

CLEAN WATER PLAN

208 LAKE ERIE BASIN WATER QUALITY MANAGEMENT PLAN

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Prepared By:

**Northeast Ohio Four County Regional Planning
and Development Organization
180 E. South Street
Akron, Ohio 44311-2035**

**JAMES A. HOWEY
BOARD CHAIRMAN**

**JOSEPH HADLEY, JR.
EXECUTIVE DIRECTOR**

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Contributors: **Northeast Ohio 208 Plan Update Task Force***
Erwin Odeal, Co-Chairman representing the NOACA Board
Dave Crandell, Co-Chairman representing the NEFCO Board

NEFCO Staff

Joseph Hadley, Jr., Executive Director
Claude Custer, Jr., Water Quality Planner
Sylvia R. Chinn-Levy, Economic Development Planner
Rebecca L. Morgan, Secretary
Jeff Pritchard, Environmental Planner**

NOACA Staff

John Beeker, Ph.D., Project Director
Andy Vidra, Senior Environmental Planner
Bill Davis, Senior Environmental Planner
Pamela Davis, Environmental Planner
Miles Loretta, GIS Specialist
Bob Layton, Senior Economic Planner

Note: The principal author of Chapter 7, Urban Stream Restoration Planning, is Lester A. Stumpe, Manager of Legislative, Regulatory and Technical Support, Northeast Ohio Regional Sewer District

*Members of the Northeast Ohio 208 Plan Update Task Force and its work groups are documented in Chapter 10

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CLEAN WATER PLAN

208 Water Quality Management Plan for Portage County and Summit County Lake Erie Basin

Executive Summary

What does the 208 Plan mean?

The Northeast Ohio Four County Regional Planning and Development Organization (NEFCO) was designated by the Governor of Ohio under Section 208 of the federal Clean Water Act to perform areawide planning. Together with local public officials throughout the region, NEFCO has formulated a draft of the 208 Plan which addresses both municipal wastewater treatment issues and nonpoint source pollution management and control. This version of the 208 Plan incorporates changes from the public review process and has been approved by the NEFCO General Policy Board.

The first 208 plan for the NEFCO region was completed in 1979 and focused considerable attention on public investments in wastewater treatment facilities and point sources of water pollution, which produced a remarkable recovery in the quality of water throughout the region. The most recent concern of threats to water quality are from the rapidly developing areas of the region. The threat comes from a variety of potential sources, including non-point discharges from residential and commercial developments. Given these conditions, this draft 208 Plan focuses on:

- issues of planned sewer expansions in the suburban counties;
- better management of home sewage systems;
- more vigorous attention to the control of nonpoint source pollution; and
- protection of regionally important water resources.

What is the problem?

Recent court decisions resulting from the “Reynoldsburg vs. Ohio” and the “Scioto vs. Ohio” court cases, in conjunction with changes in the Antidegradation Rule application in Ohio, stipulate that the Director of Ohio EPA may not process an application for a National Pollutant Discharge Elimination System (NPDES) permit or a Permit-to-Install (PTI) that is in conflict with any Water Quality Management Plan developed under Section 208 of the Clean Water Act. This means that all local wastewater management agencies need to coordinate their facilities plans with the region’s 208 water quality plans.

Local Implications

Future sanitary sewer extensions must be consistent with the Plan.

Home sewage management regulations will mean regular inspections and mandatory septage pumping programs.

Stricter requirements and stronger enforcement of storm water management programs and other nonpoint source control recommendations could increase regulation of development.

Riparian zone protection programs may limit streamside uses.

Road salt minimization programs, will mean less road salt is used.

Local officials will be able to better protect regionally important water resources from pollution sources.

The advantage of the 208 Clean Water Plan Update is that it will establish the basis for evaluating all sewerage plans in a manner which will ensure that future development occurs as each community envisioned. Local governments will be able to help guide land use decisions in a manner that is protective of the environment and water quality.

In areas where sanitary sewers are to be excluded as an option, local communities must develop and implement more effective programs to make sure that individual on-site sewage treatment systems are properly installed, operated, and maintained. If this does not occur, and a water quality problem results, the Ohio EPA may be forced to require the extensions of sewers to rectify the problem.

Introduction

NEFCO's Clean Water Plan (CWP) is the first major update to the region's 208 areawide water quality management plan (WQMP) since 1981.

The Clean Water Plan planning area encompasses a two county area and includes the Cuyahoga River, and small headwater sections of the Chagrin River, Grand River, and Rocky River Basins tributary to Lake Erie. A NEFCO Clean Water Plan for the four-county area tributary to the Ohio River Basin will be produced in different phases and ultimately combined into one report.

NEFCO collaborated with NOACA in developing elements of this plan. The two agencies share planning responsibilities for several watersheds in northeast Ohio. Together they created a joint Task Force of local and state officials with water quality management planning responsibilities to assist in the development of the plan.

Authority for preparing this plan comes from Section 208 of the Clean Water Act which requires the preparation of areawide management plans for water quality by regional agencies designated for that purpose. NEFCO was designated in 1975 as the planning agency for the four counties of Portage, Stark, Summit and Wayne under Section 208, and produced the initial Section 208 plan in 1979. The Ohio EPA is responsible for overseeing updates to and implementation of Section 208 plans.

Northeast Ohio's Water Quality Problems Today

Twenty years ago when it was first adopted, the 208 plan for the NEFCO region provided the regional planning framework for federal funding of publicly-owned wastewater treatment facilities. Construction of these was seen as absolutely critical to restoring water quality to northeast Ohio's urbanized areas. The public investments in wastewater treatment anticipated in the initial plan have produced a remarkable recovery in the quality of water and in the return of aquatic life to many of the region's streams, lakes and rivers and to Lake Erie itself. In spite of these improvements, significant water quality problems remain in the older urban areas of the region largely due to storm water, combined sewer overflows, sanitary sewer overflows, land use patterns, and habitat disruption.

However, the most recent concern to water quality today is occurring in the rapidly developing areas of the region on the periphery of the existing urban areas. This concern comes from a variety of potential sources, including nonpoint source discharges from residential and commercial developments, but most significantly from the combined effects of land disturbances to construct these new developments. This transformation is threatening regionally important water resources once thought relatively secure from water pollution threats (upland drinking water reservoirs, groundwater supplies, and high quality streams once far removed from urbanization). Thus, while the perceived water pollution problems of the 1970s have largely been addressed, there remains a whole new set of water pollution challenges at the turn of the 20th century to be confronted. Land uses will change from a predominantly rural character to urbanizing uses. This will affect water runoff from the land surface and how surface runoff seeps into the ground. This trend will have an impact on water quality.

Complex water management issues increase as local communities recognize the interrelationship of water resources and community growth. For example, multiple political jurisdictions downstream from Akron's Lake Rockwell (Cuyahoga River) reservoir remain engaged in litigation on water usage and its impact on the middle portion of the Cuyahoga River. The resolution of issues related to water management and use is critical to the continued planning and protection of water resources.

Focus of the Clean Water Plan

A primary focus of the Clean Water Plan, therefore, is to manage the threats to water quality presented by the rapidly developing areas of the region. The plan addresses issues of planned sewer expansions in Portage and Summit Counties; better management of home sewage systems; more vigorous attention to the control of nonpoint source pollution, and the identification of and protection of the region's important water resources. If action on the Clean Water Plan is not taken, regional water quality is expected to decline, reversing the gains of the last twenty years.

The Clean Water Plan is also concerned with the persistent water quality problems in the region's existing urbanized areas. In these areas, while water pollution problems associated with point source discharges from sewage treatment plants and industrial sources have been largely addressed, significant water quality problems remain.

Vision and Goals of Clean Water 2000

The 208 Plan represents a vision of the region's future to balance development and economic growth with a sustainable quality of the water environment. The policies and recommendations of the 208 Plan were formulated using the following goals as guidelines:

- 1) The plan should take a watershed approach that coordinates agencies addressing point and nonpoint pollution sources as the basis for management planning;
- 2) The plan should optimize the use of existing investment and reinvestment in infrastructure with infill development, prior to the use of public investments in new infrastructure;
- 3) The plan should be protective of what has been gained in environmental quality and outline measures needed to be undertaken to meet designated uses with particular attention to the enhanced protection of regionally important water resource areas;
- 4) The planning process should be a tool for educating local public decision makers on regional water quality management issues; and
- 5) The plan should be an educational tool to elicit support of the general public for plan implementation.

Areas addressed by the Clean Water Plan

The Clean Water Plan addresses water quality management planning improvements in seven areas:

- Area 1) Wastewater Management Facilities Planning;
- Area 2) Management of Home Sewage and Semi-Public Sewage Disposal;
- Area 3) Nonpoint Source Pollution and Storm Water Management;
- Area 4) Protection of Important Water Resources;
- Area 5) Restoration of Urban Streams;
- Area 6) Watershed Planning; and
- Area 7) Ongoing Areawide Water Quality Planning.

Steps to Plan Certification

The draft plan will be circulated for public review and comment from local jurisdictions and agencies, the general public and the Ohio EPA. A number of public meetings will be held for this purpose. The final draft plan will include revisions based on the public review process. With approval of this document by the NEFCO General Policy Board, the final plan will be submitted to the Ohio EPA for certification, and to the Governor and the USEPA for approval. Once approved, the plan will become effective.

Area 1: Wastewater Management Facilities Planning

The 208 Plan updates wastewater management facility planning areas (FPA) and identifies local jurisdictions to be designated as management agencies (DMA) for wastewater management facility planning within a FPA. Each FPA has identified wastewater management options or “prescriptions” which represent current judgments about where sewers will be extended and where areas will remain unsewered over the next 20 years.

Once adopted by NEFCO, certified and approved by the Ohio EPA, these options will be part of the region’s water quality management plan (WQMP), referred to by NEFCO as the Clean Water Plan (CWP). Decisions by the Ohio EPA concerning certain permits and State Revolving Loan Fund loans for wastewater treatment must be consistent with the Clean Water Plan. Designated management agencies for wastewater treatment facilities are listed in Chapter 3. This chapter also provides wastewater prescriptions for each of the facility planning areas contained in this update.

Significant Policies: One of the objectives of Section 208 of the Clean Water Act was to establish integrated and coordinated facility planning for wastewater management. In order to accomplish this objective in urban areas where competition for service areas was expected to be a concern, the Clean Water Act called for the designation of areawide planning agencies to assist in the resolution of such conflicts as they might arise. All future changes to boundary definitions and the creation of new facility planning areas must be approved by the NEFCO Board. Any applications to the Ohio EPA for a permit to discharge pollutants into the waters of the state or a permit to install must be consistent with the adopted CWP. Wastewater management options within facility planning areas must comply with requirements of the Clean Water Act and adopted with the advice of affected local jurisdictions. The Ohio EPA will not approve decisions concerning certain NPDES permits, permits to install (PTI) and State Revolving Fund (SRF) loans for wastewater treatment unless they are consistent with the CWP.

Detailed policies governing how changes to wastewater management plans will be made are included in Chapter 3.

Listed below are sample descriptions of categories shown on the county facilities planning areas maps. These are examples of what NEFCO refers to as wastewater prescriptions. The reader is cautioned to not apply any of these prescriptions to a specific community. Rather, the reader is referred to the community or county area’s prescription described in Chapter 3 of the CWP.

Areas currently sewered (yellow) - These areas are currently served with sanitary sewers that have been constructed and are currently in operation. However, there are undeveloped tracts of land and vacant lots subject to improvement. All new development and construction in the yellow areas of this facilities planning area will be required to connect to and/or provide sanitary sewer service to ensure that wastewater will be treated and discharged at an existing publicly-owned treatment works (POTW). Existing non-single-family private treatment systems which fail to operate properly will be required to connect to and/or provide sanitary sewer service to ensure that wastewater will be treated at an existing POTW. Failing home sewage treatment systems (HSTSs) serving single-family homes shall be abandoned in accordance with Ohio Administrative Code 3701-29-02.

Area Programmed for Sewers Within the Next 20 Years (orange) - These are areas projected to receive sewers but are not yet sewered. Projected wastewater flow from these areas have been accounted for within the system. Existing (developed) commercial, industrial, institutional and residential properties within the proposed sanitary sewer service area shall be required to connect to the sanitary sewer, as it becomes available, for the removal of sanitary wastewater from their existing properties.

All new residential developments and new commercial, industrial, institutional establishments within the proposed sanitary sewer services area shall be required to connect to the existing sanitary sewer system for removal of sanitary wastewater from each new building unit of facility, fully observing all regulations of governing agencies. The developer or owner may be required to extend new sanitary sewers from the proposed development or facility to the existing sanitary sewer system that is served by an existing POTW.

Failing systems of existing commercial, industrial and institutional establishments, in need of repair or replacement will be required to connect to the existing sanitary sewer that is served by an existing POTW, even if a sewer extension is required. No home sewage treatment systems (HSTS) or semi-public sewage disposal systems (SPSDS) are recommended within the proposed sanitary sewer service area for new commercial, industrial, institutional and residential developments. However, HSTS shall be considered appropriate for new single family houses constructed within subdivisions located within the proposed sanitary sewer service area and served by such systems if an existing POTW is not available to such properties. The decision shall be determined on a case-by-case basis and in accordance with local zoning, the local planning agency the Portage County or Summit County Health Departments, local health departments, as each area of government jurisdiction requires.

Exceptions may be (granted/requested) based on sewer availability, soil conditions, extent of failure, and cost of repair.

Areas That Will be Served by On-Site Non-discharging Systems (cream) - These are areas in which new development is expected to be “large-lot” low density, with non-discharging household and semi-public disposal systems as the primary method for the treatment of wastewater.

Areas That Will be Served by a POTW or by On-Site Non-discharging Systems (green) - These are rural areas with undeveloped tracts of land and vacant lots subject to improvement and many existing subdivisions developed in the past using HSTSs for wastewater treatment. All new subdivision development, whether residential or non-residential, and all other new non-residential, and new multi-family residential development, will be required to connect to and/or provide sanitary sewer service to ensure that wastewater will be treated at an existing POTW. Vacant lots within existing HSTS-served subdivisions and remote metes-and-bounds residentially-zoned parcels may be so improved with new HSTSs provided the local health department finds that soils are suitable to assure there will be no off-lot discharge of effluent. Existing non-single-family private treatment systems HSTS and SPSDS which fail to operate properly will be required to connect to and/or provide sanitary sewer service to ensure that wastewater will be treated at an existing POTW. Exceptions may be (granted/requested) based on sewer availability, soil conditions, extent of failure,

and cost of repair. Failing HSTSSs serving single-family homes shall be abandoned in accordance with OAC 3701-29-02.

Areas that will be served by a POTW or by on-site nondischarging systems in Joint Economic Development District (JEDD) Service Areas (dark green) - Existing (developed) commercial, industrial, institutional and residential properties within the sanitary service area shall be required to connect to the sanitary sewer, as it becomes available, for the removal of sanitary wastewater from the existing properties.

All new residential developments and new commercial, industrial, institutional establishments within the sanitary sewer service area shall be required to connect to the existing sanitary sewer system for the removal of sanitary wastewater from each new building unit or facility, fully observing all regulations of governing agencies. The developer or owner shall be required to extend new sanitary sewers from the proposed development of facility to the sanitary sewer system that is served by an existing publicly-owned wastewater treatment facility.

Failing systems of existing commercial, and institutional establishments, in need of repair or replacement, will be required to connect to the existing sanitary sewer that is served by an existing publicly-owned wastewater treatment facility, even if a sewer extension is required.

No home septic treatment systems (HSTSSs) are recommended within the sanitary sewer service area for new commercial, industrial, institutional and residential developments. However, HSTSSs shall be considered appropriate for new single family houses constructed within existing subdivisions located within the sanitary sewer service area and served by such systems if an existing publicly-owned sanitary sewer system is not available to such properties. HSTSSs shall also be considered appropriate for new single family houses built on metes-and-bounds parcels within the sanitary sewer service area that are not part of any existing subdivision and are not located adjacent to any publicly-owned sanitary sewer system. The decision shall be determined on a case-by-case basis and in accordance with local zoning, the local planning agency or the local health department, as each area of government jurisdiction requires.

Recommendations for Local Officials: Land use plans should conform to the wastewater management options described in the 208 Plan. Joint Economic Development District (JEDD) or Cooperative Economic Development Agreement (CEDA) procedures should be considered to address potential conflicts among local jurisdictions over the extension of wastewater services to currently unserved areas.

Area 2: Management of Home Sewage and Semi-Public Sewage Systems

The Clean Water Plan anticipates that some areas of the Lake Erie Basin portions of Portage and Summit Counties will remain unsewered and be serviced by individual home sewage treatment systems and semi-public sewage disposal systems over the next twenty years. If not properly maintained these systems can have a high rate of failure and can adversely impact water quality. The reasons for this are complex and tied to deficiencies in the home sewage management system.

The plan makes a series of recommendations for improving the management of home sewage treatment systems and semi-public sewage disposal systems by local health departments. This is the

result of work by a committee of seven county health departments, the Ohio EPA, the Ohio Department of Health, NEFCO and NOACA.

The recommendations have been organized in a “cradle to grave” fashion that begins with improvements to site evaluation procedures, includes improved procedures for system installation and site inspections, homeowner maintenance requirements and regular inspections by local health departments, regular pumping requirements and homeowner education and training.

Local health department implementation of the recommendations is critical for maintaining water quality in unsewered areas of this region. Communities wanting to avoid the costs and developmental impacts of centralized sewers must actively support and encourage full implementation of these recommendations.

Recommendation for State Legislation

The Clean Water Plan also makes a recommendation that legislation be enacted in Ohio that would set standards for the management of home sewage treatment systems and semi-public sewage disposal systems including regular inspections by local health departments, and provide a mechanism for local accountability to state standards through a process of state certification of local agencies. It is clear from the deliberations of the committee, charged with addressing the issue of home sewage disposal management recommendations for this plan, that the absence of a state statutory authority in this area is a severe impediment to adequate regulation of this pollution source.

Another important recommendation is that local health departments prohibit in any new development the installation of any system which will produce an off-lot discharge. The recommendation goes further to say that off-lot discharging systems should only be allowed in repair or replacement cases where no other alternative is technically or economically available.

Federal Requirement for Control of Illicit Discharges

New federal regulations promulgated to control illicit discharges to municipal storm water systems will constrain the approval of off-lot discharging systems by requiring state enforcement of standards defined as “best available demonstrated control technology” as outlined in Ohio Administrative Code (OAC) 3745-1-05: Antidegradation Rule (Ohio EPA Correspondence of August 11, 2000). These standards will also apply to existing systems which may effectively eliminate the option to repair or replace many off-lot discharging systems with similar systems in the future.

The USEPA Storm Water Phase I Final Rule was promulgated on November 16, 1990 (55FR17990). The USEPA Storm Water Phase II Final Rule which was promulgated on December 8, 1999 (64FR68722), effective March 10, 2003, will significantly control off lot discharges. Further, regulations affecting the “medium” and “large” municipal separate storm sewer systems (MS4s) generally serving populations of 100,000 or greater, and construction activity disturbing five (5) acres of land or greater, and ten (10) categories of industrial activity under Phase I have been expanded. It now will cover urbanized areas that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile and areas outside of an urbanized area of at least 10,000 and a population of at least 1,000 people per square mile. Construction activity is reduced to those areas of one (1) acre or more, and the regulations end the delay of the deadline for some industrial activities.

The Ohio EPA and ODH are currently negotiating with USEPA over the terms and conditions of permitting authority that complies with the new federal regulations. The Clean Water Plan includes the recommendation that local health departments continue to serve as the permitting authority for these systems.

What Local Agencies Need to Do

Under the 208 Plan, it is recommended that local health departments agree to: adopt the plan recommendations; pursue implementation of these recommendations over a five year period; pursue implementation of the plan recommendations as a priority in areas identified as tributary to regionally important water resources; and report their progress to the NEFCO Board. The LHDs agree to adopt and pursue uniform regulations through the Ohio General Assembly.

