement. There have been dark hints and threats.

Yes, it is a national problem and Ohio is not the worst, and so far as we know no state looks at resource economics in its planning and permitting. But we could; it would grossly benefit our economy, provide jobs the governor seeks and become a national model on how to capture the tourism, employment, property value enhancement, tax base increase, recreation and quality of life benefits the state aspires to. This in addition to the public health end environmental benefits you have some responsibility for.

You understand. We attach a letter to the Governor, an article from our latest Rivers Quarterly called What's Missing in the Clean Water Act?, a Spring 2002 article in River Management Society News. If you ever have a free moment you may want to refer to our website at www.riversunlimited.org, see "studies".

If we're serious about jobs and the economy, resource economics is the direction for our natural resources departments to put their attention. Dollars are what count. Deaths, disease, loss of recreation, property value, tax base, quality of life all have enormous value, measurable even in dollars.

As we and OSU have in the past, we would be glad to consult with OEPA on this at any time.

Sincerely,
Mike Fremont - President Emeritus

February 10, 2004

Governor Robert Taft
Riffe Center, 30th Floor
Columbus, OH 43266-0601

Subject: Jobs, Development

Dear Bob,

I hope you two enjoyed the Paddlefest last June, and appreciated your starting our little canoe race. It was a chance for you to blow your own horn!

This is a response to your State of the State message.

Since 1997 Rivers Unlimited has sponsored River Resource Economics studies at the Ohio State University, involving several professors and some 20 MS and Ph.D students.
These studies were done on the Maumee, Muskingum, Great Miami and are ongoing on the Mahoning, Sandusky and Little Miami.

We can now draw the conclusion that modest investments in river corridors and water quality in the rivers can pay off 2 to 1, 5 to 1, 7 to 1 in economic returns to their communities. Some of this work appears on our website www.riversunlimited.org.

Our message is that Ohio's rivers have the potential to bring great rewards to the state if they are attractive and clean. It wouldn't take a big investment. We have seen property values along a pretty river go from $350 an acre to $10,000 a riverfront lot (about 1/3 of an acre) – a factor of 90 to 1 – in 2 years, along the New in North Carolina. All the river needed was public recognition: it became a National Wild and Scenic River.

In Ohio we have several rivers technically worthy of designation as State Scenic Rivers and several also capable of becoming National rivers. We put out a Special Edition of our Rivers Quarterly Journal in 1999 about the potential to reap big benefits from pretty rivers. A copy is attached.

Your old employer, the Hamilton County Commission, is looking at improving not just rivers but degraded communities, to increase the quality of life – therefore the property value, tax base, recreation, public image, public health and attraction to employers and tourists. We had sent them a letter, also attached.

We would be glad to cooperate with your staff – DOD, Wildlife, Parks and Rec, DNAP- Scenic Rivers. There are great opportunities across the state to add jobs and development if we make it attractive. We do have the natural resources, and where they are trashed we
can clean and beautify them, make this more of a travel, tourism and recreation state.

Kindest regards,

Mike Fremont
President Emeritus

ECONOMICS – A PRIME INCENTIVE TO RESTORE RIVERS

Mike Fremont, President, Rivers Unlimited
January 2002

Rivers Unlimited, founded 1972, is the nation's oldest statewide river protection and restoration organization. Our state is Ohio.

We were honored to address the RMS 2000 Symposium in Charleston, SC on "What a Restored River Could Do for the Local Economy".

Degraded rivers. Impatient at the slow pace of rescue, much less restoration of our degraded rivers, we became convinced there had to be a better way to progress. Our experience and research tells us (from the Symposium paper) that "every degraded river is a waste of major economic potential that can be reclaimed at a profit". That is, for community benefit.

Rivers Unlimited therefore developed in effect a new discipline of River Resource Economics, which is simply the means to evaluate the full *economic* potential of streams, and the cost to restore that potential. Restoration generally means scenic reforestation of a river corridor to as near-natural quality as possible, and improving water quality.

River resource economics. Since 1997 we have sponsored river resource economics studies at the Ohio State University (OSU) in Columbus, Ohio. The aim has been to develop a methodology for analyzing attributes or desirable qualities of rivers, a) to determine their present contribution to the regional economy; b) to determine what they could contribute to the economy if they were upgraded-restored; and c) what it would cost to restore them.

Muskingum River methodology study. OSU Research on the Muskingum River in Ohio developed some basic techniques, not at all limited to analysis of the Muskingum but in effect universal, in looking at riparian property values, recreation, septic or sewage systems, zoning, and extension of a greenway. This study was completed in 2000 and reviewed at the RMS Symposium.