Recommendations for Management of Home Sewage Systems:

- 1) Site evaluation forms should be uniform; comprehensive site plans should be submitted with applications and fees should reflect the actual costs of the evaluation.
- 2) Sewage disposal systems that utilize soil for the treatment or disposal of wastewater should not be approved for use in soils that are not capable of providing adequate treatment and dissipation of sewage system effluent.
- 3) Any system that produces an off-lot discharge for any new development should not be permitted.
- 4) Regulations that permit the revocation of installer registration based on unsatisfactory work or deviation from regulations must be enforced.
- 5) Each county and municipality should adopt an Operational and Maintenance (O&M) Program which includes owner education, operational permitting process, regular system inspection, adequate staffing and fees, system records management, and mandatory pumping programs. These programs should be designed to comprehensively address existing and new systems. Systems should be inspected regularly to ensure maximum effectiveness in treating wastewater. The O&M Program should be staffed at a level that ensures that each system is inspected at least every five years. A mandatory septage pumping program should be implemented that educates, tests, registers, and regulates pumpers/haulers, maintains pumping records, and determines pumping schedules for each system.
- 6) A septage management and disposal plan to address septage disposal at POTWs should be developed with leadership by the County Executive, Board of County Commissioners, city administration, and local Boards of Health.

Detailed recommendations are included in Chapter 4.

Area 3: Nonpoint Source Pollution and Storm Water Management

The threats to surface and groundwater resources are changing. Historically, point sources were viewed as the primary threat. However, point source problems are well on their way to being controlled, and now it is nonpoint pollution and storm water effects, which appear to provide the greater threat to our water resources. Nonpoint problems are both water quality and quantity based. There is an emerging realization that unchecked storm water runoff from impervious surfaces is a major threat to water resources. The solutions to these problems are watershed specific and therefore must be pursued using a watershed approach involving multiple government jurisdictions.

Recommendations for Nonpoint Source Control

Six nonpoint source management programs are recommended for implementation by local and county agencies. The plan provides model legislation for consideration. These programs are as follows:

- 1) **Storm water runoff management from development and redevelopment activities.** Municipalities and counties are encouraged to adopt and implement Storm Water Management Programs for all development and redevelopment activities that affect an area equal to one acre or more as part of a common development. These programs need to address the management of both storm water quality and quantity. The plan also recommends state legislation in this area.
- 2) **Construction site erosion and sediment control programs.** Municipalities and counties are encouraged to adopt and implement Soil Erosion and Sediment Control Management programs for all nonagricultural land disturbance activities, which affect an area equal to one acre or more as part of a common development.
- 3) **Riparian zone protection programs.** Developing communities are encouraged to adopt and implement Riparian Zone Protection Ordinances, while developed areas are encouraged to protect existing vegetation in riparian corridors and work to restore the integrity of the zone in disturbed areas. A riparian buffer ordinance minimizes or prevents the alteration of the riparian zone along stream segments to ensure that functions provided by the riparian area are protected. The riparian zone generally covered by a buffer ordinance includes the vegetative corridor adjacent to a perennial or intermittent stream usually up to the 100-year base flood level. The ordinance requires building setbacks in new subdivisions and major redevelopment areas that necessary to protect the riparian zone. These building setbacks range from 25 to 300 feet depending on the size of the stream. The plan also recommends state adoption of a model ordinance.
- 4) **Conservation design for storm water management.** Developing communities are encouraged to foster the use of Conservation Design Development which concentrates development on limited areas of a property while maintaining tracts of open space surrounding it. This minimizes infrastructure needs, preserves the natural character of the land, reduces soil erosion and lowers storm water management costs.
- 5) **Road salt minimization and storage programs.** Road salt management programs seek to use only the amount of salt needed to provide the desired level of safety and to apply that amount of salt at the time when it will deliver the most good. Under some conditions, substitutes for road salt should be considered. Counties and communities that are in close proximity to surface water or groundwater drinking supplies are particularly encouraged to implement and maintain Road

Salt Minimization and Storage Management Programs. ODOT is also encouraged to implement and maintain road salt minimization and storage management programs.

- 6) **Non-point source management plans for low interest loan programs.** Soil and Water Conservation Districts are encouraged to take the lead in developing non-point source pollution management plans which would allow local watershed organizations to participate in the Ohio EPA/ Water Pollution Control Loan Fund (WPCLF) Linked Deposit Program. This program requires completion of a watershed management plan that identifies needed non-point source controls and provides targeted implementation.

What local officials need to do:

Compare existing laws to model regulations and identify inconsistencies or shortcomings. Where substantial change is needed, decide whether it is better to upgrade the existing law to eliminate deficiencies or to adopt the model ordinance as a replacement for the existing codes. Train all personnel who implement the adopted regulation.

The plan also spells out a series of strategies addressing emerging nonpoint source program opportunities which are included in Chapter 5.

Area 4: Protection of Regionally Important Water Resources

A series of environmentally sensitive water resource categories have been identified as candidates for priority protection. Resources that meet these conditions include surface drinking water supplies, groundwater drinking supplies, and regional resource waters.

The Clean Water Plan proposes four changes in Ohio EPA policy to enhance the protection of regionally important water resources.

The Ohio EPA is requested to:

- 1) Adopt changes to its Permit to Install (PTI) application procedure for new or increased discharges to areas identified as regionally important areas in the 208 Plan that would require assessment and mitigation of potential off-site impacts of discharge.
- 2) Broaden the Total Maximum Daily Load (TMDL) process so that local officials could augment state-initiated set asides for the unique regional waters within their jurisdictions by petition to the Ohio EPA with set asides implemented through Ohio EPA's antidegradation and PTI review process.
- 3) Amend its policies regarding the Water Pollution Control Loan Fund (WPCLF) to give priority to the protection of regionally important water resources identified in the 208 Plan through enhancements to its financial incentives program.
- 4) Prioritize the enforcement of the National Pollutant Discharge Elimination System permits for construction site activities in communities that are tributary to Surface Drinking Water Supplies, Groundwater Drinking Supplies, and Unique Regional Waters identified in the 208 Plan.

Detailed recommendations are included in Chapter 6.

Area 5: Urban Stream Restoration Plans

The Clean Water Plan proposes a strategy for urban stream restoration as a way to start or restart processes of stream restoration for streams whose land use is predominately urban and which, generally, are not attaining current standards. These urban stream restoration plans would be individually tailored to a specific stream or stream segment with the help of substantial public participation. This is expected to result in outcomes which reflect community goals. Traditionally, resources devoted to stream protection have been focused on pollution abatement. While pollution abatement remains a necessary activity, other measures to protect or restore streams can often more effectively restore water quality.

There is a strong need for initiatives to consider the establishment of reasonable standards for restoring urban streams. Currently, aquatic life water quality standards are based upon “reference streams” from undeveloped areas. Urban ecosystems, in particular, are at risk from a wide range of stressors beyond point sources of pollutants. Modified land use patterns in urban areas typically impact nonpoint pollutant loads to surface and ground waters, alter the hydrology of a stream, and destroy the biotic and abiotic functions of stream corridors. While a wide range of significant stream stressors are well documented, we continue to invest our resources in narrow solutions that have little chance of effecting desired change. Pollutants are just one of many factors which affect an ecosystem.

There is a pressing need to focus on two areas where urban streams typically fall far short of meeting existing standards -- the biological criteria for aquatic life uses and the bacteria criteria for “contact recreational” use. A process that sets attainable goals in these areas could greatly further watershed restoration by prompting action as well as focusing attention and resources toward underlying stream problems.

Future efforts for a regionally endorsed urban stream restoration plan should:

- 1) Be based on a scientific approach and a thorough analyses of costs and benefits. Local impacts need to be considered. The urban stream restoration plan will need to prepare a scientifically and economically defensible mechanism.
- 2) The Urban Stream Restoration Plan will need a detailed analyses of specific streams (or segments of streams) that would be affected.
- 3) The Urban Stream Restoration Plan should also demonstrate how existing rules and designations preclude downstream attainment and how further investment of resources in specific streams will not be cost effective.
- 4) An Urban Stream Restoration Plan should initiate a statewide initiative to examine how stream standards could be more appropriately determined. Other stream segments that probably may

warrant Restoration Plans and designation may include; rural agriculture; rural and urban flood control, rural recreation, and water supply.

Model of proposed urban watershed planning process

A regulatory program that encourages community-developed urban use designations i.e., stream goals could be the catalyst for community work to define and address problems at the heart of urban stream impairments. If flexibility is allowed in setting goals, communities are likely to respond with ideas that are efficient in increasing the value of the resource. If resources for pollution abatement could be re-targeted, many communities would likely be interested in addressing the root causes of urban stream problems with measures such as habitat protection, stream restoration and storm water management.

The development of an Urban Stream Restoration Plan (USRP) would follow a planning process that initially focuses on the root causes for the condition of the urban stream segment in question. This would be followed by a community goal-setting process. Alternative sets of actions to restore the stream segment to chosen goal levels would be created and evaluated to lead to a recommended set of actions. The product would include an implementation plan outlining responsibilities for achieving both short and long term stream goals.

The proposed USRP, including the proposed supporting water quality standards, would be submitted to the designated WQMP planning agency for consideration and adoption as part of the area's Water Quality Management Plan. The review process would look at the issue of protection of downstream uses and assure that appropriate best management practices have been included to protect stream health. Additionally, the CWP would consider measures of technical and institutional support for the USRP. The amended CWP would be forwarded to Ohio EPA for incorporation into the state's Water Quality Plan. Incorporation of the amended CWP into the state's Water Quality Plan would likely be accompanied by a schedule for Ohio EPA rulemaking.

Ohio EPA would undertake a rulemaking process to consider the proposed water quality standard component of the proposed USRP. The state would also consider Total Maximum Daily Load plan and initiate any associated NPDES permit actions needed to achieve consistency with the plan. It is hoped that the state would also adopt policies that would help to direct available resources to priorities set forth in the USRP.

The named implementing authorities in the USRP would be responsible for carrying out measures called for in the plan in a coordinated fashion. It is anticipated that a coordinating organization may be designated to provide overall direction to the implementation effort.

At appropriate intervals, specified in the plan, there would be a re-evaluation of the overall goals of the USRP. This is envisioned as a community process similar to the initial process used to establish goals for the USRP. This process might involve formal revisions of the goals of the USRP and, as appropriate, might involve consideration of formal revisions of the area CWP and the state's Water Quality Plan. At a minimum, evaluation of future goals should benchmark with the attainment of the fishable/swimmable goals established by the Clean Water Act.

Opportunities for Land Use Changes

The process of adoption of a proposed USRP as a part of the area's CWP may also offer an opportunity to require consideration of changes in land use practices. Specifically, as a matter of policy, the designated planning agency may consider requiring that certain best management practices related to land use be considered in the development of any USRP which it considers for adoption.

Finally, one of the most powerful tools in affecting land use is having the capital resources necessary to obtain easements or actual ownership of critical natural features that support the integrity of water resources. Ohio is fortunate to have a powerful new program that makes available the capital strength of the state's SRF fund for protection and restoration efforts. The Water Resource Restoration Sponsor program, put into place in 2000, is designed to assist protection and restoration projects that directly benefit water quality. It accomplishes this objective by offering reduced interest rates on traditional SRF loans when a loan recipient agrees to use the financial benefit of the reduced loan rates for the specified restoration/protection efforts. This program can produce substantial capital resources for these efforts. For example the benefit of a zero percent interest rate on a \$10 million dollar loan could be used to fund a restoration or protection effort costing in the range of \$5 million.

Detailed strategies and recommendations are included in Chapter 7.

Area 6: Watershed Planning

During the 1990s organized watershed and subwatershed planning groups have emerged in four of the five major river basins in the Northeast Ohio 208 Lake Erie Basin planning area. Local, county and state water quality management agencies are encouraged to participate in and support the major watershed planning groups currently existing in the area. In Summit and Portage Counties, three watershed groups exist for the Cuyahoga River: the Cuyahoga River Remedial Action Plan Coordinating Committee; the Middle Cuyahoga River Stakeholders; and the Upper Cuyahoga River Task Force. In Portage and Summit Counties, subwatershed groups have or are being organized for Yellow Creek, the Little Cuyahoga River, and Tinkers Creek. These groups constitute a significant and valuable regional planning resource for promoting coordinated approaches to watershed issues. Their strength lies in developing public awareness and responsible actions for water quality.

Watersheds and subwatersheds are becoming recognized as a new form of community or 'neighborhood' around which citizens and public agencies can organize to address environmental problems.

This CWP recognizes the importance of Northeast Ohio's watershed groups, and recommends actions to sustain and enhance their varying roles.

Detailed policies and recommendations are included in Chapter 8.

Area 7: Ongoing Regional Water Quality Management Planning

The NEFCO General Policy Board will continue the ongoing 208 Plan administration responsibilities and organizational structures of the agencies involved in the planning process. This involves updating the regional plan for wastewater treatment facilities, promoting local implementation of recommendations for home sewage management, and nonpoint source controls, promoting state rules to protect regionally important resources and encouraging urban stream restoration, maintain water quality information and facilitate coordination of data, and serve as a regional forum for addressing water quality management issues. Staff and financial support will be needed to sustain ongoing planning activities. With the adoption of this plan update, the NEFCO Board reaffirms its intention to sustain this effort.

Detailed policies and recommendations are included in Chapter 10.

Chapter 1

Introduction and Overview of the Plan

This chapter presents an overview of 208 planning, summarizes the original 208 Plans completed in 1979 and 1981, outlines goals, and provides an overview of the CWP.

I. Introduction

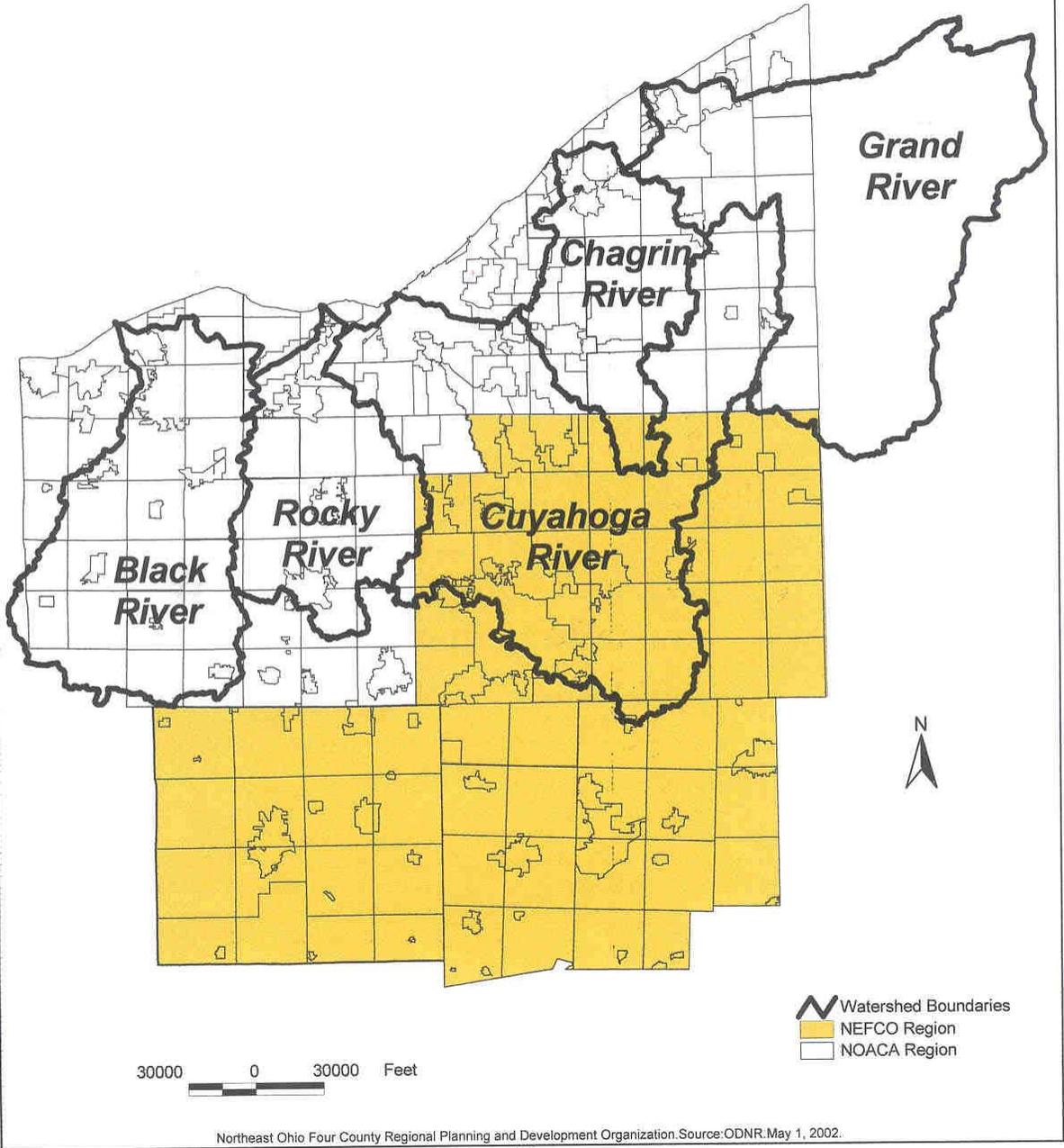
This document is the first major update to Northeast Ohio's 208 areawide water quality management plan (WQMP) in twenty years. It is the result of the labor of many local public officials from the region representing counties, municipalities, sewer agencies, county health agencies, planning departments, conservation agencies and representatives of Ohio EPA, ODNR and the Ohio Department of Health and local watershed groups who assisted staff from NEFCO and NOACA in formulating the proposals in this plan.

The update focuses on water quality management problems in five river basins tributary to Lake Erie in Northeast Ohio. From west to east these are the Black River in Lorain and Medina Counties, the Rocky River in Cuyahoga, Lorain, Medina and Summit Counties, the Cuyahoga River in Cuyahoga, Summit, Portage and Geauga Counties, the Chagrin River in Lake, Geauga, Cuyahoga and Portage Counties and the Grand River in Lake, Geauga and Portage Counties. Figure 1-1 shows the Lake Erie Basin Wastewater Management Planning Area.

This plan is a collaboration between NEFCO and NOACA who share water quality management planning responsibilities in several of the watersheds. NOACA is the designated planning agency for the five counties of Cuyahoga, Geauga, Lake, Lorain, Medina. NEFCO is the designated planning agency for Portage, Stark, and Summit Counties in the Lake Erie Basin. The balance of these counties and Wayne County are located in the Ohio River Basin.

Both NEFCO and NOACA were designated by the Governor of Ohio under provisions of the federal Clean Water Act to perform the areawide planning required under Section 208 of that Act. NEFCO was designated by the Governor of Ohio in 1979 pursuant to 33 U.S.C. Section 1288 (FWPCA Section 208), and NOACA was similarly designated in 1975. These agencies were designated because they are organizations governed by Boards of local elected officials with regional planning responsibilities in a metropolitan area. NOACA is organized under the Ohio Revised Code pursuant to the joint powers of County Government at ORC 307.14 **et seq.** NEFCO is organized as a Regional Council of Governments under ORC 167.01 **et seq.**

**Figure 1-1
Lake Erie Basin Wastewater Management
Planning Area**



Section 208 of the Clean Water Act

Section 208 of the Clean Water Act sets forth requirements for water quality management planning (WQMP). In the urbanized areas of the state, the responsibilities for water quality management planning are shared by areawide and state agencies. Both municipal wastewater treatment issues and nonpoint source management and control are to be addressed in areawide water quality management plans. Water quality management plans guide implementation by defining implementation responsibilities of management agencies with municipal waste treatment or nonpoint source management responsibilities who are thereby designated to perform specific control recommendations. Authority to perform the WQMP function is provided in state law at ORC 6111.02(A), 41-42.¹

Areawide water quality management plans are one tool among several provided in the Clean Water Act to be utilized by the State to address water pollution and meet designated water quality standards in lakes, rivers and streams. Other tools include water quality standards setting, water quality assessments, the issuance of National Pollutant Discharge Elimination System (NDPES) permits to control discharges, assistance in financing wastewater management facilities, enforcement, and water quality monitoring activities. In water quality assessment, the state is charged with the responsibility for evaluating and establishing the capacity of a water body to receive pollutant loads without harm to the waterbody's intended use. This is done through a program of establishing Total Maximum Daily Loads (TMDLs) and water quality-based effluent limits for a stream which provide the foundation for permit issuance. Table 1-1 illustrates water quality management roles and responsibilities among state, regional and local agencies.

II. Original Areawide Water Quality Plans

THE 1979 NORTHEAST OHIO LAKE ERIE BASIN (NEOLEB) PLAN

In 1979 a joint NEFCO/NOACA Board (Northeast Ohio Lake Erie Basin) Board first adopted an Areawide Water Quality Management Plan in 1979. Elements of this plan included:

- 1) a subplan for Publicly-Owned Sewage Treatment Facilities and Facility Planning Areas (POTW/FPA) which identified public jurisdictions with lead responsibility for managing and building improvements to the wastewater treatment facilities needed to attain water quality standards for the region;

¹*Confer Ohio EPA's Continuing Planning Process (Draft 6/30/98) document for a detailed review of state and federal authority to perform planning and implementation responsibilities under the Clean Water Act.*

Table 1-1: Water Quality Management Functions in Ohio

<u>Function</u>	<u>Lead Implementation Responsibility</u>
Water Quality Monitoring and Assessment	Ohio EPA has lead implementation responsibility
Water Quality Standards Setting	Ohio EPA has lead implementation responsibility
Water Quality Modeling and Total Maximum Daily Loads	Ohio EPA has lead implementation responsibility
Water Quality Management Planning	Ohio EPA and Areawide Planning Agencies have shared planning responsibilities
NDPES Permits Issuance Point Sources Storm Water Permits Pretreatment	Ohio EPA has lead implementation responsibility Ohio EPA has lead implementation responsibility Local POTWs have lead implementation responsibility with Ohio
Public Wastewater Treatment and Conveyances	Local Designated Management Agencies have lead implementation responsibility with Ohio EPA oversight
Sludge Management	Local POTWs have lead implementation responsibility with Ohio EPA oversight: (OAC 3745-40)
Waste Treatment Works Construction State Revolving Fund Loan Management	Ohio EPA and OWDA share management responsibility
Home Sewage Treatment System Management	Local health departments have implementation responsibility with oversight from ODH
Semi-Public Sewage Disposal System Management	Ohio EPA has primary implementation responsibility but delegates some implementation responsibilities to local health departments
Management of Combined Sewers	Local POTWs have implementation and CSO long term control planning responsibility with Ohio EPA oversight
Management of Sanitary Sewers	Local POTWs have SSO long term control planning and implementation responsibility
Nonpoint Source Administration State Assessment State Management Plan Federal Grants Administration State Grants Administration	Ohio EPA has lead implementation responsibility Ohio EPA shares implementation responsibility with ODNR Ohio EPA has lead implementation responsibility ODNR has lead implementation responsibility
Nonpoint Source Controls Storm Water Management Urban Sediment and Runoff Agricultural Pollution	Municipalities and counties have implementation responsibility Counties and municipalities have lead implementation responsibility Voluntary controls by individual landowners are undertaken with incentives provided by USDA
Watershed Planning	Various forms of voluntary planning by state and local agencies are undertaken

- 2) a sewage treatment plant residuals subplan which outlined a coordinated approach to the management and disposal of sewage treatment plant sludge in the planning area;
- 3) a storm water runoff/sediment control subplan, which recommended policies and planning functions for storm water management by various local management agencies in the region, with a role for municipalities, counties, local agricultural agencies, and state agencies. A key recommendation was the implementation of county urban sediment/erosion control programs as permitted by Section 307-79 of the Ohio Revised Code enacted in 1980;
- 4) a rivers and waterways subplan which proposed enactment of legislation whereby projects of regional significance affecting water quality would be subject to a new regional environmental review procedure as well as reviews to be coordinated with local zoning and building permit policies. In addition, the subplan recommended the enactment of Critical Water Resource Protection legislation at the state level;
- 5) an industrial residuals subplan which recommended the establishment of an industrial hazardous waste facility in Northeast Ohio;
- 6) an environmental health subplan which outlined a series of recommendations for improving county level management of home sewage disposal systems in the region;
- 7) a technical program subplan which outlined the water quality data collection and analysis necessary to maintain the plan;
- 8) a continuing planning subplan which spelled out a plan implementation oversight structure and the role of the areawide agencies and local governments in sustaining plan implementation.

THE 1981 NEFCO PLAN

On October 20, 1981, the NEFCO General Policy Board adopted a revised and expanded Clean Water Plan which addressed water quality issues in the four county planning area. The Plan contains recommendations in fifteen separate areas, which address all known water quality problems in the four counties. Six areas address “point source” pollution, primarily caused by then inadequate wastewater treatment plants. Recommendations concerning “nonpoint source” pollution are made in six additional areas. The remaining three areas include recommendations for incorporating water quality information into local government decisions, for an ongoing data collection program to assess water quality, and for the institution of an areawide “continuing planning management structure” to coordinate on-going planning activities relating to water quality management.

NEFCO’s plan is divided into four documents:

- | | |
|-------------|--|
| Volume One: | Summary & Recommendations |
| Volume Two: | Technical Program & Baseline Documentation |

Volume Three: Point Source Documentation
Volume Four: Nonpoint Source Documentation

Implementation and Updates of the 1979 and 1981 Plans

Much has happened with the implementation of the plans in the two intervening decades. The municipal waste treatment components of the 1979 and 1981 plans have been virtually completed. Implementation of the nonpoint source elements has been less successful due in part to the largely voluntary nature of those recommendations. Nevertheless, some counties and cities have made progress in better management of home sewage systems and in the implementation of urban sediment control programs at construction sites. Other plan elements and responsibilities were carried out by the Ohio EPA.

Most recommendations of the earlier plans were predicated on a twenty-year planning horizon. Two decades have passed since then and it is time for a major revisiting of water quality management planning issues in Northeast Ohio. While several minor updates to the original plans were made to address changes to management agencies and wastewater facility planning areas, and to incorporate additional technical studies as they were completed, this plan update represents the first major overhaul of the plan in twenty years.

III. Northeast Ohio's Water Quality Problems Today

The public investments in wastewater treatment anticipated in the 1979 and 1981 plans have produced a remarkable recovery in the quality of water and in the return of aquatic life to many of the region's streams, lakes and rivers and to Lake Erie itself. In spite of these improvements, significant water quality problems remain in the old urban areas of the region largely due to storm water, sanitary sewer overflows and combined sewer overflows.

However, the most widespread threat to water quality currently is occurring from the rapidly developing areas of the region on the periphery of the existing urban areas. This threat comes from a variety of potential sources, including new point source discharges from residential and commercial developments, but most significantly from the combined effects of land disturbances to construct these new developments. This has caused a wholesale transformation of the landscape from rural, sparsely populated, vegetated open spaces to large areas of denser populations with corresponding increases in impervious surfaces (pavements, parking lots, and buildings). This transformation is threatening critical water resources once thought relatively secure from water pollution threats (upland drinking water reservoirs, headwaters areas, and high quality streams once far removed from urbanization). Thus, while the perceived water pollution problems of the 1970s have largely been addressed, there remains a whole new set of water pollution challenges at the turn of the century to be confronted.

IV. The Current 208 Plan Update Goals of this 208 Plan Update

Several goals were established as a framework for plan development:

- 1) The plan should take a watershed and subwatershed approach that coordinates agencies addressing point and nonpoint pollution sources as the basis for management planning;
- 2) The plan should optimize use of the existing investment in infrastructure for development prior to the use of public investments in new infrastructure;
- 3) The plan should be protective of what has been gained in environmental quality and outline measures needed to be undertaken to meet designated uses with particular attention to enhanced protection of critical water resource areas;
- 4) The planning process should be a tool for educating local public decision makers on regional water quality management issues; and
- 5) The plan should be an educational tool to elicit support of the general public for plan implementation.

Focus of this 208 Plan Update

This plan update primarily focuses on the threats to water quality posed by the rapidly developing areas of the region. Thus, attention has focused on issues of planned sewer expansions in the suburban counties, on better management of home sewage systems and semi-public sewage disposal systems, on more vigorous attention to the control of nonpoint source pollution, and on the protection of the region's regionally important water resources.

The plan is also concerned with the problems of the older urbanized areas which for the most part have addressed the problems of point source discharges from sewage treatment plants.

The plan includes three forms of directive: **policies, recommendations and strategies.**

Policies are definitive water quality management planning responsibilities of the designated areawide planning agency (NEFCO).

Recommendations include (1) proposed actions to be undertaken by local public jurisdictions and state agencies to implement the plan under existing authorities of state law or (2) legislative recommendations which require changes in law to implement the plan.

Strategies outline planning steps needed to support implementation of the plan.

The plan represents a vision of the region's future that seeks to balance development and economic growth with a sustainable high quality of the water environment. The plan is a challenge to public officials and the general public to undertake actions to protect the region's water resources for the next generation. It sets an agenda for continuing water quality management planning in NEFCO's counties for the coming decade.

Planning Process to Date

NEFCO and NOACA jointly developed this plan from 1996-2000 with the 208 Task Force of local public officials appointed by the NEFCO and NOACA Boards, and in consultation with representatives of local jurisdictions. Several work groups were formed to assist staff in technical analysis and the formulation of plan recommendations. Public meetings were held at the beginning of the process to set forth plan goals and during the summer of 1999 to discuss the expected scope of the plan recommendations.

V. Steps to Certification

Once the NEFCO Board accepts the draft plan it will be circulated to local jurisdictions, agencies and the public within each area and to Ohio EPA for review and comment. NEFCO will revise the plan in light of comments received, and resubmit it to the NEFCO Board for approval. The final plan will then be submitted to Ohio EPA for certification and to USEPA for approval. Once approved, the plan will become operative. See discussion of timetable in Chapter 11 below.

VI. Plan for this Document

The plan for this document is as follows:

Executive Summary - provides a summary of the plan.

Chapter 1 - provides an overview of the plan.

Chapter 2 - summarizes existing water quality conditions and expected development trends over the next twenty years.

Chapter 3 - presents the plans of local and county jurisdictions concerning new wastewater infrastructure, sewers and wastewater treatment facilities, anticipated to be necessary over the next twenty years. These plans are the result of consultations with county, municipal and township officials who developed the local plans. Chapter 3 also discusses how these sewer plans will be updated.

Chapter 4 - presents recommendations for better management of home sewage systems for those large areas of the region which will remain unsewered over the next twenty years. These recommendations are the result of a year long discussion among the seven county health departments with management responsibility in Northeast Ohio.

Chapter 5 - presents recommendations for implementation of nonpoint source controls by local jurisdictions in several areas including storm water management, riparian protection, urban sediment control, construction site design and others. This chapter also discusses the need for better wet weather standards in the region's urban streams.

Chapter 6 - identifies regionally important water resources in Northeast Ohio and makes a series of recommendations for enhancing the protection of these resources.

Chapter 7 - describes water quality conditions in urban areas of the region and presents an urban streams restoration planning process.

Chapter 8 - makes recommendations on enhancing the role and impact of watershed planning groups in the region.

Chapter 9 - describes the processes by which the counties, local jurisdictions and the public have been involved in the plan's development.

Chapter 10 - presents the program of continuing planning that will be required to assure that the plan is implemented.

Chapter 11 - describes the process by which this plan will be reviewed and certified by the State.

Chapter 2

Current Conditions and Projected Development

This chapter discusses the current water quality conditions in Northeast Ohio. It also addresses population and employment changes that have occurred since 1970, changes which have markedly affected water quality in the region. The last section of the chapter discusses the impacts that may be expected to occur given continuation of existing trends in population and employment over the next two decades.

I. Current Water Quality Conditions in Northeast Ohio

Background

The definitive source of information concerning current water quality conditions in Northeast Ohio is the 305(b) report prepared by the Ohio EPA on a biennial basis. This report is a requirement of Section 305(b) of the federal Clean Water Act which calls for states to submit to U.S. EPA a biennial report summarizing the status and trends in water quality of both surface and ground waters. The intent is for the 305(b) report to be a routine check on the progress that states are making toward achieving the goals of the Clean Water Act. The 305(b) report also acts to provide a baseline of water quality data to gauge changes in response to best management practices. Readers are encouraged to consult the full 305(b) report for details, a copy of which can be found on Ohio EPA's web page at www.epa.state.oh.us.

The bases for the 305(b) report are the periodic surveys of water quality and aquatic life (biosurveys) that Ohio EPA conducts on each major river system throughout Ohio. State priorities and resource availability to perform the survey work dictate the frequency with which watersheds are assessed. Northeast Ohio's major rivers are surveyed on an approximate five-year rotation.

The Ohio EPA's water quality survey goals are to assess the attainment status of water quality standards, to assess whether assigned use designations are appropriate, and to determine if changes in water quality have taken place since previous surveys, and if the changes can be attributed to point and/or nonpoint source controls.

The findings and conclusions of the water quality surveys are published as Water Quality Permit Support Documents (WQPSDs). They may reflect in regulatory actions taken by Ohio EPA e.g. NPDES permits, Director's Orders, the Ohio Water Quality Standards (WQS), and are eventually incorporated into the Ohio Water Quality Management Plan, the Ohio Nonpoint Source Assessment, and the Ohio Water Resource Inventory (305(b) Report).

Historical surveys conducted by the Ohio EPA in the Cuyahoga River basin include basin-wide chemical and biological surveys in 1984, 1991, 1996 and 2000. The 1991 and 1996 surveys are documented in the reports titled "Biological and Water Quality Study of the Cuyahoga River and Selected Tributaries Geauga, Portage, Summit, and Cuyahoga Counties (Ohio) dated August 19, 1994 and August 15, 1999" respectively. Mainstem biological surveys between Akron and Lake Erie were conducted in 1985, 1986, 1987, and 1988, and intensive chemical and biological surveys of the Little Cuyahoga River subbasin in 1986 and 1996. The 1996 Little Cuyahoga River survey is reported in the April 14 1998 "Biological and Water Quality Study of the Little Cuyahoga River and Tributaries (Portage and Summit Counties)". In addition, water quality data has been collected monthly from the Cuyahoga River National Ambient Water Quality Monitoring Network (NAWQMN) stations at Independence (RM 13.18), Lower Harvard Ave (RM 7.10) and West Third Ave (RM 3.26) over the past 20 to 26 years. A new monthly station was added in 1994 at Shalersville (RM 64.3) in Portage County to monitor expected changes in water quality due to anticipated land development as a result of changes in the transportation network in the upper section of the watershed. Biological sampling has also been routinely conducted at the NAWQMN stations over the same period.

Water Quality Standards Applicable to Northeast Ohio

Protecting the safety of the public is accomplished through the Ohio Water Quality Standards. As articulated in the Ohio Water Quality Standards:

It is the purpose of these water quality standards, Chapter 3745-1 of the Administrative Code, to establish minimum water quality requirements for all surface waters of the state, thereby protecting public health and welfare; and to enhance, improve and maintain water quality as provided under the laws of the state of Ohio, section 6111.041 of the Revised Code, the federal Clean Water Act, 33 U.S.C. section 1251 et seq., and rules adopted thereunder (Ohio EPA, 1997).

The analyses of biological criteria in a stream recognizes the assimilative ability of a stream and subsequent response by flora and fauna to levels of pollution. In general the more degraded the biological community the greater the threat of a disease-causing condition that could deleteriously affect human health.

Water quality standards consist of numerical standards geared to attainment of designated stream uses. Use designations consist of two broad groups, aquatic life and non-aquatic life uses. There are five different aquatic life uses currently defined in the Ohio WQS that apply to Northeast Ohio streams. These include: Warmwater Habitat (WWH), Exceptional Warmwater Habitat (EWH), Coldwater Habitat (CWH), Modified Warmwater Habitat (MWH), and Limited Resource Water (LRW).¹

The vast majority of segments in Northeast Ohio are designated Warmwater Habitat. There are some notable exceptions. The Cuyahoga River basin has numerous streams that are classified as Modified Warm Water Habitat or as Limited Resource Waters. Streams that are

¹**Warmwater Habitat** (WWH) - this use designation defines the “typical” warmwater assemblage of aquatic organisms for Ohio rivers and streams; this use represents the principal restoration target for the majority of water resource management efforts in Ohio. **Exceptional Warmwater Habitat** (EWH) - this use designation is reserved for waters which support “unusual and exceptional” assemblages of aquatic organisms which are characterized by a high diversity of species, particularly those which are highly intolerant and/or rare, threatened, endangered, or special status (i.e., declining species); this designation represents a protection goal for water resource management efforts dealing with Ohio’s best water resources. **Coldwater Habitat** (CWH) - this use is intended for waters which support assemblages of cold water organisms and/or those which are stocked with salmonids with the intent of providing a put-and-take fishery on a year round basis which is further sanctioned by the Ohio DNR, Division of Wildlife; this use should not be confused with the Seasonal Salmonid Habitat (SSH) use which applies to the Lake Erie tributaries that support periodic “runs” of salmonids during the spring, summer, and/or fall. **Modified Warmwater Habitat** (MWH) - this use applies to streams and rivers which have been subjected to extensive, maintained, and essentially permanent hydro modifications such that the biocriteria for the WWH use are not attainable and where the activities have been sanctioned and permitted by state and federal law; the representative aquatic assemblages are generally composed of species which are tolerant to low dissolved oxygen, silt, nutrient, enrichment, and poor quality habitat. **Limited Resource Water** (LRW) - this use applies to small streams (usually less than a three square mile drainage area) and other water courses which have been irretrievably altered to the extent that no appreciable assemblage of aquatic life can be supported; such waterways generally include small streams in extensively urbanized areas, those which lie in watersheds with extensive drainage modifications, those which completely lack water on a recurring annual basis (i.e. true ephemeral streams), or other irretrievably altered waterways.

in the modified category include portions of the Ohio Canal, Fish Creek, Congress Lake Outlet, and Wahoo Ditch. Limited waters include part of Wahoo Ditch, Kingsbury Run, Morgana Run, the Burke Branch, the Ford Branch of Big Creek, Wood Creek, and Pond Brook.

The Ohio EPA employs biological criteria that have been codified in the Ohio Water Quality Standards (WQS) to ascertain the attainment status of aquatic life uses in streams.² It uses three different indices to measure fish and macroinvertebrate community characteristics and to determine if aquatic life uses are in FULL, PARTIAL or NON-ATTAINMENT status. Attainment of aquatic life use is in FULL ATTAINMENT if all three indices meet the applicable criteria, PARTIAL ATTAINMENT if at least one of the indices does not attain and biological community performance is at least fair, and NON-ATTAINMENT if all indices fail to attain, or any index indicates poor or very poor performance. PARTIAL ATTAINMENT or NON-ATTAINMENT indicates that the receiving water is impaired and does not meet the designated use criteria specified by the Ohio WQS.

Figure 2-1 compares the biological integrity of Northeast Ohio's streams to 106 Ohio Rivers statewide. It is based on a tool developed by Ohio EPA, Biological Integrity Equivalents (BIE), that integrates the three Ohio EPA biological indices into a single value on a scale of 0-100. The BIE includes measures of the fish and macroinvertebrate community structure and health of rivers and stream segment. The ranking reflects the degree to which biological integrity is achieved or the degree of impairment. The system is older and no longer used. It does serve a purpose to gage the relative health of the stream in the region in 1991. For additional details the reader is referred to the Ohio EPA 2000 305(b) report.

The aquatic life use designations, the attainment status evaluation, and the BIE all serve to document existing conditions and trends within the rivers and streams of Ohio. The following discussion summarizes conditions in the streams of Northeast Ohio based on these tools.

Water Quality Trends in Northeast Ohio

The Ohio EPA has identified that major changes have occurred, which have contributed to the improvements in current statewide water quality conditions. The Ohio EPA notes that most of these water quality improvements can be attributed to improvements in point source control and that future threats to water quality will come from nonpoint sources of pollution. Their assessment is applicable to Northeast Ohio as well. The Ohio EPA states:

“the impacts from nonpoint sources of pollution, such as combined sewer overflows, urban storm water, siltation of substrates, and habitat degradation, agricultural and storm water run-off, etc., are becoming increasingly evident as historically more pronounced impacts from point sources e.g. municipal WWTPs, some industrial effluents, are reduced. Since 1988, there has been a 48% decline in point sources as a major source of impairment in reassessed streams in Ohio...Nonpoint sources have emerged as a major source of impairment in streams and rivers during this period...River and stream attainments will not

²Ohio Administrative Code {OAC} 3745-1-07, Table 8-14.

be achieved by the restoration of point source related impairments alone. Even if point source associated impairment is virtually eliminated (and assuming no new nonpoint source impacts are revealed) the result would be over 70% of streams and rivers fully attaining aquatic life criteria. Given these facts, “new” successes in controlling, abating, and preventing nonpoint and other sources of impairment will be needed.”