Improving the Muskingum's water quality and scenic corridor would bring benefits greatly exceeding costs. The research has given public assurance that investment in improving the river will pay off, that it would be fiscally prudent. That has led to a federal appropriations request by this Appalachian region for $3.4 million to develop an operative septic system and extend a greenway along the river.

Water quality economics. Our continuing studies include how to measure the public sensitivity to the cost of higher water quality, as a factor not now included in state agency granting of pollution permits. Yet the Antidegradation section of the Clean Water Act requires there be "social and economic justification" to lower water quality in waters where there remains some waste assimilation capacity. We have found so far that anglers and boaters are willing to pay more to restore polluted waters than to maintain more pristine waters. And that this sector, in Ohio, alone, is willing to pay about $30 million to get higher quality water. The completed study

will tell what the average Ohio licensed driver (the most representative identifiable sector) wants and would pay for, as the definitive word on public benefit-cost of water quality.

We think the TMDL process is hopelessly complicated by the fact that we do not, and cannot as yet, assign a public value to the water resource itself. Thus it is assumed to be zero. Our study should help.

Dams. Another ongoing study is the economics of dam removal (versus dam renewal in some cases). This looks at the effect on the regional economy when such major land use change is considered. Factors will include, as usual, cost to remove or rebuild the dam, and fish populations and fishing, but also water supply, flood damage limitation, residential and commercial property values, water quality and toxic sediment removal. Public image and tourism may be major factors.

Channelized streams. We have begun to look at stream restoration from a channelized condition. The challenge in many cases is to return a creek to near-natural condition without reducing flow capacity, but with trees, and bringing back fish, wildlife, recreation and residential amenities and of course reducing polluted runoff and siltation.

Cost of removing pesticides from drinking water supplies. This examined water treatment costs as affected by pesticides in the Maumee River Basin and the Great Lakes Basins, plus other farming practices and their effects.

We know from these studies that for the first time *we* can have economic influence over decisions. In former days the dam builders, channelizers, timber harvesters, land clearers, highway interests, developers, hydropower interests, miners, grazers and polluters had the economic preponderance. With resource economics we can now challenge their economic arguments.

For any river, resource economics can provide the means to determine whether investments to improve the river will cost less than the economic benefits reasonably expected to result.

The logic of invoking economics. River restoration advances very slowly. Holding the line for river water quality and corridor beauty is difficult and costly. If these actions can be shown to bring more dollars into communities than they cost, restoration and protection will both accelerate - the political community will make it happen:

Many rivers are degraded – both the quality of their waters and their corridors, therefore they cannot provide the full potential of economic, environmental and social benefits.
Communities are not aware that restored rivers can make money for them.
Resource economics can develop the methodology for communities to study their rivers for possible improvement.
If authoritative studies show big potential rewards, remedial action will follow.

From experience we know there is a strong likelihood that restoration will pay off. By “improve”, we mean clean up the water, reforest the corridor, use natural means to armor riverbanks against erosion, remove dams and transform channelized streams to natural systems.

River use, like land use, has changed over the years. Surface water isn't so important for transportation, for water power, for waste disposal as it was. Rivers now are appreciated more for fishing, property value (which becomes tax base), quality of life, swimming and other recreation; as parks, greenways, open space, for birds and wildlife; for public image to attract "the right kind" of commerce, industry and residential settlements. As a nation we haven't understood the connection between an inviting river and a better economy.

How to apply economic methodology to an individual stream.

How does one apply economic methodology to an individual stream?

The community considers the possibility its river could become an economic asset, or a bigger one than it is.

Community reviews a Community Suitability Questionnaire (below) and concludes what it wants, what its vision of the future is.

It then decides to do a cursory study of certain attributes of the river, using the developed methodology.

4. It then determines that improvements would benefit the local economy by so much, and would cost so much. If favorable, community commissions a more thorough study to confirm. If that is favorable, and gives confidence, community decides to solicit bids to proceed with improvements.

Community Suitability Questionnaire. Community planners and river interests can express their vision of what they want for the community as affected by a restored river. That will determine the particular potential assets presently not available, for example various types of recreation, removal of unsightly structures, conversion to a park, increased tax base, tourism, protection against upstream pollution, streambank erosion, buffer against close-by development, measures to counter imperviousness etc.

Consideration of attributes. A short list of improvements that can be made to rivers to bring economic benefits: greenways, river-protective zoning, operative septic or sewer system, cleaner water in the river, dam removal, streambank restoration – and believe it or not, enforcement of environmentally protective regulations.

The table below shows, for each cost-effective improvement, how both the *economic* and *environmental* sectors can potentially benefit.