“While successes resulting from the abatement of point sources have been documented, there are other indications that impact from nonpoint source runoff, habitat degradation, and watershed disturbances may be worsening. Siltation of substrates i.e. stream bed, stream channel, stream bottom, etc. and habitat degradation are now the second and third leading causes of aquatic life impairment in Ohio streams and rivers, surpassing ammonia and heavy metals. These impairments are principally the result of agricultural land use, intensive urbanization, and suburban development, the latter of which is emerging as one of the most

Figure 2-1

Statewide Rating of the Biological Integrity of N.E. Ohio River and Stream	Narrative Rating	Cultural/Watershed Influences & Characteristics
<p style="text-align: center;"><u>Ranking</u></p> <p>21. Grand River (1995)</p> <p>27. Upper Cuyahoga R. (1991)</p> <p>36. Chagrin River (1995)</p> <p>50. W. Br. Rocky River (1992)</p> <p>51. E. Br. Rocky River (1992)</p> <p>61. E. Br. Black River (1992)</p> <p>73. W. Br. Black River (1992)</p> <p>80. Black River (1992)</p> <p>84. Rocky River (1992)</p> <p>88. Lower Cuyahoga R. (1991)</p> <p>96. Lower Cuyahoga R. (1990/91)</p>	Exceptional	Highest quality Ohio stream and riverine resources with exceptional quality biological assemblages, significant populations of imperiled species, high quality instream and riparian habitat (effects of nonpoint sources are mitigated by these characteristics); point source impacts are generally minimal to nonexistent; significant recovery has occurred in some due to WWTP upgrades.
	Very Good	High quality Ohio streams and rivers, most with intact instream and riparian habitat; significant recovery has occurred in some due to WWTP upgrades.
	Good	Typifies characteristics common to most Ohio stream and riverine resources; quality of instream and riparian habitat is generally good at most locations; effects of point and/or nonpoint sources are more evident significant recovery has occurred in some areas due to WWTP upgrades.
	Marginally Good	Increase non-attainment of WWH evident; marginal attainment of WWH at many locations; effects of point and/or nonpoint sources are increasingly evident; riparian and instream habitat degradation, siltation, and nutrient enrichment are increasingly important factors; recovery from point source impacts is incomplete and may be inhibited by these factors.
	Fair	Few sites attain WWH, non-attainment at most sites due to watershed-wide riparian and instream habitat degradation, agricultural and suburban nonpoint sources, industrial and municipal WWTP impacts and/or non-acidic mine drainage; recovery from point source impacts is incomplete and may be inhibited by other factors.
	Fair-Poor	Very few or no sites attain WWH; non-attainment due to extensive riparian and instream habitat degradation, agricultural and urban nonpoint source, CSOs, urban/industrial impacters, and/or sediment contamination; recovery from point source impacts is negligible or masked by other factors.
	Poor	Extensive WWH non-attainment with poor biological assemblages; significant urban/industrial impacts; little or no recovery is evident.
	Very Poor	Extreme degradation due to residual problems; very low recovery potential.

Source: 1996 Ohio Water Resources Inventory 305(b) Report by Ohio EPA

significant threats to watersheds...Increasingly, water pollution problems are associated with nonpoint sources such as, construction sites, farm land, abandoned mines, landfills, pits and lagoons, oil and gas wells, domestic sewage systems, manure and treatment processing residuals.”³

The following discussion summarizes water quality conditions within the Cuyahoga watershed in Portage and Summit Counties. Each watershed is discussed in terms of its water quality standards attainment status, of gains or losses in overall water quality since the development of the original 208 CWP, and the outlook for the future.

Cuyahoga River Watershed: Figure 2-2 summarizes current water quality conditions in the Cuyahoga River watershed. In the upper Cuyahoga River (in Geauga and Portage Counties) the river has been identified as being in Full Attainment except in a few segments. The East Branch is most heavily impacted stretch with one segment in non-attainment and the balance in Partial Attainment. From the confluence of the East Branch and the West Branch to the Portage County line, the river is in partial attainment of the standard. A twenty-five mile portion of the Cuyahoga River, through this stretch, from the Troy/Burton Township line in Geauga County to River Mile 60.76 (Route 14) in Portage County, has been designated a State Scenic River.

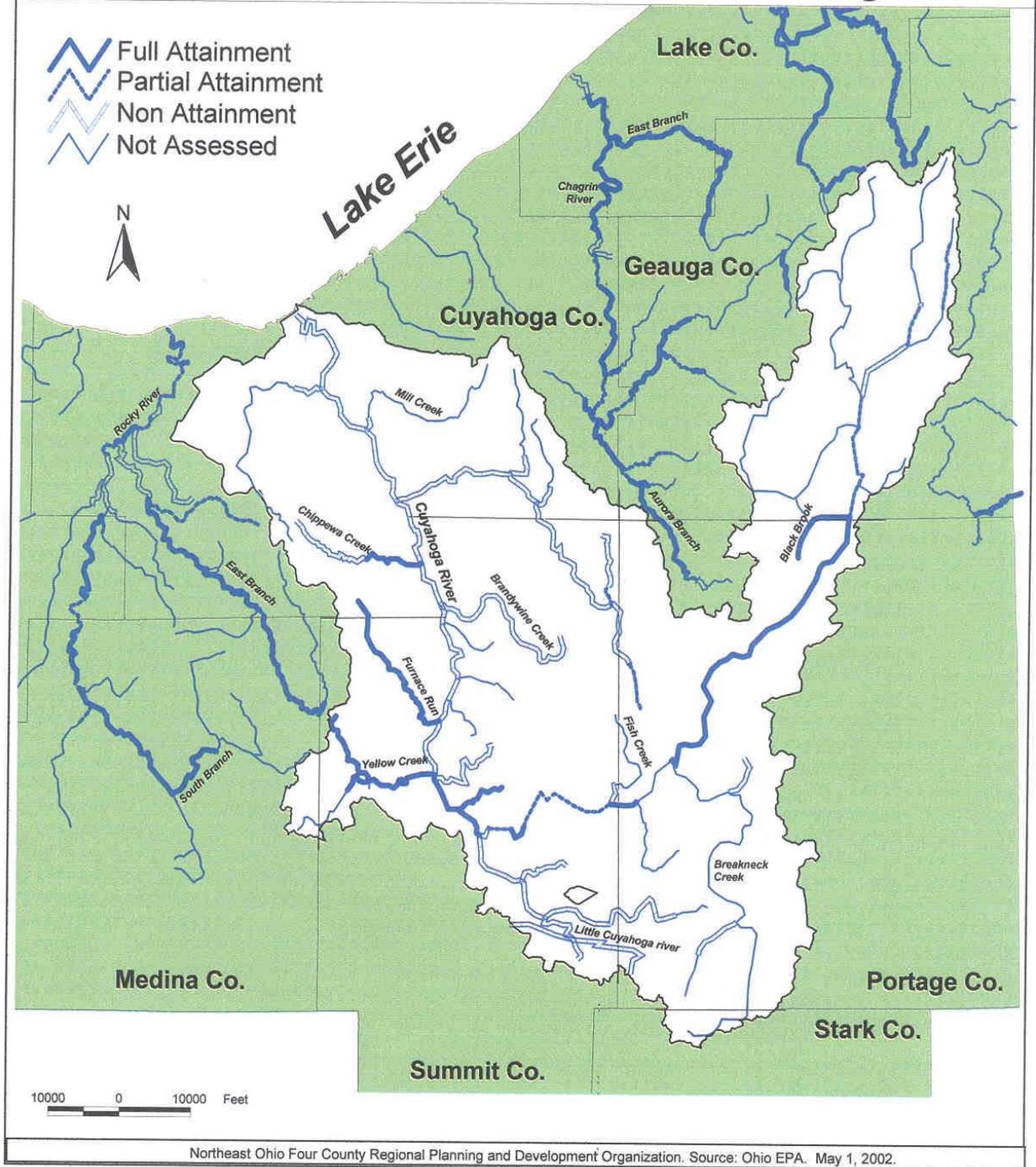
Much of the middle Cuyahoga River which lies in Portage and Summit Counties upstream of the confluence with the Little Cuyahoga River is in full and partial attainment of the standards. The lower 45 miles of the river, from the Ohio Edison Dam upstream of the confluence of the Little Cuyahoga is an Area of Concern subject to Remedial Action Plan requirements of the Great Lakes Water Quality Agreement.⁴

The Cuyahoga River has greatly improved since 1984. Most improvements were due to municipal and industrial wastewater treatment plant upgrades, sanitary and combined sewer overflow remediations, and pretreatment programs at industrial facilities. The Cuyahoga’s habitat status in the navigation channel limits biological recovery. Habitat above the navigation channel has improved in many locales but is threatened in rapidly urbanizing areas of the watershed.

³Ohio Water Resources Inventory: Executive Summary (Ohio EPA, 1996), pp. 11-13.

⁴Cuyahoga River Remedial Action Plan Stage One Report (Cuyahoga River RAP Coordinating Committee, 1992; 1995).

Figure 2-2
Water Quality Standards Use Attainment
of Lake Erie Tributaries in the NEFCO Region



The Upper Cuyahoga River is ranked second in Northeast Ohio and 27th statewide by the BIE index. It received a ranking of “good”. In “good” streams and rivers the quality of the in-stream and riparian habitat is good at most locations, while the effects of point and nonpoint source pollution are not evident.

The Lower Cuyahoga River was evaluated twice, once with 1991 data, and once with 1986 and 1991 data combined. Both times the river fell within a “fair to poor” classification. With 1991 data alone, the lower Cuyahoga ranked 88th in Ohio. The fair to poor classification indicates that very few if any sites attain warmwater standards and there is very extensive riparian and in-stream habitat degradation due to urban development and non-point problems, combined sewers overflow (CSOs), sanitary sewer overflows (SSOs), industrial impactors and sediment contamination. Tinkers Creek is ranked right below the lower Cuyahoga and is also in the fair to poor category.

II. Regional Population & Employment Developments Since 1979

A significant factor influencing water quality in Northeast Ohio is the continuing dispersal of people and jobs. This dispersal is an ongoing phenomenon, affecting people, businesses and communities in complex ways.

Population Trends

The region’s devastating loss of manufacturing industries in the late 1970s and early 1980s precipitated widespread population declines in many communities. This declining trend, however, was reversing in the early 1990s. The 2000 Census figures reveal further evidence that the area is recovering. Both Summit and Portage Counties experienced positive percentage changes in population from previous decades that surpassed those of the state of Ohio. Summit County experienced a 5.4 percent population increase over the last decade, and Portage County saw a 6.6 percent growth in numbers between 1990 and 2000. Table 2.1 depicts these population trends.

Table 2.1 Population Change 1980-2000					
				Percent Change	
	1980	1990	2000	'80-'90	'90-'00
Portage	135,856	142,585	152,061	5.0%	6.6%
Summit	524,472	514,990	542,899	-1.8	5.4
NEFCO	1,136,559	1,126,621	1,184,622	-0.9	5.1
Ohio	10,797,604	10,847,115	11,353,140	0.5	4.7

Source: U.S. Bureau of Census, 2000; Ohio County Profiles, State of Ohio, Office of Strategic Research, 2001

Comparing Ohio's 88 counties in population percentage change between 1990 and 2000, both Portage and Summit Counties moved up in rank. Portage and Summit Counties' population percentage changes for the same period ranked them 37th and 44th in the state, placing them at or above the median among all counties.

Although the NEFCO region as a whole saw population losses between 1980 and 1990, the turnaround and resulting population growth of over 5 percent is evidence of a stable region that has made many efforts to preserve economic gains and to provide a good quality of life for its residents. As in many other locations, Portage and Summit Counties have communities which exhibit high population growth and the resulting increased need for services. Other communities within these counties face the challenges of failed septic systems or old systems in need of repair. Meeting the current infrastructure needs and planning for future expansion in stable and high-growth areas will be necessary.

Employment Trends

Just as population patterns may potentially affect the area's water quality, so do employment trends. In Summit County, the past two decades were marked initially by severe economic disappointments as many of the rubber industries moved south, followed by an economic turnaround as economic diversification and the rise of the polymer industry redefined the area.

Table 2.2 describes the annual averages of the civilian labor force, employment, unemployment and unemployment rates for Portage and Summit Counties and the state of Ohio in 2000. Unemployment rates in these counties remained low and echoed state and national trends. The annual average percentage for 2000 for these counties mirrored the state and national rates. The low rates are similar to those from previous years; however, some of the area's larger cities exhibit unemployment rates similar to or exceeding national trends.

The national economic situation is certain to have an effect locally; however, it is still too early to determine the specific economic impacts following September 11, 2001.

Table 2.2 Civilian Labor Force Estimates Annual Averages – 2000				
Area name	Civilian Labor Force	Employment	Unemployment	Unemployment Rate
Portage	83,700	80,300	3,400	4.1
Summit	282,900	270,700	12,200	4.3
Ohio (seasonally adjusted)	5,857,000	5,606,000	251,000	4.3

Source: Ohio Department of Job and Family Services, Labor Market Information website, March 2002

Overall, Ohio’s economy has been healthy, with officials reporting a large number of business expansions over the past few years. Table 2.3 denoting net business formations between 1995 and 2000 shows net losses in the numbers of businesses largely occurring in 1997. Portage County also reported a net loss in 2000; however, the loss amounted to four businesses.

Table 2.3 Net Business Starts 1995-2000						
Area	1995	1996	1997	1998	1999	2000
Portage	89	55	-8	48	not available	-4
Stark	191	164	-48	27	not available	64
Summit	362	373	88	162	not available	72
Wayne	13	70	11	42	not available	32
NEFCO	655	662	43	279	not available	164
Ohio	4,648	5,762	-1,105	1,081	not available	849

Source: Ohio County Indicators, 2001.

Over the past years, the manufacturing sector declined in Summit County. Overall, however, the region has a healthy balance of economic sectors, with manufacturing industries largely concentrated in the older, urban areas. As in many other places, trade and services are a significant part of the local economies in Portage and Summit Counties (Table 2.4).

Table 2.4 2000 Employment by Industry*				
	Portage	Summit	NEFCO	Ohio
2000 Total Employment	52,770	265,069	541,271	5,460,117
Agriculture/Forestry/Fishing	790	1,972	4,534	46,330
Manufacturing	14,112	49,740	123,269	1,062,145
Construction	2,403	11,498	24,908	247,533
Transportation/Utilities	1,101	13,740	20,582	241,105
Trade	11,999	70,649	137,462	1,366,254
F.I.R.E.**	1,021	13,085	22,376	298,934
Services***	9,909	76,258	142,958	1,507,591
Mining	300	280	1,406	12,678
Government	11,150	27,850	63,796	657,744

Source: Ohio Department of Development, Office of Strategic Research, Ohio County Profiles, 2000.

- * Some of the figures do not include the industries that reported a range of employees; other figures show a range of jobs as reported.
- ** F.I.R.E. - Finance, Insurance, Real Estate
- *** Services include: Professional, scientific, technical services; Management of companies; educational services; health care; arts/recreation; accommodation and food services; and other services (except public administration).

A key factor in ensuring the health of the area's manufacturing base while maintaining water quality has been the development and use of regulations allowing brownfield redevelopment. Planners in the area's larger cities, Akron and Barberton, have made exceptional use of former brownfields. Other cities such as Kent are also exploring redevelopment of brownfields to increase their tax base and curb urban sprawl.

Future Changes in Regional Population and Employment

Current trends are expected to continue, with economic diversification and population growth or stabilization characterizing Portage and Summit Counties. As noted above, the local economic effects of the economic downturn in the fall of 2001 are yet to be determined. However, it is apparent from the area's ability to weather economic disasters that the region has critical measures in place and is not new to responding to events that threaten the health of the economy. Northeast Ohio has a diverse industrial base that is likely to sustain the Summit-Portage population, even with the loss of key industries. The continued development of the polymer and liquid crystal industries will be factors in both attracting complementary industries and retaining and creating jobs for the region's labor force. Continued upgrading of the transportation

network, as well as the future possibility of a commuter rail system should serve to maintain and increase population and employment in the region.

Conclusion

The most recent concern to water quality today is occurring in the rapidly developing areas of the region on the periphery of the existing urban areas. This threat comes from a variety of potential sources, including nonpoint source discharges from residential and commercial developments, but most significantly from the combined effects of land disturbances to construct these new developments. This transformation is threatening regionally important water resources once thought relatively secure from water pollution threats (upland drinking water reservoirs, headwaters areas, and high quality streams once far removed from urbanization). Thus, while the perceived water pollution problems of the 1970s have largely been addressed, there remains a whole new set of water pollution challenges at the turn of the century to be confronted. Land uses will change from a predominantly rural character to urbanizing uses, and this will affect whether water runs off the land surface or seeps into the ground. This trend will have an impact on water quality.

Chapter 3

Wastewater Management Facilities Planning

This chapter updates wastewater management facilities planning areas (FPA) for the NEFCO Lake Erie Basin 208 Plan Areawide study and identifies local jurisdictions to be designated as management agencies (DMA) under Section 208 of the Federal Clean Water Act and included under the Clean Water Plan (CWP) for wastewater management planning. It identifies wastewater management options and prescriptions within each facilities planning area that were developed by the DMA with the advice of affected local jurisdictions. These options represent current judgments about where sewers will be extended and where areas will remain unsewered over the course of the next twenty years.

Once the CWP is adopted, certified and approved, these DMAs, FPAs and wastewater management options and prescriptions become part of the region's CWP. The Ohio EPA's decisions concerning certain National Pollutant Discharge Eliminating System (NPDES) permits, permits to install (PTI) and State Revolving Fund (SRF) loans for wastewater treatment must be consistent with the CWP.

This chapter presents policies to enhance governing areawide coordination of local wastewater management planning. These policies address:

- (1) DMAs and their FPA boundaries for wastewater management planning; (policy 3-1)
- (2) Modifications to FPA Boundaries; (policy 3-2)
- (3) Development of Local Wastewater Management options and prescriptions; (policy 3-3)
- (4) Ohio EPA and USEPA 208 Plan Consistency Actions; (policy 3-4)
- (5) Utilization of Areawide Population Projections; (policy 3-5)
- (6) Modifications to DMAs; and (policy 3-6)
- (7) Nomination of New DMAs; (policy 3-7)

The chapter also includes recommendations for (a) conforming the land use plans of local jurisdictions to the CWP, and (b) recognizing the use of Joint Economic Development District (JEDD) procedures for the extension of wastewater services to currently unsewered areas.

I. Introduction

Water quality planning requirements are specified in Sections 205(j), 208 and 303 of the Clean Water Act (CWA). Municipal waste treatment is among the nine elements to be included or referenced as part of the CWA elements.¹ It is among the six elements in which areawide planning agencies are actively involved in Ohio.

¹40CFR130.6(c)(3).

In response to a court challenge, Ohio EPA has established a standard process for the review of NPDES permit and Permit to Install (PTI) applications statewide. (In areas of the state outside of the jurisdiction of areawide planning agencies, the Ohio EPA has begun the process of updating 208 Plans. In designated areas of the state, the Ohio EPA has requested that area wide agencies update the corresponding areawide 208 Plan element for municipal waste treatment.) The Ohio EPA addresses the full scope of Ohio's Water Quality Management planning in its Continuing Planning Process (CPP) document.²

One of the objectives of Section 208 of the Clean Water Act was to establish integrated and coordinated facility planning for wastewater management. In order to accomplish this objective in urban areas where competition for service areas was expected to be a concern, the Clean Water Act called for the designation of areawide planning agencies to assist in the resolution of such conflicts as they might arise.

NOACA is designated under Section 208 as the planning agency for Cuyahoga, Geauga, Lake, Lorain, and Medina Counties. NEFCO is designated as the planning agency for Portage, Stark, Summit and Wayne Counties. NEFCO and NOACA consult on planning matters in the watersheds that are shared by parts of both planning areas. The two major Lake Erie watersheds in this shared category are the Cuyahoga River and the Chagrin River, but also includes portions of the Rocky River and Grand River in Summit and Portage Counties respectively.

DESIGNATED MANAGEMENT AGENCIES UNDER THE ORIGINAL 208 PLANS

The 1981, the NEFCO 208 CWP established the basis for evaluating all sewerage plans that have been proposed over the twenty years since the 208 Plan was adopted. For each area where sewers were being planned, a single local management agency was designated for all facility planning. This agency became a DMA for wastewater management planning under this element. DMAs include municipalities, counties, and sanitary sewer districts authorized under Ohio law to perform these functions. As part of the DMA designation process, the owners/operators of Publicly-Owned Wastewater Treatment Works (POTWs) were designated by the 208 Plan to have the authority for sewer-related planning in clearly demarcated boundaries. These boundaries were commonly referred to as 201 boundaries (after Section 201 of the Clean Water Act) and are now known as FPAs. For each FPA delineated, the local wastewater management agency became the primary designee (the DMA) for sewer planning in the established FPA into the future. The 1981 CWP also recognized Summit and Portage Counties as DMAs for wastewater planning for the unincorporated portions of their respective counties that lie inside and outside of established FPAs. In cases where the unincorporated area lies within an established FPA, county wastewater planning was incorporated into the lead DMA's facilities plan. A DMA of either type was recognized as a lead agency within its FPA by the 208 Plan and was charged with the responsibility of identifying plans to solve existing wastewater related problems and to accommodate projected growth over a twenty year time

²Ohio EPA, "Continuing Planning Process." 1998.

frame.

The DMA designation process prevented two separate treatment facilities from planning for the same area. This was important because cost/benefit and feasibility analyses hinged on the projected service demand. The sizing of sewer lines and wastewater treatment plants (WWTPs) had to reflect existing and projected populations. If POTWs competed for the same customers, the duplication of service would be cost prohibitive, could result in plant operation problems, or both. All FPA boundaries that were certified in the 1981 Plan specified the entity that is the DMA in every area where sanitary sewers were in place or were being considered.

Many FPAs encompass land areas that lie outside of the political jurisdiction boundaries of the DMA responsible for wastewater planning. The CWP recognizes that service agreements can exist between a POTW owner/operator and the adjacent jurisdictions serviced by that POTW. Those agreements can specify which wastewater planning functions are to be assumed by the Secondary DMAs. Each satellite jurisdiction named in an agreement is recognized as a DMA for wastewater management planning in accordance with the service agreement with the POTW owner/operator.

FACILITIES PLANNING AREA STATUS UNDER THE ORIGINAL 208 PLANS

The rationale for the delineation of the FPA boundaries in the original NEFCO Plan varied. Some communities limited their planning area to their existing jurisdictional authority. Others extended their planning area boundaries outside of their jurisdictional boundaries based on the sewershed concept (areas that drain by gravity to a treatment works or could be handled efficiently with the limited use of pump stations). In some areas, the County Sanitary Engineer assumed the facilities planning role for all or much of a county.

During the time that the 208 Plan was developed, there was little conflict in the establishment of FPA boundaries. Conflicts that did arise were resolved to the satisfaction of all parties and incorporated into the Plan. Before the Ohio EPA accepted any FPA boundary definition, affected municipalities and counties had to agree on the boundary. As a result of this, facility planning proceeded in a timely manner at most of the region's POTWs.

Subsequent to the adoption of the 1981 208 Plan, disputes between POTWs started to arise. As time passed and plans began to be implemented, numerous small coordination issues arose. A major one involved the extension of interceptor lines proposed by the Northeast Ohio Regional Sewer District into areas which were currently being served by municipally-owned POTWs. Locally another dispute arose when Summit County sent flows from the County's Hudson Plant to Fish Creek (WWTP) by pumping rather than via gravity through the Mud Brook Interceptor to the Akron WWTP. Each of these conflicts was resolved by a conflict resolution process established under the auspices of the region's 208 Plans. This process helped to provide for the orderly implementation of facility planning and sanitary sewer infrastructure construction under the 208 Plan.

Planning for future wastewater treatment needs is an inexact science. Assumptions are made relative to the size and extent of population growth. During the engineering phase of some projects, situations sometimes arise so as to render previously preferred alternatives impractical. With time, local conditions can change resulting in modifications to previously preferred alternatives. New treatment works continue to be proposed to meet growth demands.

Most existing FPAs were established as part of the Construction Grants Program established under Section 208 of the Clean Water Act to help fund sewage treatment improvements. For the 208 Plan, a FPA was typically subdivided into three general categories. These include (a) areas that are already served with sanitary sewers; (b) areas that would most likely be sewer during the next 20 years; and (c) areas where sewers were not likely to be extended for at least 20 years. The decision as to the classification of any given area was made by the DMA in accordance with planning guidelines established by USEPA. The charge to each DMA was to develop a plan to provide for adequate wastewater treatment over the 20 year time frame. They had to project and allocate growth within their planning area and identify options for wastewater management. Many communities were able to take advantage of federal funds made available for this purpose. Other communities were unable to meet the eligibility match requirements for these grants and developed general sewerage plans in consultation with the Ohio EPA.

No matter what facility planning actions were taken in the past, there had to be a rationale for each decision made by DMAs. The Ohio EPA had to concur with each of these decisions, at least as to the effects that they would have on receiving streams. DMAs had to develop and implement plans that would satisfactorily solve pollution problems associated within their sewer district. Expansion of a service area beyond that identified in the facility plan was allowed as long as they met all applicable water quality standards and had received the consent of affected communities.

CONSISTENCY REVIEWS UNDER THE ORIGINAL 208 PLANS

Under the 208 Plan, a Consistency Review was required whenever an application was made by a DMA for federal grants or loans under the Clean Water Act. This application could be to increase an existing discharge amount, to extend new sewer lines into a previously unsewered area, or to install an entirely new discharge. As the Areawide Planning Agency, NEFCO is responsible for evaluating consistency in its respective area. The following procedures were followed in determining consistency within the 208 Plan.

All proposed projects that were seeking funding assistance were reviewed for consistency with regional population projections. This was done for two reasons. The Clean Water Act provides financial assistance only to those projects which serve existing and projected populations. The Act does not support the building of excess capacity as a means to attract development that would have occurred elsewhere. Such a move could undermine the efficiency or cost effectiveness of other treatment works. The regional review of population figures used to size the proposed facility also identified optimistically high projections that

could lead to the inability of a community to financially support its POTW if its projections are not realized.

As time passed, the population projections contained in the original Plans became outdated. A plan update was accomplished in 1984 to update the population projections that were recalculated following the release of the 1980 census. NEFCO currently utilizes population projections based on the 1990 census as reference for consistency review purposes. After the Year 2000 census is completed, and new county projections are prepared by the Ohio Department of Development, Office of Strategic Research, new local population projections will be developed for this purpose.

NEFCO reviewed an applicant's population projections for consistency with areawide projections. If they were not consistent, the applicant was notified of the discrepancy and the Ohio EPA was notified of the differences. The Ohio EPA then worked with the community in question to examine the potential consequences if a community's projections are not realized. The Ohio EPA then ultimately determined whether the project should proceed as designed.

NEFCO also reviewed the adequacy of the project's selected treatment alternative. Often the old 201 plans contained a listing and analysis of various approaches to wastewater treatment for an area, followed by a recommended option. NEFCO incorporated a review of this recommendation in its consistency review.

Under the original 208 Plan, any action proposed by the DMA was deemed consistent with the plan as long as it; a) met Ohio EPA's technical requirements; b) consisted solely of actions that were within the existing FPA boundary; c) conformed to regional population projections, and d) adequately treated wastewater. If a DMA planned to extend service outside of its established FPA boundary, consistency was not attained until all affected parties agreed to the need for the change. This meant that Ohio EPA had to agree that the proposal represented a viable alternative for providing adequate waste treatment in an efficient manner. If a proposal infringed into the FPA of an adjacent DMA, the applicant had to secure the permission of the neighboring DMA. If the applicant proposed to extend service into any area where no facility planning had yet taken place, the proposal was deemed consistent with the 208 Plan as long as the local community officials affected by the extension agreed to it and the Ohio EPA approved it.

While most of these projections and allocations incorporated into the original 208 Plans proved to be accurate, some areas did develop faster or slower than expected. During the time that has elapsed since the original facility plans were prepared, some elements were implemented as designed. Other elements were implemented with changes. A few elements were not implemented at all. In some circumstances, plans were made and implemented that were not considered in the original 208 Plan. This CWP update makes the FPA boundaries current and provides an orderly process for future revisions.

II. Updating the Designation of Management Agencies, Facilities Planning Areas, and

Consistency Review Policies

Definition of Primary (lead) DMA and Secondary DMA

Governmental entities within Facilities Planning Areas; which have the right to plan for wastewater treatment and conveyance are referred to as designated management agencies (DMAs).

For the purposes of this Clean Water Plan, typically for each Facilities Planning Area, a single governmental entity is the “Primary Designated Management Agency,” which treats the wastes (wastewater). A **Primary DMA** must have the capacity to comply with the list below as well as **to refuse to receive any wastes (wastewater) from any municipality, or subdivision thereof, which does not comply with any provision of the Clean Water Plan.**

Typically, the **Primary DMA** is the county or municipality that owns and operates the central wastewater treatment plant (WWTP). In cases where a DMA uses the services of a primary DMA’s WWTP or where a 6119/9117 township and county sewer district exists, these entities will be considered as **Secondary DMAs**, responsible for building, operating, and maintaining the sewers under their jurisdiction. The **Secondary DMA** has local responsibility for facilities planning and requesting Plan Amendments as necessary within the boundaries of its sewer district (subject to a sewer agreement(s) with the Primary DMA). There may be more than one Secondary DMA within each FPA using the WWTP of a Primary DMA.

The following is provided as background information on designated management agencies.

Depending on its assigned role, a Primary DMA must have the capacity to (text shown in bold taken from Section 208 of the Clean Water Act):

- have legal authority to provide service to its area;
- **carry out its assigned portion of the areawide waste (wastewater) treatment management plan;**
- **accept and utilize grants, or other funds from any source, for wastewater treatment management or nonpoint source control purposes;**
- **raise revenue, including the assessment of waste (wastewater) treatment charges or other necessary funding, to implement its assigned portion of the Plan.** Needed revenues may include staff funding, or for DMAs that own or operate POTWs, assessments of wastewater treatment charges;
- cooperate with and assist the NEFCO Environmental Resources Technical Advisory Committee (ERTAC) in the performance of its Plan responsibilities;
- **accept for treatment industrial wastes (wastewater);**
- **manage effectively waste (wastewater) treatment works and related facilities**

serving such an area in conformance with the Plan and effectively manage POTW and related point and nonpoint source facilities and practices in conformance with the Plan;

- **directly or by contract, to design and construct new works, and operate and maintain new and existing works as required by the Plan;**
- **incur short- and long-term indebtedness;**
- **assure in implementation of an areawide waste (wastewater) treatment management plan that each participating community pays its proportionate share of treatment costs.**

For this plan update, NEFCO and responsible management agencies undertook a comprehensive review of DMAs and FPAs in the original 208 Plan, to update DMAs and FPAs to reflect current conditions. This was done by circulating maps of FPAs from the original 208 Plans with a request that the Primary and Secondary DMAs consult with affected jurisdictions to update the maps. Treatment plants constructed after the original planning period were also identified and their lead agencies were contacted. DMAs were asked to identify in their respective FPA the following:

- (1) areas currently served with sanitary sewers; (yellow)
- (2) areas expected to be served with sanitary sewers within the next twenty years; (orange)
- (3) areas that will be served by a publicly-owned treatment works (POTW) or by home sewage disposal systems (HSDSs) (home sewage treatment systems (HSTSs)) and semi-public sewage disposal systems (SPSDSs); (green)
- (4) areas that will be served by nondischarging (including underground injection or infiltration basins) HSDSs (HSTSs) and SPDSs (cream); and
- (5) areas without a wastewater treatment planning prescription. (white)

The results of this effort were then used to update county facility planning maps and circulated for review and comment to affected local and county jurisdictions. This process generated ongoing planning discussions in each of the counties involved with the plan update.

This update process also identified which local or county jurisdictions currently have responsibilities for wastewater facility planning. These jurisdictions, shown in Table 3-1, have management responsibilities for facility planning associated with wastewater treatment facilities that they own. The local jurisdictions or agencies in Table 3-1 will be reaffirmed DMAs for their FPAs in this plan once it has been certified and approved. DMAs include municipalities, counties, and sanitary sewer districts authorized under Ohio law to perform these functions.

Summit and Portage Counties are designated as the wastewater management planning agency for a) the service areas of existing sewage treatment plants that they own or operate and b) all unincorporated areas of their respective county. The geographical extent of the FPAs associated with the above listed DMAs and FPAs are shown in Appendix 3-1.

Appendices 3-2 to 3-12 show 208 facilities planning areas within Summit and Portage Counties that are in the Cuyahoga River, Chagrin River, and Grand River Basins. Also included are the wastewater planning options, prescriptions and current information developed by each DMA with input from affected local jurisdictions within each Facilities Planning Area in the NEFCO area. The boundaries, however, shown in these figures are generalized as discussed in Policy 3.1 below.

Appendix 3-13 provides prescriptions for the portions of the Portage County Regional Sewer District in the Cuyahoga River basin (Mantua, Rootstown, and Suffield Townships) and the Grand River basin (Hiram and Nelson Townships) that are not included within any FPA boundaries.

RECOMMENDED POLICIES FOR DETERMINING CONSISTENCY WITH THE CWP

This section presents recommended policies for governing changes to DMAs and FPAs and procedures for making wastewater management plans consistent with the CWP. These policies are:

- 3-1 DMAs and their current FPA boundaries for wastewater management planning;
- 3-2 Endorsements of Modifications to FPA Boundaries;
- 3-3 Development of Local Wastewater Management options and prescriptions;
- 3-4 208 Plan Consistency Actions for Ohio EPA and USEPA;
- 3-5 Utilization of Areawide Population Projections;
- 3-6 a&b Updating and/or Revising the Facilities Planning Area of Designated Management Agencies
- 3-7 Nomination of New Designated Management Agencies (DMAs).

Policy 3-1: DMAs and Current FPA Boundaries

With the adoption of this Plan update by the NEFCO General Policy Board, the local jurisdictions or agencies identified in Table 3-1 are confirmed as the DMAs for wastewater management planning within the FPAs set forth in Appendices 3-2 to 3-12.

This CWP update accepts FPA boundary decisions that were formally or informally approved by the Ohio EPA in the past. Considerable confusion existed in some areas as to which of numerous sewer plans and planning boundary definitions that have been produced since the 1981 NEFCO 208 CWP should be recognized in this CWP update. The lack of a formal procedure to clearly identify FPA boundaries and to track changes to these definitions over time is partially responsible for this confusion. The plan update process remedies this situation.

All owners or operators of POTWs were provided maps identifying FPA boundaries in the 1981 CWP. DMAs were requested to revise existing FPA boundaries to accommodate

changes that had been realized over the last twenty years and expected development during the next twenty years. This process also allowed DMAs to propose the removal of areas from its previously defined FPA that it has no plans for sewerage. Expansion of Facilities Planning Areas could also be proposed with the consent of affected jurisdictions.³

³ The boundaries that are recognized by this update replace all boundaries previously developed in the original 208 plans for the area. While there continues to be marked similarity between the boundaries established by the original 208 Planning process and the boundaries included in this update, there are notable differences. Boundary changes fall into two categories: those that reflect changes initiated by planning for active sewer extensions, and those that involve a strategic refocusing of planning objectives. Examples of the former category include the boundaries between the FPAs of Medina County and the City of Akron. Each of these changes occurred as the former FPA boundary was moved to serve an area in a bordering FPA that could not be otherwise serviced in a timely or efficient manner. The DMAs of both FPAs agreed to the changes and Ohio EPA concurred. A new FPA is being established for Randolph Township.

The second category of FPA boundary changes was based on facility planning that progressed after the initial 208 process. Several DMAs centralized their planning focus within their initial 201 FPA boundaries. These communities concluded that they had no intention of extending out to the farthest reaches of their planning area. They have established new boundaries to reflect this. Communities that fall into this group include the City of Twinsburg. The City of Akron and Summit County (for its Hudson-Streetsboro WWTP (Summit County portion)) extended their planning areas to provide service to areas not originally included in a planning area.

Table 3-1: NEFCO Region Primary Designated Management Agencies*

<u>Portage County</u>	<u>Summit County</u>
City of Aurora	City of Akron
Aurora Central WWTP	Akron WPCS
Aurora Westerly WWTP	Northeast Ohio Regional Sewer District
City of Kent	Southerly WWTP
Kent WWTP	City of Twinsburg
Village of Mantua	Twinsburg WWTP
Mantua WWTP	Summit County
City of Ravenna	Fish Creek WWTP
Ravenna WWTP	Pond Brook WWTP
Portage County	Robinwood Hills
Streetsboro Regional WWTP	Copley Meadows
Red Fox WWTP	
Boling Brook WWTP	
Twin Lakes WWTP	
Franklin Hills WWTP	
Rivermoor Estates	
Randolph (pending)	
Fairlane Estates WWTP	

*A Primary DMA is the county or municipality that owns the central wastewater treatment plant.

Many facilities planning areas encompass political jurisdictions, with autonomous wastewater planning ability which lie physically beyond the political jurisdiction boundaries of the DMA responsible for wastewater planning (Table 3-2). The CWP recognizes service agreements that exist between a POTW owner and the jurisdictions serviced by that POTW. Those agreements can specify which wastewater planning functions are to be assumed by the DMAs. All plans developed for the DMAs are recognized by the CWP.

NEFCO maintains detailed mapping files as part of its geographic information system (GIS). With the adoption of this update by the NEFCO Board the files maintained in this format are the definitive statement of all boundaries unless a more detailed map has been created by a DMA as part of its wastewater planning process. If a DMA has a more detailed map of boundaries in a report that has been submitted to and approved by the Ohio EPA, NEFCO can accept those boundaries with the consent of the affected jurisdictions. In all cases, the NEFCO GIS maps are the definitive source of FPA boundaries. Requests for changes to existing boundaries must be submitted by a DMA and will be recognized in the plan after review and acceptance by NEFCO. NEFCO will provide electronic copies of all approved updates to the Northeast District Office of the Ohio EPA.

Table 3-2
Incorporated Jurisdictions and Associated Primary and Secondary
Designated Management Agencies (DMA) for wastewater management planning

Local Government	County	Facilities Planning Area	Primary Designated Management Agency (DMA)(s) ¹		Secondary Designated Management Agency (DMA) ²
			DMA	Destination of Wastewater	
City of Akron	Summit	Akron	City of Akron	Akron WPCS	BTSSD, City of Akron, City of Barberton, City of Cuyahoga Falls, City of Fairlawn, City of Munroe Falls, City of Stow, City of Tallmadge, PCRSD, SCMSD, Village of Lakemore, Village of Mogadore, Village of Silver Lake
City of Cuyahoga Falls	Summit	Akron	City of Akron	Akron WPCS	SCMSD, City of Akron, City of Cuyahoga Falls
City of Fairlawn	Summit	Akron	City of Akron	Akron WPCS	City of Fairlawn
City of Hudson	Summit	Fish Creek, CVI, Hudson-Streetsboro	SCMSD, NEORS, SSSD4	Fish Creek WWTP, Southerly WWTP, Hudson-Streetsboro WWTP	SCMSD, City of Hudson
City of Macedonia	Summit	CVI	NEORS	Southerly WWTP	SCMSD
City of Munroe Falls	Summit	Akron, Fish Creek	City of Akron, SCMSD	Akron WPCS, Fish Creek WWTP	SCMSD
City of Stow	Summit	Akron, Fish Creek	City of Akron, SCMSD	Akron WPCS, Fish Creek WWTP	SCMSD
City of Tallmadge	Summit/Portage	Akron, Fish Creek	City of Akron, SCMSD,	Akron WPCS, Fish Creek WWTP	SCMSD, City of Tallmadge
City of Twinsburg	Summit	Twinsburg	City of Twinsburg	Twinsburg WWTP	TWSD, SCMSD
Bath Township Water and Sewer District (BTSSD)	Summit	Akron	City of Akron, SCMSD	Akron WPCS, Robinwood Hills WWTP	SCMSD, BTSSD
Twinsburg Water and Sewer District (TWSD)	Summit	Pond Brook, Twinsburg	SCMSD, SSSD4, NEORS	Twinsburg WWTP, Southerly WWTP, Hudson-Streetsboro WWTP, Aurora Shores WWTP	SCMSD, PCRSD, TWSD
Village of Boston Heights	Summit	CVI	NEORS, SCMSD	Southerly WWTP	SCMSD
Village of Mogadore	Summit/Portage	Akron	City of Akron	Akron WPCS	SCMSD
Village of	Summit	CVI	NEORS	Southerly	Village of Northfield

Table 3-2
Incorporated Jurisdictions and Associated Primary and Secondary
Designated Management Agencies (DMA) for wastewater management planning

Local Government	County	Facilities Planning Area	Primary Designated Management Agency (DMA)(s) ¹		Secondary Designated Management Agency (DMA) ²
			DMA	Destination of Wastewater	
Northfield				WWTP	
Village of Peninsula ³	Summit	CVI	N/A	N/A	N/A
Village of Reminderville	Summit	Pond Brook	SCMSD	Aurora Shores WWTP	SCMSD
Village of Richfield	Summit	CVI	NEORSD	Southerly WWTP	Village of Richfield
Village of Silver Lake	Summit	Akron	City of Akron	Akron WPCS	Village of Silver Lake, SCMSD
City of Aurora	Portage	Aurora	City of Aurora	Aurora WWTP, Aurora Shores WWTP	City of Aurora
City of Kent	Portage	Kent, Fish Creek	City of Kent, PCRSD	Kent WWTP, Franklin Hills	City of Kent, PCRSD
City of Ravenna	Portage	Ravenna	City of Ravenna	Ravenna WWTP	City of Ravenna, PCRSD
City of Streetsboro	Portage	Hudson-Streetsboro, Kent	SSSD4, PCRSD	Hudson-Streetsboro WWTP Twin Lakes WWTP	SSSD4, PCRSD
Village of Brady Lake	Portage	Fish Creek	PCRSD	Franklin Hills WWTP	PCRSD
Village of Mantua	Portage	Mantua	Village of Mantua	Mantua WWTP	Village of Mantua
Village of Sugar Bush Knolls	Portage	Kent	City of Kent, PCRSD	Twin Lakes WWTP	PCRSD

Akron WPCS - Akron Water Pollution Control Station

BTWSD – Bath Township Water and Sewer District

CVI - Cuyahoga Valley Interceptor

DMA - Designated Management Agency

FPA – Facilities Planning Area

NEORSD - Northeast Ohio Regional Sewer District

PCRSD - Portage County Regional Sewer District (Portage County Water Resources)

POTW - Publicly-Owned Treatment Works

SCMSD - Summit County Metropolitan Sewer District (Dept. of Environmental Services)

SSSD4 - Streetsboro Sanitary Sewer District No. 4 (Portage County Water Resources)

TWSD - Twinsburg Water and Sewer District

WWTP - Wastewater Treatment Plant

¹Primary DMA is the county or municipality that owns the central wastewater treatment plant (WWTP).