Cost-Effective Improvement	Potentially Benefited Sectors															
	Economic									**Environmental**						
	jobs	banking	real estate	recreational infrastructure	tax base	property values	tourism	fishing	recreation	fish	birds	air quality	forest cover	views	health	water quality
Greenway	X	X	X	X	X	X	X		X	X	X	X	X		X	X
Septic	X	X	X		X	X	X	X	X	X	X				X	X
Zoning	X	X	X	X	X	X	X						X	X		X
Rec. Repair	X	X	X	X	X	X	X	X	X						X	
Dam Removal or renewal	X	X			X	X	X	X		X	X			X		X
Water Quality	X	X	X	X	X	X	X	X	X	X	X	X			X	X
Stream Restoration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

The "market" for this research, showing how to measure the potential assets or attributes of a stream, is immense:

Forty percent of the nation's waterways are not fishable or swimmable. That's 1,400,000 miles. Only 3/10ths of one percent of our river miles are protected under the National Wild and Scenic Rivers Act (in 34 years). Our state river protection systems include only a small fraction of their river miles. In Ohio it is 1.1%, after 34 years. How many Outstanding National Resource Waters are there, to be held pollution-free?

We're forgoing about $9 billion a year because of denied sport fishing opportunities on rivers. Some 600,000 miles of river lie behind big dams. Some 10,000 small government dams were built in the 40's and 50's without funding for maintenance, are at the end of their 50-year design lives, and must be rebuilt or removed. Many thousands of miles of stream have been channelized, therefore destroyed for any purpose other than accelerated flow, but can be revived. Add to these the thousands of TMDL deliberations to be carried out, currently without benefit/cost consideration. If these decisions had fiscal integrity, that alone could help us keep that section of the Clean Water Act in a not-too- friendly Congress.

The 60% of river miles presently fishable and swimmable are not all that good – they're not offering the full potential of their uses to the public and could be greatly improved. Lastly, the U.S. Fish and Wildlife Service says that "Economic benefits are the primary issue that will justify and drive river restoration projects in the future, not environmental justifications. When rivers are restored, aquatic resources also will be restored including federally threatened and endangered species …"

_____

This research is just a short overview of a big subject. It is available to the public from Rivers Unlimited, and soon on our website www.riversunlimited.org. We will gladly discuss any aspect of it as it progresses, by email at ru@cinternet.net, phone at 513-761-4003, fax 513-761-4988, 515 Wyoming Ave., Cincinnati, OH 45215.

Article for Rivers Quarterly Journal

Winter 2004

1- 9 - 04

What's Missing in the Clean Water Act?

We're thankful it built our sewage treatment plants with our taxes. They account for almost all of our water quality improvement since 1972.

We don't presume to know all that's missing in the Act. But we are confident that the pace of "restoring and maintaining" our water quality is slow because a central factor is missing in our studies and decision making. It is:

We do not know the value of water.

Therefore we assign it a value of zero.

The tug of war in Antidegradation is: Up to what point can we pollute a stream to accommodate "development"? If an industry or sewage treatment plant (preparing for a housing development) wants a pollution permit, it should be granted if there is a net social or economic benefit. "Social" means more jobs. "Economic" means more economic activity. Each implies that if the permit is refused, these benefits will not occur. In case of conflict our Ohio EPA Director will make the final decision. Since the value given water is zero we obviously cannot assess the *benefits* of a) making the water cleaner or b) the *costs* of it becoming more polluted. Therefore we always decide to grant the permit, as it always means, or seems to mean, at least one additional job or some additional economic activity.

If we look at assigning TMDL's (total maximum daily loads of pollutants, used to control farm and other runoff) allowed to enter the water, there is the same obstacle: *The value of water is zero.* In neither this case nor Antidegradation can there be a legitimate determination of how much, if any, additional pollution is in the public interest because the public interest in water quality is not measured or invoked. It is "jobs added" or "increased economic activity" (i.e. houses built) versus allowable pollution limits.

What's not considered is the public's interest in clean water. This shows up in a number of ways: First, what we are willing to pay for a percentage *improvement* in water quality. Or to put it another way, what we *lose* when water quality is degraded.

Rivers Unlimited sponsored an Ohio State University study of this willingness-to-pay for improved water quality. The study is authoritative. The Ohio public would pay a one-time charge of about $90,000,000 to be assured that there was a 20% Available Pollutant Assimilative Capacity*, above* "safe" levels of pollution in their waters. Boaters and anglers would pay a one-time charge of $30,000,000 for "higher quality water".

The day-to-day Antidegradation and TMDL decisions do not take into account gains or losses in

fish, fishing, other water-based recreation, river-area residential property values, wildlife, quality-of-life values along a stream, public image attracting settlement or tourists – all affecting the stream for an indeterminate distance downstream of the pollution discharge.

Increased pollution incrementally increases economic losses of these assets. Cleanups increase economic gains, and social gains as well, not necessarily jobs, but quality of life, esthetic values and perhaps public health. We do not now quantify these benefits or these losses so we cannot make permitting decisions in the public interest. By leaving decisions to the Ohio EPA Director, the Antidegradation and TMDL decisions have no real integrity. Politics and ideology can creep in. Staff recommendations can be ignored.

We defy Ohio EPA to show that the collective permitting, in and of itself, has improved water quality in our streams. Some 700 permits to pollute are granted each year. Each says the discharges will degrade the receiving waters. We recognize that this “point-source” pollution is only 9% of the total in our waterways. The rest is runoff from farms, mines and other places where wastes may not go through treatment before entering streams.

We cannot serve the public interest unless we acknowledge the dollar value of our flowing waters. Besides willingness-to-pay, other indices of the value of our streams are

* As a system, corridor and all, the importance of clean headwaters for aquatic populations, including endangered and threatened species
* As a system, with the potential to be a State Scenic River, with the attendant social and economic advantages – which may be very large
* Fishing, which is influenced by water quality. It puts a value on a stretch of river, about $14,000 per river mile per year.
* Such that we should be concerned over the impact of pharmaceuticals with hormones, antibiotics, their metabolites, and pesticides on our aquatic organisms including fish, and their effect on our well waters, our children and ourselves.

With flowing waters, nationally and in Ohio we are behind the times in economics and equity. We can do better. We should require a *comprehensive* economic benefit/cost study that puts dollar value on water, before we degrade any of our streams.

01/25/04
I urge Ohio EPA to be even more diligent and proactive in regards to Ohio's water resources. The Ohio EPA should become more aggressive with polluters, especially those municipalities that refuse to comply or they drag their feet, claiming funding difficulties. Our natural resources are the only things that we can pass on to generations 3 or more removed from our own....to give our great grandchildren a legacy of dirty water resources is something I wish not to do.

Bernard Pressman , Akron Ohio.

1/25/04
Dear Mr. Dudley,

This is in Regard to the article in the 1/22/04 issue of the Beacon Journal "Bacteria Pose Risk in Ohio Streams". I would like to state that this troubles me and I would like to see more emphasis by our state and Federal Governments towards correcting this problem. It is irresponsible to put off the improvements to our sewage treatment infrastructure that is necessary to correct this problem. If it means higher taxes, then I would be willing to support this.

Sincerely,
Curt Hofmann
Copley Township

02/03/04
DAN,
I AM VERY CONCERNED ABOUT THE CONDITIONS OF OHIO'S WATERWAYS. AS A RESIDENT OF CENTRAL OHIO,(MT.VERNON), I WAS DISAPPOINTED TO READ THE RECENT REPORT ABOUT THE CONDITIONS OF OUR AQUATIC RESOURCES. MY FAMILY AND I KAYAK AND FISH THE CLEARFORK, AS WELL AS NUMEROUS RIVERS/STREAMS IN THE AREA. I AM WILLING TO HELP IN ANY WAY TO "CLEAN UP" MORE OF OUR STATES CRUCIAL WATERWAYS. I CONSIDER THIS A LOCAL, STATE, AND NATIONAL PRIORITY!!

SINCERELY, PAM LEONARD
LEO@ECR.NET

02/04/04
I find it appallig and demoralizing when a resident of Ohio can no where in the state safely swim in any of the state's waterways.

Alan Crockett

Mr. Dudley -

My name is Andrew Arnold and I am a sophomore undergraduate student at Vanderbilt University. I am from the general Cleveland area, and have decided to do a public policy paper on the environmental condition of Ohio's watersheds.

I recently read a few Plain Dealer articles in which you were interviewed and explained what the Ohio EPA was doing to cleanup Ohio's rivers, watersheds and other natural water sources. I was wondering if you would be willing to send me information regarding the issues surrounding the attempt to cleanup Ohio's water. Specifically, I wanted to find out what our state's plan of action is and if it is both economically and logistically feasible. Also, I'm interested in any specific cases in which point source pollution has played a large role in the contamination process.

Any information you could lead me towards would be much appreciated.

Thank you for your hard work and I hope you can find time to respond to this email.

Sincerely,
Andrew Arnold

Arnold, Andrew Coulter
Vanderbilt University
Email: andrew.c.arnold@Vanderbilt.Edu