²Secondary DMA is the county, municipality, or political entity that builds, operates, and maintains the sewers under their jurisdiction.

³Does not have any sewers or wastewater plant.

Each DMA responsible for wastewater planning should develop plans spanning a twenty-year time period. The appropriate time for the development of these twenty year plans is predicated by the life expectancy of each wastewater treatment plant. When the existing facility looks to upgrade or expand, part of the planning should include a review of wastewater treatment needs for all areas within the plant's FPA boundary over the twenty-year time period. The results of this planning will be recognized by the State's WQMP when accepted by the Ohio EPA.

Policy 3-2: Endorsement of Modifications to FPA Boundaries

The NEFCO General Policy Board must approve updated changes to FPA boundary definitions. The Board must also approve all new FPAs. These changes are effective on Board approval and will be reflected in the next plan update submitted for certification.

The updated plan recognizes the FPA designations that are identified in Appendices 3-2 to 3-12. For changes requested after the plan update is certified, the DMA requesting a change must apply to NEFCO for redefinition of its boundaries. This will require the DMA to solicit support from all affected units of government including any other DMA that may be affected by the redefinition. If an FPA proposal crosses the planning area boundary between NOACA and NEFCO, the approval of both agencies will be required.

Policy 3-3: Development of Local Wastewater Management Options and Prescriptions

DMAs are encouraged to develop wastewater management options and prescriptions within their facilities planning areas in cooperation with affected local jurisdictions. These options and prescriptions must comply with requirements of the Clean Water Act. To the extent that the option identified involves the enlargement of an existing POTW, the construction of a new POTW or the extension of sewers, that option must conform to consistency requirements of the NEFCO CWP (see Policy 3-4).

This update to the NEFCO CWP offers local communities an opportunity to have input into the definition of future wastewater planning in areas that are not sewered.

At present, DMAs develop sewerage plans that are cost efficient from an engineering standpoint within their FPA. While coordination with local governments regularly occurs, there is no provision in the existing 208 plan that would encourage engineering plans to be amended based upon the desire of a local government to manage growth within its jurisdiction. This update to the 208 Plan provides such a mechanism. Local governments are encouraged to identify where they want or do not want central sewers. The DMA in each FPA must consult with affected jurisdictions and take into account their input in all cases that do not raise engineering or efficiency limitations.

In those areas where local officials want wastewater treatment to be exclusively individual on-site systems, several conditions must be met.

- 1) The county or municipal health departments responsible for managing on-site systems must authorize their use in the area under discussion.
- 2) The provisions of ORC 6111 and OAC 3701-29-02(L) and OAC 3701-29-02(M) requires connection to sanitary sewers when they become available by order of local or County Health Department. See bottom of Page 4-2; consistency
- 3) The designation of an area as 'on-site systems only' applies as long as Ohio EPA does not mandate sewers under ORC 6117.34 if a water quality problem is demonstrated.

Facilities planning areas maps contained in Appendices 3-2 through 3-12 indicate in generalized terms the preferences of local officials regarding future sanitary sewer service areas in the Lake Erie Basin.

As with FPA boundary maps, detailed boundary locations and community specific preferences are in the GIS data base maintained by NEFCO. This data base will be consulted when consistency reviews are made. The information contained in this data base reflects the input from local elected and appointed officials who responded to a request from the areawide planning agencies during the plan update process.

Some communities in the region are served by a neighboring community or regional system. The preferences expressed by these communities are subject to the acceptance of the DMA providing service. During a 208 plan consistency review, the DMA must demonstrate that consultation has occurred with communities in its facilities planning area to ascertain community preferences for sanitary sewer service.

Existing policies of local management agencies who have legal responsibility and authority to influence wastewater treatment, continue to be recognized under this proposed policy. Local health department policies are specifically recognized. The Ohio EPA and ODH are working in consultation with USEPA to develop a NPDES permitting policy that will apply to individual on-site wastewater treatment systems that have an off-lot discharge. The CWP will incorporate the policy arrived at by this negotiation as soon as it is agreed to by the Ohio EPA.

Local community preferences remain flexible to the extent desired by the community. These community specific preferences serve to guide the wastewater planning decisions of local landowners. It is recognized that all documented wastewater related water quality problems that exist now or that develop in the future, must be remediated in a timely manner by the best means available. Where wastewater related problems do not exist, local jurisdictions can decide if they prefer to protect water quality by utilizing individual on-site systems or centralized sanitary sewers. By identifying the areas that have no plans for sewer extensions in the next 20 years in this Plan, jurisdictions have served notice to all landowners of the need for them to plan for the installation, operation, maintenance, and replacement of on-site systems. In areas where sanitary sewers are likely to be extended, repair and maintenance of

problematic on-site systems may be warranted instead of total system replacement. In all cases, landowners are provided notice by this Plan to consult with local government officials before proceeding with their wastewater plans.

Policy 3-4: 208 Plan Consistency Actions for Ohio EPA and USEPA

Consistency with this CWP update will be required whenever an application is made to the Ohio EPA for (a) a permit to discharge pollutants into the waters of the state (NPDES Permit) or (b) a Permit-to-Install. Also, as per Ohio EPA's Division of Environmental and Financial Assistance (DEFA) policy, a consistency review will also be required of applicants for grants or loans under the Clean Water Act.

This policy is consistent with current Ohio EPA policies in undesignated 208 planning areas of the state. Under the CWP update, a consistency review will be required whenever an application is made to the Ohio EPA for a permit to discharge pollutants into the waters of the state. This applies to applications to increase an existing WWTP permitted discharge amount, to extend new sewer lines into a previously unsewered area, or to install an entirely new discharge. A consistency review will also be required of applicants for grants or loans under the Clean Water Act.

The Ohio EPA will notify NEFCO of all permit applications that apply to a Publicly-Owned Treatment Works (POTW) within the NEFCO area. NEFCO must certify that proposed POTW actions are consistent with the current FPA boundary definitions, that they support the future sewerage declarations made by the local officials in the affected area, and that they conform to population projections contained in the CWP.

The Ohio EPA will process all applications in accordance with existing regulations for PTIs that apply to treatment works servicing an individual lot that are in accordance with the declarations by jurisdictions contained in Appendices 3-2 to 3-12. Proposals that involve the installation or expansion of central sewers not connected to a POTW should be referred to the local jurisdiction for review prior to Ohio EPA consideration.

Policy 3-5: Utilization of Areawide Population Projections

All applications subject to Policies 3-3 and 3-4 will utilize population projections that are consistent with those provided in Appendices 3-2 to 3-12. NEFCO will periodically update projections based upon new community level census data. Updated population projections will be incorporated into the CWP by amendment.

The consistency review process will include the assessment of the most recent population projections generated by the areawide planning process utilized by NEFCO.

The Ohio Department of Development prepares the official population projections for the State

of Ohio. They allocate projections to the county level. NEFCO is the lead agency for allocating the State's county level projections to minor civil divisions in its region. When the agency updates its projections, it will forward a copy to the Northeast District Office of the Ohio EPA. The population projections shown in Appendixes 3-2 to 3-12 were produced by NEFCO in 1990. These projections are used by NEFCO for consistency reviews. In 2000, NEFCO staff extended these projections to the year 2030. They were approved by the NEFCO General Policy Board in May 2000. The methodology and community projections are included in Appendix 3-14. This set of projections is used as reference information to the projection figures contained in Appendixes 3-2 to 3-12.

The minor civil division population projections serve as a starting point for the evaluation of population projections within facilities planning areas. The facility planning process may reaggregate community projections to smaller areas. This may be based on an evaluation of available land for development combined with local zoning. Additional inputs can be used as appropriate. The revised population projections will be deemed consistent with the plan if they agree with the plan's projections. Departure from this plan's projections must be accepted by NEFCO before consistency is established.

Policy 3-6: Updating and/or Revising the Facilities Planning Areas of Designated Management Agencies

Designated Management Agencies that own a Publicly-Owned Treatment Works for wastewater have lead responsibility for sewer planning i.e. updating and/or revisions within the boundaries of the sewer districts in the Facilities Planning Area subject only to appeal to the NEFCO General Policy Board under Policies 3-6a and 3-6b below. However, the county will continue to have responsibility for sewer planning in conformity with any agreements with the DMA and 201 facility plan in all unincorporated areas, including those within an established FPA. County agencies will submit their sewer plans to the DMA to be incorporated into their facilities plan.

This policy addresses how responsibility for sewer planning is established and how it is to be updated when the need arises. It also gives affected jurisdictions guidance for challenging DMA decisions. It is important to note that the Ohio EPA cannot issue a permit for any action that is not consistent with the 208 Plan. FPA boundary disputes must be resolved prior to the review for consistency of any project by the NEFCO Environmental Resources Technical Advisory Committee (ERTAC) and General Policy Board.

Guidelines for Updating a 201 Facilities Planning Area

The following guidelines should be used when requesting an update to a 201 Facilities Plan, under NEFCO's Clean Water Plan.

Application Packet

The Designated Management Agency (DMA) proposing a 201 modification will submit the following items in its proposed 201 update application:

- a) Purpose;
- b) Introduction;
- c) Brief description of why the 201 needs to be updated;
- d) Historical information of existing 201 FPA boundary (include map);
- e) Historical information of existing wastewater prescription;
- f) Map of proposed 201 changes (if colored maps are used, include 50 of each for the ERTAC mailout);
- g) Updated wastewater treatment planning prescriptions and wastewater planning options;
- h) Conclusion;
- i) Received comment letters.

Process for Review

- a) The DMA requesting the 201 update must submit the proposed 201 update by certified mail (or be able to show adequate proof of when the process has started) to the legally recognized DMA that has primacy over the area in question, the lead DMA for the 201 Facilities Planning Area, NEFCO, and local governments within the proposed 201 update Facilities Planning Area for review and comment.
- b) The DMA requesting the 201 update should secure comment letters from the legally recognized DMA that has primacy over the area in question, the lead DMA, and local governments within the proposed 201 update FPA.
- c) If not already provided, the legally recognized DMA that has primacy over the area in question, the lead DMA, and local governments within the proposed 201 update FPA will have a maximum of 90 days upon receipt of the certified mail (or other proof as shown in 'a' above) (unless extended by the ERTAC) to respond to the DMA requesting the update.
- d) The DMA requesting the 201 update will submit the proposed 201 application packet with received comment letters to NEFCO for review two weeks prior to NEFCO's Environmental Resources Technical Advisory Committee (ERTAC) meeting in order to allow enough time for NEFCO to conduct a 201/208 consistency review.

NEFCO Staff 201/208 Clean Water Plan Consistency Review

NEFCO staff will conduct a 201/208 Consistency Review of the proposed 201 update, based on the following criteria, and make its recommendation to the ERTAC:

- a) Staff reviews proposed project's (201) FPA boundaries with those in NEFCO's Clean Water Plan (CWP);

- b) Staff checks to see whether the project’s population projections are consistent with those in the CWP;
- c) Staff reviews the adequacy of the project’s selected treatment alternative (wastewater treatment planning prescriptions and wastewater planning options).
- d) Staff prepares a recommendation on the above three criteria and submits the 201 update to the ERTAC for consideration.

ERTAC and NEFCO General Policy Board Review

- a) The DMA requesting the 201 update will present the proposed 201 update to the ERTAC and NEFCO staff will present the 201 consistency review findings to the ERTAC with its recommendation.
- b) The ERTAC will conduct a technical review of the 201 update and forward through NEFCO staff a recommendation for consideration by the General Policy Board.
- c) NEFCO staff will present the consistency review results and the ERTAC recommendation to the General Policy Board. It is recommended that the DMA requesting the 201 update be present at the General Policy Board meeting to answer any questions that the General Policy Board may have.
- d) The General Policy Board makes a determination and staff communicates this to the applicant.
- e) The General Policy Board decision will be forwarded to Ohio EPA-NEDO for inclusion in its 201 plans as a component of the overall 208 update for PTI and NPDES permitting.
- f) The 201 will then be incorporated into NEFCO’s Clean Water Plan (mapping, wastewater prescription).

Time-line for 201 Facilities Planning Area Updates

The DMA requesting the 201 update must submit the proposed 201 update by certified mail (or be able to show adequate proof of when the process has started) to the legally recognized DMA that has primacy over the area in question, the lead DMA for the 201 Facilities Planning Area, NEFCO, and local governments within the proposal 201 update facilities planning area for review and comment. A 90-day comment period shall commence the following working day from which the certified mail (or adequate proof of process initiation) has been received.

The DMA submitting the 201 update will submit the proposed 201 revision with comment letters to NEFCO, a minimum of one week prior to NEFCO’s ERTAC mailout to permit enough time for the NEFCO staff to conduct a 201/208 consistency review of the proposed 201 update.

Policy 3-6a: Responsibility for sewer planning will be with the Primary Designated Management Agency(s) in each established Facilities Planning Area in all cases of challenge when they can demonstrate any of the following:

- a. that the system affordability would be negatively impacted by the suggested change;
- b. that system efficiency, defined as the ability to meet its NPDES permit limitations, would be compromised by a suggested change; or

- c. that the sewer system rated capacity will be exceeded;**
- d. the change would result in a violation of a condition of a Section 201 Facilities Construction Grant received through the USEPA or a provision of a State Revolving Fund administered by the Ohio EPA.**
- e. if the DMA can show that it will suffer undue harm, or if it can demonstrate that system integrity would be compromised by the change, it must be given the opportunity to maintain primacy.**
- f. if an existing primary and/or secondary DMA has constructed components of their sewer system (WWTP or collection system) to serve the requested change in FPA area, no change in the FPA would be allowed unless compensation is made for capital expenditures.**

Conflicts stemming from problems related to officially recognized FPA boundaries are expected to occur from time to time. Furthermore, they will take on new dimensions that were not considered during the development of the original Plan. Some areas covered by an existing facility plan may want sewers to be extended to them while the POTW owner has no plans to extend service. An appeal process that could result in the redefinition of existing FPA boundaries is necessary.

Under this policy, the DMA for an approved FPA will continue to have primacy for sewer planning but that primacy will no longer be as absolute as in the past. The request of any DMA to transfer a specified area out of a recognized FPA needs to be open to consideration. A process to deal with the evaluation of each application must follow established guidelines. For instance, the existing DMA will maintain the right to provide for sewerage of the designated area if they can demonstrate that it will be harmed by a redesignation. Demonstrations of economic harm need to show that the existing or future level of affordability as established by federal guidelines for wastewater treatment affordability will not be met if the application for change is allowed to proceed. Further, in the absence of any agreement between DMAs, approval of a request for a change in FPAs is dependent upon any existing prorated capital (WWTP or sewer collection system) for existing or future servicing of the requested area being reimbursed to the existing primary and/or secondary DMA. System efficiency and integrity concerns must be tied to reasonable expectations that a WWTP will be unable to maintain compliance with its discharge permit limits. USEPA or the Ohio EPA must certify those cases where 201 Facility Grant or State Revolving Fund conditions preclude a requested change in FPA boundaries.

In cases where central sewers are needed and are the only means available to comply with an Ohio EPA order to resolve an existing water quality problem, the primary and/or secondary DMA's primacy standing would be dependent on its ability and willingness to proceed with the sewer extensions and capacity upgrades if necessary. If the primary and/or secondary DMA is not prepared or is not able to proceed in a timely manner, the DMA applicant for change can request a redrawing of the FPA boundary. However, the primary DMA has the right to make the sewer extensions and capacity upgrades should the secondary DMA be unable or unwilling to make such an extension.

Policy 3-6b: Planning responsibility for limited areas can be transferred from the Designated Management Agency in an established Facilities Planning Area in cases of challenge when the DMA applicant for change can demonstrate all of the following:

- a. that none of the conditions established by 3-6a apply;**
- b. that the existing DMA is unprepared or is unwilling to extend service to the challenged area, or that they have conditions that are unreasonable for the DMA applicant community;**
- c. that an alternative sewerage plan exists that protects the environment, and that the alternative plan is technically achievable, economically affordable, and politically acceptable;**
- d. that the proposed DMA has the legal authority to act.**

Transfers must be approved by the Ohio EPA and incorporated by amendment to the CWP. A DMA's planning standing would be dependent on the ability and willingness to proceed with the sewer extensions (and capacity upgrades if necessary) to areas within an established FPA that request such extensions. If the DMA is not prepared or is not able to proceed in a timely manner, the applicant for change can request a redrawing of the FPA boundary. This request would be considered with the intention of identifying viable alternative wastewater alternatives. The applicant would be required to demonstrate that an alternative exists, that the alternative is technically achievable, economically affordable and politically acceptable. If the proposed plan is consistent with all other aspects of the CWP, it can result in a change being made to the existing FPA definition in favor of the applicant. The NEFCO continuing planning process will provide a forum for all affected parties to effect a consensus agreement. When consensus cannot be reached, the NEFCO ERTAC will hear all viewpoints, and render a recommendation for action to the Policy Board. The Board action on such requests would constitute an update to the Plan as far as future consistency reviews are concerned in the challenged area.

Where no other acceptable solution can be found, a community that is part of another community's FPA can request the right to develop plans to direct their wastewater to an alternative treatment works. This could be to another existing POTW or as a last resort, to an entirely new POTW if one can be constructed. Any such consideration is to be consistent with the Ohio EPA's objectives to eliminate, where feasible, small POTWs in the same relatively general area as existing larger POTWs. All applications for the redrawing of existing FPA boundaries must be accompanied by plans which demonstrate that an environmentally acceptable and affordable alternative exists. These plans must demonstrate that the reassignment of the area will not jeopardize the ability of the POTW currently slated to serve the disputed area to comply with its NPDES permit conditions. These plans must also estimate the impacts on existing rate structure of that POTW.

Policy 3-7: Nomination of New Designated Management Agencies

New Designated Management Agencies (DMAs) can be established to provide sanitary sewer service in newly created Facilities Planning Areas (FPAs). The proposed DMA and if applicable, new Facilities Plan will be submitted to the Ohio EPA for review and comment. Approval by the NEFCO Board is necessary for these DMAs and FPAs to be recognized by the Clean Water Plan (CWP). The new DMAs and FPAs will be incorporated into the CWP by amendment.

All governmental entities that are not designated as a DMA must apply for such status before their permit application can be processed. To become a DMA designee, the applicant must have adequate legal authority under Ohio law and clearly identify the geographical extent of its proposed facilities planning area and sewer service area. It must also demonstrate that all affected local governments have been consulted in the development of the project. Support from all affected jurisdictions (municipalities in incorporated areas and county government in unincorporated areas) must be secured. Any FPA infringements must be resolved either with the approval of the infringed upon DMA or by appeal to the NEFCO Board (**see Policy 3-6**).

The applicant may propose an area for designation as an FPA that is larger than the current or proposed project service area. This can be done where it makes sense for the purposes of future sewer planning. NEFCO staff will seek comment from the Ohio EPA on all new DMAs and FPAs. Following the NEFCO Board approval, the Ohio EPA will utilize the new designation(s) in its permit decision process.

RECOMMENDATIONS FOR SUPPORTING ACTIONS BY LOCAL JURISDICTIONS

This section presents recommendations for wastewater management planning that reflect the input and decisions of responsible local governments and agencies.

Recommendation 3-1: Local and county jurisdictions are encouraged to conform land use plans to the wastewater service options and prescriptions identified in Appendices 3-2 to 3-13.

Ideally the planning choices reflected in wastewater management options and prescriptions presented in Appendices 3-2 through 3-13 are consistent with local land use plans. The effectiveness of the CWP will be enhanced to the extent that it is consistent with these land use plans.

Recommendation 3-2: Local jurisdictions should consider the use of the Joint Economic Development District (JEDD) approach or the Cooperative Economic Development Agreement (CEDA) approach to address conflicting interests in the process of wastewater treatment infrastructure.

Numerous cases exist in the region where a municipality owns and operates a POTW whose FPA includes portions of surrounding townships and has a policy of annexation for service. This is rationalized because the municipality has used their sewer revenues and/or tax base to support the construction, operation, and maintenance of their sewer infrastructure and is attempting to insure that all beneficiaries pay a fair share of these costs. Annexation is the tool to accomplish this.

Compulsory annexations to receive sanitary sewer service are often strongly contested. Use of a substitute measure, a JEDD⁴, is encouraged to meet the needs of both the municipality in question and the neighboring township. A JEDD or CEDA can be established by neighboring communities to allow an exchange of services and sharing of tax revenues. JEDD or CEDA agreements must be approved by vote of township residents. JEDD contracts include joint economic development districts, township service or sub-service areas, and non-service areas. Sewer (and water) lines are extended to joint economic development districts and, by petition (75 percent) to township service or sub-service areas. Township residents (or others) working in the joint economic districts are subject to an income tax that partially pays the capital cost of the extensions. All matters, including approving extensions, changes in joint economic districts or township service areas are made by an equally represented township/municipality represented the JEDD Board. JEDDs promote controlled economic and real estate valuation growth in designated economic districts while limiting suburban sprawl. In non-JEDD or CEDA agreement areas where the loss of business base is an issue, additional tax sharing may have to be negotiated. While not a solution for every case, the JEDD approach is an encouraged alternative in the CWP.

JEDD or CEDA agreements should be preceded by a sewer service agreement as necessary. These sewer service agreements should follow the 201 update process as described in Chapter 3, Policy 3-6 to assure consistency with local facilities planning areas.

⁴Ohio Revised Code 715.70-.71

Chapter 4

The Management of Home Sewage Treatment and Semi-Public Sewage Disposal Systems

This chapter discusses problems associated with the management of home sewage and semi-public sewage disposal systems¹ in Northeast Ohio and outlines the roles of local and state management agencies in this management system. It presents a series of management system recommendations for implementation by local health districts and other management agencies that would improve the performance of these systems and reduce their impact on water quality in the region. These recommendations are the work of a committee of the seven county health districts, Ohio EPA, and NOACA and NEFCO. This chapter concludes with a discussion of strategies for implementing these recommendations.

The previous chapter presented the process whereby local and county jurisdictions have developed plans for wastewater management in currently undeveloped areas of the region. These plans identify areas that are expected to be sewered. They also identify large areas which are intended to remain unsewered.

A number of studies have shown that on-site systems have a high rate of failure and adversely impact water quality in Northeast Ohio. The reasons for this are complex and are tied to deficiencies in the home sewage management system. If areas of Northeast Ohio are to remain unsewered, it is the responsibility of the local health departments to improve this management system.

I. Background

Owners/operators of publicly-owned wastewater treatment works (POTWs) are designated by the 208 Plan to have the lead authority for sewer-related planning in clearly demarcated facility planning area (FPA) boundaries. County metropolitan sewer districts will have authority in all unincorporated areas, including within FPA boundaries. Local health departments (LHDs) are responsible for wastewater treatment in areas that are not serviced by sewers. These areas include designated areas within FPA boundaries and areas that are not part of any existing FPA. In most cases, these areas are located in unincorporated (township) areas. In some cases there are incorporated areas that are not now nor will be serviced by central sanitary sewers.

Wastewater treatment for unsewered areas is generally regulated and managed by county health districts in unincorporated areas, while city health districts (or their designated health agents) serve unsewered areas that are within corporation limits.

¹Ohio Revised Code Section 3709.085 defines semi-public sewage systems as “a discharge disposal system which treats the sanitary sewage discharged from publicly and privately owned buildings or places of assemblage, entertainment, recreation, education, correction, hospitalization, housing, or employment, but does not include a disposal system which treats sewage in amounts of more than twenty-five thousand (25,000) gallons per day; a disposal system for the treatment of sewage from single-family, two-family, or three-family dwellings; or a disposal system for the treatment of industrial waste.”

Several problems exist that limit better management of these systems. First, there are a variety of agencies involved in the regulation and management of these sewage disposal systems including, the Ohio EPA, the Ohio Department of Health (ODH), LHDs, municipal, county and township officials, local planning and zoning officials, and county planning commissions. The policies and actions of these agencies are often poorly coordinated. In addition, there is a lack of state enabling legislation and corresponding sewage rules and regulations that clearly mandate effective management forms by LHDs. These programs are often inadequately funded and must often rely on general funds, health levies, and certification funds to support staff. Thus, those homeowners subject to vigorous enforcement and regulation are the same individuals who are asked to vote for levies or support other taxes to provide needed funding for vigorous programs. The result in Northeast Ohio is that each county approaches the design of proper management systems without uniform standards of performance. This lack of uniform regulations includes site and system evaluations, permitting requirements, fee assessments, system operation and maintenance requirements, mandatory pumping programs, records management, and education programs for system owner/operators, installers and inspectors.

While LHDs have the primary regulation and management role, they must cooperate with two state regulatory agencies, the Ohio EPA and the ODH, which have some overlapping responsibilities. The Ohio EPA has the power to approve or disapprove sewers for an area, but that decision does not consider the fact that if sewers are not approved, the LHDs will often be compelled to approve individual sewage systems that contribute to poorer water quality than would be produced by a sewer option. These agencies must also cooperate with local officials and county planning commissions who have a less visible, although critical, role, through land use planning responsibilities and comprehensive wastewater management planning roles.

II. Roles of Agencies within the Management System

LOCAL COUNTY BOARDS OF HEALTH

The Ohio Revised Code (ORC) Section 3701.56 authorizes Boards of Health of General Health Districts to enforce the sanitary rules and regulations adopted by the Ohio Public Health Council (the governing board of the ODH). ORC Section 3709.21 authorizes Boards of Health to make such orders and regulations as necessary for the public health, the prevention and restriction of disease, and the prevention, abatement, or suppression of nuisances. Section 3707.01 also authorizes a Boards of Health of a General Health District to regulate, within its jurisdiction, the location, construction, and repair of water closets, privies, cesspools, sinks, plumbing and drains.

The authority of local boards of health over sewage disposal systems is further elaborated in the Ohio Administrative Code (OAC). Chapter 3701-29 of the OAC contains the State of Ohio Household Sewage Regulations. The regulations, and any amendments or revisions of these regulations, are further supported through local health district policies. OAC Section 3701-29-03(B) provides that no person shall install an HSTS in a new subdivision unless a central

sewage system is considered to be impractical or inadvisable (as reviewed and determined by the Ohio EPA).

OAC Section 3701-29-02(B) provides that any dwelling, which is not connected to a sanitary sewage system shall be provided with an approved HSTS prior to being occupied. OAC Section 3701-29-03(A) also provides that any person proposing to create a subdivision shall submit plans to the Board of Health, for approval, which clearly show that the provisions set forth in OAC Section 3701-29-01 to 3701-29-21 can be adequately met before any lots in the subdivision are sold or offered for sale.

Also consistent with OAC Sections 3701-29-02 (L) and 3701-29-02(M), it shall be the responsibility of the LHD to ensure that a HSTS shall be abandoned and the home sewer directly connected to a sanitary sewerage system whenever such a sewerage system becomes accessible to the property. The role of local boards of health in managing and regulating sewage disposal systems is interdependent with two state regulating agencies, the Ohio EPA and the ODH.

LHDs currently license septage haulers. Each septage hauler must be licensed by each county to service a residential septic tank. In several counties, there is a mandatory pumping program for individual sewage systems. In those counties, each septage hauler must file a manifest to the local entity for each load pumped. Currently, there is no license or mandatory pumping/manifest program for SPSDS pumpers.

OHIO DEPARTMENT OF HEALTH

The ORC Section 3701.02 prescribes that the ODH shall consist of a director of health and a Public Health Council. ORC Section 3701.33 requires that the Council shall consist of seven members: three physicians, one registered nurse, one registered pharmacist, one registered sanitarian, and one member of the general public at least 60 years of age who is not associated with or financially interested in the practice of medicine, nursing, pharmacy, or environmental health. The governor appoints members to seven-year terms, with one term expiring at the end of each June.

ODH is made up of three main divisions: the Division of Prevention, the Division of Family and Community Health Services and the Division of Quality Assurance. The divisions are further broken down into service bureaus. The Bureau of Local Services in the Division of Quality Assurance is responsible for providing help to local health districts to provide for public health services. The bureau works with local health departments to assess the needs of their communities, develop appropriate programs, and evaluate their effectiveness.

Five teams carry out the functions of the bureau: survey and investigation; standards and certification; technical assistance, consultation and training; environmental engineering; and private water and household sewage program improvement. As part of its mission to assist local health departments, the bureau currently surveys LHDs to determine whether the

programs meet minimum standards established by law, but absent legislative authority, the bureau is unable to enforce these standards.

PUBLIC HEALTH COUNCIL

The Public Health Council (Council) is the primary rule-making body for the ODH, and its powers and duties are set forth in law. It adopts, amends, and rescinds rules pertaining to public health. It prescribes, by rule, the number and functions of divisions and bureaus and the qualifications of the chiefs of the division and bureaus within the Department, and it advises the director of health on matters affecting public health. The Council has no executive or administrative duties (ORC 3701.34).

RULE ADOPTION PROCEDURE

As a matter of policy, while drafting rules to be proposed by the Council, the Department solicits input from affected parties in an effort to reach a compromise on issues of controversy. Draft rules are prepared by departmental staff and approved by the director of health prior to presentation to Council for consideration.

Most rules promulgated by Council are subject to ORC 119. Proposed rules are filed with the Secretary of State Legislative Services Commission Joint Committee on Agency Rule Review (JCARR), and the Office of Small Business. A notice of public hearing is published in five newspapers of general circulation, and a copy of the notice of public hearing and a copy of the proposed rules are sent to anyone who wishes to be on the Council mailing list (OAC 3701-1-01).

After Council conducts a public hearing on the rules, the rules are heard by JCARR. No final action is taken on proposed rules until they have been before JCARR. All final rules are sent to those on the Council mailing list and to all local health departments (ORC 3701.35).

OHIO ENVIRONMENTAL PROTECTION AGENCY

As accorded by the ORC, Sections 6111.44 and 6111.45, Ohio EPA has first review responsibility regarding sewage treatment options for all in unsewered areas that do not involve one, two or three family residences for unsewered areas. The Ohio EPA reviews wastewater options for proposed new buildings, or the expansion of existing structures, and also for proposed changes in prior use. Wastewater options under review may include the extension of sewers to an existing POTW, construction of central sewers to a new private WWTP or POTW or the establishment of an individual sewage disposal system (with or without a discharge) for each lot. (See Ohio EPA Review Process in Appendix 13-3c "Prior to Permit-to-Install (PTI)" Work Group Report).

SEMI-PUBLIC INSPECTION PROGRAM/HOUSE BILL 110 PROGRAM

House Bill (HB)110 became effective on May 31, 1984, and it amended Sections 3709.085 and 6111.01 of the ORC. HB 110 gives local health districts the authority to perform, on behalf of the Ohio EPA through contractual agreements, preventative operation and maintenance education and inspections and informal enforcement activities at semi-public (on-site and discharging) systems (SPSDS) generating less than 25,000 gallons per day, and home sewage treatment systems in special sanitary districts.

LHDs are authorized under HB 110 to collect inspection fees. Such fee amounts vary from one district to another and are determined by their boards. Currently, six out of the seven county health districts in the Northeast Ohio Lake Erie Tributaries 208 Planning Area have established programs, while one district recently received a grant for start-up funds, and has since contracted with Ohio EPA to establish a HB 110 program. Start-up costs remain a barrier for other counties to initiate this pollution-prevention program. Presently, the Ohio EPA annually inspects less than five percent of these semi-public facilities in counties without HB 110 Programs. The Ohio EPA is promoting the targeting of Supplemental Environmental Projects (SEP) monies to help finance start-up costs for new HB 110 Programs. Once fees are established, over time sufficient funds are received to permanently put in place an Education Operation and Maintenance Inspection Program to ensure proper maintenance of the thousands of small commercial sanitary systems potentially impacting State Waters in Ohio.

The HB 110 Programs allow the Ohio EPA to concentrate its efforts on the industrial and larger POTWs dischargers by delegating the inspection oversight of the SPSDS to local health districts by contract. This also allows the counties to identify chronic poorly maintained facilities and refer them to the Ohio EPA for increased enforcement. This is one of the Ohio EPA's initiatives to promote local watershed partnerships to better control nonpoint pollution sources and improve proper operation and maintenance of existing small discharging point sources. Under HB 110, Health Districts may not initiate civil enforcement actions under 6111 through local prosecutors. Local prosecutors can prosecute water pollution violations criminally upon complaint of a local health board. This authority arises from Section 6111.99 of the ORC, which makes water pollution violations criminal violations. However, that authority existed prior to HB 110, and was not changed by its enactment. Although criminal prosecution may be appropriate in some instances, the Agency typically has chosen the civil action route in order to obtain injunctive remedies to bring the violators into compliance. In addition, HB 110 does not give local health boards authority to refer directly to the Office of the Ohio Attorney General (O.A.G.) on enforcement matters. All enforcement actions recommended by local health boards must therefore be processed through the Ohio EPA Division of Surface Water's enforcement coordinator in the same way that other enforcement matters are handled. Both local and OAC (State) rule authorities may be utilized to force sanitary connections for 1, 2, and 3 family dwellings, while Ohio EPA governs connection tie-ins of SPSDSs.

SUBDIVISION REVIEW

For residential development, the Ohio EPA is required to review sewerage options for any proposed subdivisions.² In the event that Ohio EPA determines that either the extension of sanitary sewers to an existing POTW or the installation of a new centralized sewage collection and treatment plant is not feasible, the proposed subdivision is then referred to the LHD for review regarding each lot's ability to support an individual HSTS. The LHD must have a denial from Ohio EPA for both central sewer options before on-site review can begin as accorded by ORC Section 3701-29-03 (B). For residential development of one, two and three family residences, LHDs have first review responsibility for individual HSTSs.

TOWNSHIP AND COUNTY PLANNING OFFICIALS

Township officials determine their community's future through local comprehensive land use planning initiatives that involve public participation in the development and maintenance of current land use plans that are supported by updating zoning ordinances and maps. County Planning Commissions assist townships in their planning and zoning efforts through the review of proposed development to ensure that local zoning and subdivision regulations are met. County Planning Commissions also provide limited staff support to townships throughout local comprehensive planning processes. Also, in developing the wastewater management plans presented in Chapter 3, township officials have been afforded an opportunity to offer input and comment on sewer planning decisions that affect their community.

III. Recommended Management Practices for Home Sewage and Semi-Public Sewage Disposal Systems

The following series of recommendations were developed by a committee of health department officials from each of the seven counties in the 208 planning area with support from NEFCO, NOACA, the Ohio EPA and the ODH, who were charged with the task of identifying a series of implementable strategies to ensure better management of home sewage disposal and semi-public systems. The recommendations that follow have been organized in a "cradle-to-grave" fashion that begins with system owner/operator education and site evaluation and continues through system installation and inspection, on-going inspections and maintenance, pumping, septage disposal and assessment of water quality. These recommendations address issues of sewage management approval for subdivisions and commercial/industrial lots where responsibility lies with the Ohio EPA.

²Ohio EPA Subdivision Review Authority, ORC 711.

Recommendation 4-1: Site and System Evaluations

Throughout the Northeast Ohio (NEFCO and NOACA) 208 Planning Area, it is recommended that every site evaluation (whether for individual lots or subdivision plats) be authorized via a uniform site evaluation application form.

4-1a: Contents of Site Evaluation Form

To allow for thorough site evaluations, the site evaluation application form should incorporate all of the specific information pertinent to the property and its potential to support a HSTS. This information should include the owner's name and signature, permanent parcel number, general location or address, lot dimensions, proposed system design and location, lot topography, etc.

More detailed information on the suggested contents of the site evaluation form can be found in Appendix 4-1, which contains a document produced by the Home Sewage Management Strategy Work Group entitled, "Recommended Best Regional Management Practices (BRMPs) for Individual Sewage Disposal Systems."

4-1b: Site Evaluation Fees

Local Boards of Health should establish site evaluation application fees at a rate that is reflective of the actual cost of the evaluation.

4-1c: Site Evaluation

During a typical site evaluation, local health district representatives should document their findings during the evaluation. This information should include the date of the evaluation, weather conditions, land features, man-made structures identified on the site, watercourses and drainage features, soils analysis, etc.

More detailed information on the suggested contents of the site evaluation can also be found in Appendix 4-1.

4-1d: Provision of Site Evaluation Documentation to Property Owner

Documentation regarding the results of the site evaluation should be provided to the property owner from the LHD official who performed the evaluation. The documentation should include the evaluator's findings and recommendations including: the limitations of the site; possible means of overcoming the limitations; indication of the design criteria to be considered; and the associated operation and maintenance procedures for the system design.

Recommendation 4-2: Pre-installation Procedures

4-2a: Installation Permit

An installation permit application should include the site evaluation information as described in 4-1a and 4-1c above and Appendix 4-1.

4-2b: Installation Fees

Installation permit application and inspection fees should be set at a rate that enables the local health district to recover all costs associated with inspection of the system during installation.

4-2c: Comprehensive Site Plan

A comprehensive site and installation plan, which includes the proposed system design, system location, and proposed location of the system reserved replacement area, should be submitted along with the installation permit application.

4-2d: System Approvals

4-2d-1: Approval of Appropriate Systems

Sewage disposal systems, which utilize soil for the treatment or disposal of wastewater should not be approved for use in soils that are not capable of providing adequate treatment and dissipation of sewage system effluent.

4-2d-2: System Denial of Off-Lot Discharging Systems

LHDs should discourage the installation of any system which produces an off-lot discharge for any new development. This type of system should only be allowed in cases of failure and/or in repair or replacement cases where no other alternative is technically or economically available.

The Ohio EPA is working with the General Assembly to develop an effective and efficient (NPDES) permitting process that will apply to off-lot discharging systems. All LHDs must conform their own permitting policies to Ohio EPA requirements and should adhere to all instructions forwarded to them by the Ohio EPA.

4-2d-3: Improve Effluent Quality and Minimize Effluent Quantity

Alternative practices should be encouraged to improve the quality of effluent when utilizing off-lot discharging systems. It is also recommended that LHD officials exhaust all possible means to minimize the quantity of effluent from off-lot discharging systems.

4-2d-4: Utilization of Alternative Systems

The Ohio EPA and ODH are encouraged to consider alternative systems, which are proven to operate efficiently in soils and weather conditions similar to Northeast Ohio, in order to protect water quality.

4-2e: Permit Disclaimer

LHDs are encouraged to include as a means of educating the system owner/operator a disclaimer on the installation permit to the effect that while the system meets the local health and state codes, meeting these code does not guarantee that the system will never fail.

Recommendation 4-3: System Installation Procedures

4-3a: Registration of Installers

LHDs are encouraged to enforce regulations that permit the revocation of installer registration based on unsatisfactory work and/or deviation from county and state regulations. LHDs are encouraged to forward revocation of permits to adjoining county health departments.

4-3b: Installation Inspection Program

LHDs should utilize existing installation programs as means of documenting deviations from the system installation design as approved by the installation permit. LHDs are encouraged to require the installer to furnish an “as-built” sketch of the system design and location on the site as part of each system’s records. Computerized records management files are encouraged.

Recommendation 4-4: Operation and Maintenance Programs

It is recommended that Operational and Maintenance Programs (O&M) be adopted, funded, staffed and enforced in each LHD or county/city in conjunction with local “Septage Management and Disposal Plans” that identify and provide acceptable septage disposal facilities. The O&M Programs should encompass owner education, operational permitting process, regular system inspection, adequate staffing and fees, system records management and mandatory pumping programs. These programs should be designed to comprehensively address existing and new systems.

4-4a: Educate Sewage System Owners

Education of the system owner should be undertaken starting with permit approval, and continuing with installation/operational inspections, required pumping notifications, and

maintenance, nuisance and point of sale inspections, utilizing the distribution of educational materials, for example, “Dollars Down the Drain.”³

4-4b: Inspection of Systems

Systems should be inspected regularly to ensure maximum effectiveness in treating wastewater. The O&M Program should be staffed at a level to ensure that each system is inspected at least every five years.

4-4c: Inspection of Systems

Systems records should be comprehensive and computerized to assist in system management and evaluation. Up-to-date records should be maintained, and an effort initiated to computerize existing data for all systems. A records file should be kept for each system including Site Evaluation application and corresponding documentation, as well as the approved Permit application and comprehensive site plan. LHDs are encouraged to utilize computerized records to remind system owners/operators to have their tank pumped and to enforce mandatory pumping programs. Up-to-date records will assist in the notification of pumping program schedule requirements.

Recommendation 4-5: Establish and Enforce Mandatory Pumping Programs

A mandatory Septage Pumping Program should be implemented that educates, tests, registers, and regulates pumpers/haulers, maintains pumping records, and determines pumping schedules for each system, in conjunction with local septage management and disposal plans that provide for septage disposal (Recommendation 4-8). LHDs and the ODH are encouraged to keep computerized records management files.

Recommendation 4-6: Transfer of Semi-Public Management Responsibility

LHDs should continue to contract with Ohio EPA for semi-public systems program management through HB 110 programs, while also pursuing and securing additional management responsibilities for these systems.

Recommendation 4-7: Utilization of Recommendations 4-1 through 4-5 for Management of Semi-Public Sewage Systems

³“Dollars Down the Drain-Caring for Your Septic Tank” is a homeowner’s video guide to operation and maintenance of on-site sewage treatment systems. This video was produced by the Friends of the Crooked River in partnership with Cuyahoga River Remedial Action Plan (RAP), Cuyahoga County Board of Health, Geauga County Health District, Lorain County General Health District, Portage County General Health District, Summit County General Health District, the Ohio Department of Health, the City of Akron, Kent State University and the University of Akron (1997).

Legislative changes should be encouraged to allow LHDs to employ management practices parallel to those recommended for HSTS' program management when managing of Semi-Public Domestic Sewage Disposal systems. These would include adopting local regulations to require licensed installers, installation inspection, HB 110 contracts for operational inspections, licensed septage/sludge haulers, and mandatory pumping/manifest programs.

Recommendation 4-8: County Septage Management and Disposal Plans

It is recommended that "Septage Management and Disposal Plans" be developed with leadership by city or village mayors/managers and/or the Board of County Commissioners (or County Executive), in each city/county to address the issue of septage disposal. Each plan will be unique unto the city/county it is designed to assist, but in general, "septage disposal plans" should include a series of activities, programs, and procedures that will help to address the treatment of septage over at least a twenty-year period.

Recommendation 4-9: State Enabling Legislation

It is recommended that the Ohio General Assembly enact enabling legislation that requires state certification of LHDs, and local inspection and certification of HSTSs and provides any needed authority to adopt the fees depicted in this chapter to ensure that they comply with state standards and federal Clean Water Act requirements.

IV. Designation of Management Agencies for Home Sewage and Semi-Public Domestic Sewage Disposal Systems

The City/County Boards of Health listed below in Policy 4-1 are requested to review and consider the recommendations presented in the preceding section for adoption. This 208 CWP provides for the designation of local health districts as management agencies to undertake the implementation of these recommendations.

Policy 4-1: The following city/county health districts are recommended as DMAs for implementation of the recommendations for management of home sewage systems and semi-public system in the Lake Erie Basin portions of the NEFCO region..

Akron Health Department	Ravenna Health Department
Portage County General Health District	Kent Health Department
Summit County Health Department	

Policy 4-2: Management agencies designated under this chapter agree to undertake the following:

- A. The agency adopts the Recommendations 4-1 to 4-6 as program management goals, and agrees to pursue the implementation of these goals in a five year time frame.

- B. The agency agrees to pursue the implementation of these recommendations as a priority in areas identified in Chapter 6 of this plan as tributary to critical regional water resources.
- C. The agency agrees to cooperate with the facility planning process outlined in Chapter 3 of this plan.
- D. The agency agrees to participate in major watershed planning groups recognized in Chapter 8 of this plan.

V. **Strategies for Implementing Recommendations in this Chapter**

This section outlines the roles of other agencies and a series of recommended strategies that will directly support LHDs in the implementation of the recommendations of Chapter 4.

TOWNSHIP OFFICIALS

Township officials are encouraged to consider their community's sewer future as part of local land use planning and zoning update initiatives. In the event that a community deems that its future does not include or limits the existence of central sanitary sewers, local township officials and county planning commissions can ensure that wastewater is treated effectively by supporting LHDs in the adoption and implementation of the recommendations presented in this chapter on management practices for individual sewage systems and semi-public sewage disposal systems.

CITY AND COUNTY PLANNING COMMISSIONS

City and County Planning Commissions can assist townships in their planning and zoning efforts through planning staff support and alterations to subdivision review regulations to require a 208 Plan consistency review by Ohio EPA and NEFCO to ensure that wastewater from new development will be adequately treated. County Planning Commissions can also assist the LHD by informing and educating township officials as to the performance status of existing sewage disposal systems and the environmental and water quality problems associated with failing and malfunctioning systems.

City and County Planning Commissions can also play a role in facilitating planning and zoning discussions based upon soil characteristics and water quality.

COUNTY COMMISSIONERS (COUNTY EXECUTIVE), CITY AND VILLAGE MAYORS

County Commissioners (the County Executive) and City and Village Mayors should provide support to the LHD's adoption of recommendations, provide leadership in establishing county-wide septage disposal plans, and actively participate in the 208 continuing planning process as a means of supporting local and county planning efforts concerning wastewater management issues.

AREAWIDE AGENCIES

NEFCO should continue to support regionally-oriented technical studies that address the impact of home sewage and semi-public sewage systems on the region's water quality. They should assist in identifying possible funding sources for start-up monies or for O&M requirements for systems replacement. The areawide and DMA agencies should continue to support state enabling legislation concerning local authority for home sewage management.

NEFCO should continue to provide a regional forum in which local health districts consider water quality management strategies.

NOACA has completed a seven-county study of factors contributing to HSTS performance failures in cooperation with LHDs. The recommendations included in this chapter should be re-visited and evaluated based upon the results and completion of this study.

OHIO DEPARTMENT OF HEALTH

The ODH should work with the Ohio EPA and LHDs to establish clear subdivision review authority concerning wastewater management issues.

The ODH should support state enabling legislation to reinforce the implementation of these recommendations especially to enhance LHD authority to enforce and finance O&M Programs and authority to implement funding mechanisms to implement the recommendations outlined in this chapter.

The ODH should support the efforts of LHDs in establishing better regional management programs for long-term O&M of systems including the utilization of alternative technology treatment systems, e.g., constructed wetlands, etc.

OHIO ENVIRONMENTAL PROTECTION AGENCY

The Ohio EPA should work with the ODH and LHDs to establish a clear demarcation of subdivision review authority concerning wastewater management issues.

The Ohio EPA should compare the likely impact of HSTS performance in proposed subdivisions versus the impact of package plants in currently unsewered areas given the

likelihood that HSTS are in many cases permanent installations. Further, the Ohio EPA should encourage the consideration of alternative community public sewage systems when performing subdivision review.

The Ohio EPA should strive to give LHDs complete management authority for SPSDSs, including enforcement and fine recovery.

The Ohio EPA should work with county and local management agencies to develop a county-wide septage disposal plan in each of the seven counties within the Lake Erie Basin 208 planning area. The Ohio EPA is encouraged to help local septage receiving facilities deal with the pass through of toxic materials that inhibit the biological processes in the WWTP and to work with local leadership in establishing a tracking system of loads through the documentation of work performed by pumpers. The Ohio EPA is also encouraged to provide leadership for septage receiving facilities in addressing the liability enforcement issues caused by a violation of mercury limits.

OHIO LEGISLATURE

The Ohio General Assembly should enact enabling legislation that requires state certification of LHDs, and local inspection and certification of HSTSs to ensure that they comply with state standards and federal Clean Water Act requirements.

Appendix 4-1

Recommended Management Practices for Home Sewage

(“Recommended Best Regional Management Practices for Individual Sewage Disposal Systems” as Submitted by the Home Sewage Management Strategies Work Group)

The Home Sewage Management Strategies Work Group was charged by the 208 Water Quality Management Task Force to identify a series of implementable strategies that could be incorporated into the 208 Plan. The Work Group was asked to identify barriers to those strategies; to research existing alternative strategies which overcome the barriers and then to develop transferable models that can be implemented throughout each county in the 208 planning area. As a means to accomplish their charge, the Work Group identified five management issues around which they would explore existing and possible barriers, research alternative strategies, and then develop regional models. These issues included discussions around the following:

- 1) Site & System Evaluations;
- 2) Regulations & Policies Resulting in Off-lot Discharge Approval;
- 3) Maintenance of Home Sewage Systems;
- 4) Sewage Disposal and System Design Approval in Unsewered Areas with Severe Soil Limitations; and
- 5) Septage Handling & Disposal.

The Work Group included representation from each of the county health departments within the 208 planning area, including representation from Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, and Summit County Health Departments. The Work Group met on a monthly basis to discuss and debate management practices and programs throughout Northeast Ohio. The Work Group, through their discussion of barriers, alternative practices and the development of transferable models, arrived at a series of best or better regional management practices (BRMPs). The following BRMPs are supported by the seven county health departments and are recommended for consideration and incorporation throughout the development of the 208 Plan Update.

The BRMPs are recommended by the Work Group for application in the approval, installation, management, and evaluation of home sewage treatment systems (HSTS), which are the responsibilities of the local health departments. With input from Ohio EPA, these BRMPs were drafted also to be applicable and effective in the approval, installation, management, and evaluation of semi-public sewage disposal systems (SPSDS), which are regulated by the Ohio EPA through the House Bill 110 program. The HB 110 program allows Ohio EPA to contract with the local health departments to manage and evaluate the semi-public systems once they have been approved and installed.

The recommended BRMPs are offered from a “cradle-to-grave” fashion that begins with system owner/operator education and site evaluation and continues through system installation and inspection, on-going inspections and maintenance, pumping, septage disposal and assessment of water quality.

In addition, as part of a series of recommended BRMPs, this document is supplemented by a report entitled “Prior to PTI” that outlines the steps prior to Permit to Install (PTI) approval or disapproval and provides additional recommendations for BRMPs regarding the subdivision systems approval process.

Site & System Evaluations:

As indicated in the “Prior to PTI” document, any newly proposed residential development for 1, 2, or 3 family dwelling units of ten or more lots (or a smaller number as defined) are to be first reviewed and subsequently disapproved by the Ohio EPA before local health department officials may review the proposed subdivision for on-site systems. It is recommended that administrative procedures be established that will encourage all land developers to first contact their local health department officials for information regarding the development process and where (what agency) to begin their application and approval process. These policies will provide local health department officials with information regarding possible development, residential and commercial, for which they will ultimately be responsible. Disapproval of the extension of sanitary sewers or the installation of a package plant for residential subdivisions by the Ohio EPA allows the local health department officials to review, approve, and continue to regulate and have responsibility for on-site residential systems. In addition, approval of on-site systems for commercial development in counties with House Bill 110 programs increases inspection responsibilities for local health department officials.

The following recommended BRMPs can be utilized and applied for minor subdivision lots, within a major subdivision, and commercial/industrial lots where responsibility lies with the Ohio EPA.

Throughout the 208 Planning Area, it is recommended that every site evaluation (whether for individual lots or subdivision plats) be authorized via a site evaluation application form that requires the property owner’s signature.

Site evaluation application forms should incorporate the following standard contents:

- owner’s name and signature
- permanent parcel number
- general location
- street address (if available)
- dimensions of lot (proposed acreage)
- proposed location and type of sewage system to be used (if available)
- topography
- water courses
- drainage description
- north orientation arrow
- proposed use, i.e., 1, 2 or 3 family dwelling, number of bedrooms, commercial
- square footage of proposed dwelling
- any easements, including those for utilities
- existing structures or old foundations
- any former land/building uses
- location of existing structures (features that would interfere with system placement)
- set of instructions to facilitate field checks (staked corners, street address etc.)
- drawing of house location and house plans
- rough sketch of property
- excavator’s name and address (if known)
- who prepared application
- disclaimer

- proposed water supply
- date of last transfer
- soils information (if available)

The Work Group recommends that local health officials have the ability to establish site evaluation application fees at a rate that covers all costs associated with the evaluation.

Prior to site evaluation, a site plan drawing (preferably scaled) should be submitted.

For each site evaluation performed, local health districts throughout the 208 planning area are encouraged to document as much of the following standard evaluation information as possible:

- date of inspections
- all associated weather conditions before and during site evaluations
- vegetation, e.g., wooded, open, wetland indication
- land features, e.g., fill, roadways,
- existing structures or easements that might interfere with system placement
- oil & gas pipelines
- disturbed soils
- structures
- ponds
- identification of soils to the satisfaction of the local health official, i.e., test hole and professional soils analysis
- study submission
- soil identification
- curtain interceptor drain outlet

Documentation regarding the results of the site evaluation should be provided to the property owner from the local health department official who performed the evaluation. The documentation should include the evaluator's findings and recommendations including the limitations of the site; possible means of overcoming the limitations; indication of the required system design to be installed; and the recommended operation and maintenance procedures for the system.

An installation permit application should state similar information that has previously been recommended to be included on the site evaluation application.

It is recommended that the installation permit application fee be set at a rate that enables the local health district to recover all costs associated with inspection of the system during installation and subsequent operation.

Require a comprehensive site and installation plan (that includes a replacement area).

Deny system designs based on their performances in certain soils.

The installation permit should contain a disclaimer that indicates the system meets the code, but that meeting the code does not guarantee the system will never fail.

Require installers to be registered locally; implement policies and practices that support the revocation of registration based on unsatisfactory work and/or deviation from local health department regulations.

Implement and enforce an installation inspection program to ensure the system is installed as designed and indicated in the comprehensive site plan.

An operational permit should be utilized in conjunction with a system O & M Program with appropriate fee that will allow the local health districts to recover all costs associated with the adoption of an operational permit.

Recommended Practices or Programs for Sewage Disposal and System Design Approvals in Unsewered Areas with Severe Soil Limitations

It is recommended that local health department officials and regulations should discourage the installation of off-lot discharging systems for any new development; and only allow off-lot discharging systems in system repair or replacement cases when necessary, and only when there is an approvable discharge point.

Require alternative practices to improve the quality of effluent when utilizing off-lot discharging systems.

It is also recommended that local health department officials exhaust all possible means to minimize the quantity of effluent from discharging systems.

In the event an entire Operational Maintenance inspection program cannot be adopted, funded, staffed, or enforced for all systems, resources should be utilized to establish a program specifically for off-lot discharging systems.

Encourage Ohio EPA to consider alternative systems, proven to operate efficiently in soils and weather conditions similar to northeast Ohio, in order to protect critical resources.

Maintenance of Sewage Systems

It is recommended regionally that Operational and Maintenance Programs be adopted, funded, staffed and enforced in conjunction with local “Septage Management and Disposal Plans” that identify and provide acceptable septage disposal facilities. Those programs should:

Educate the sewage disposal system owner/operator; as to the proper operation and maintenance of their specific system;

Distribute educational materials when site evaluation application is made, i.e., “Dollars Down the Drain” video, pamphlets, brochures, etc.; and

Continue to educate the system owner from the point of permit approval, during installation/operational inspections, required pumping notifications, and maintenance, nuisance and point of sale inspections;

Inspect systems regularly to ensure maximum effectiveness in treating wastewater;

The operation and maintenance program should be staffed to ensure that each system is inspected at least every five years. Inspections should also continue for nuisance complaints and when requested by mortgage lenders (point of sale inspections);

Operational Permit and pumping fees should be established and set at a rate that enables the local health department to recover all costs associated with the hiring of staff to perform five-year inspections and maintain all associated record-keeping;

Maintain up-to-date records (computerized if possible) for all systems; a records' file should be kept for each system including Site evaluation application and corresponding documentation, and the approved Permit application and comprehensive site plan. (Up-to-date records will assist in the notification of septage pumping schedule requirements);

Utilize a Septage Pumping Program, in conjunction with local "septage management & disposal plans," that educates, tests, registers, and regulates pumpers/haulers; and maintains pumping records; determines pumping schedules for each system. This idea is addressed in a supplemental document entitled "Septage Management & Disposal Strategies", which cites:

1. Pumper registration to allow:
 - enforcement
 - education
 - revocation/suspension of license
2. Meetings for pumper education to show:
 - how to fill out pump receipts
 - incentives
 - proper cleaning procedures
 - how to determine if contents of septic tank is non-toxic
3. The Pumping record (standard form) should contain:
 - address of sewage disposal system
 - owner's name and mailing address
 - pumper's name and address
 - total gallons of septage pumped
 - where the septage was dumped/land applied
 - date pumping record was returned to the local health department that has jurisdiction over the pumped system
4. The pumping schedule should also:
 - explain the pumping requirements
 - indicate the required frequency (determined by measuring sludge and scum levels per gallon of tank capacity or more realistically, as accorded by number of occupants) that the system must be pumped
 - provide notification as to the systems pumping needs status

Address pumping programs and schedules, record-keeping requirements, repair/replacement needs with:

Stiff, enforced fines for haulers who falsify pumping records, including removal of haulers from the POTW acceptance list;

A disposal plan that includes: 1) points for receiving new volumes of septage; a) land application sites; b) plants that will accept septage; 2) ideas as to how to deal with new volumes of septage;

Establish revolving or low interest rate loan program to financially assist owners in repairing, replacing, or to tie into sanitary sewers to mitigate water quality impacts from poorly performing/failing systems; and

Work with local officials, i.e., POTWs, city mayors, county executives, county commissioners, sanitary engineers, etc. to resolve the issues of treating septage, such as computerized record keeping and enforcement of pumping schedules, the travel economics for haulers when disposing of septage, and the liability issues for those wastewater treatment plants that accept septage, via a “Septage Management and Disposal Plans.”

Chapter 5

Management of Nonpoint Source Pollution and Storm Water Runoff

This chapter recommends the adoption of land regulations in six areas of nonpoint source and storm water runoff control by local and county units of government in the NEFCO 208 Clean Water Planning area (CWP). It provides model regulations to be considered for this purpose. This program is intended to address the nonpoint source problems that are characteristic of Northeast Ohio's streams. The chapter concludes with an implementation strategy and policies for a program of ongoing planning support.

I. Introduction

Northeast Ohio depends on its water resources. They are economically and ecologically important to the health and welfare of its citizens. These water resources provide drinking water from both surface and groundwater sources. They provide very important recreational benefits as well as contribute to a diverse ecosystem which provides important functional and economic benefits. However, changes in land use and population shifts have increased demands for these water resources and this, in turn, threatens many of them.

The threats to surface and groundwater resources are changing. Historically, point sources were viewed as the primary threat. However, most point source problems are being controlled, and now it is nonpoint pollution and storm water effects which appear to provide the greater threat to our water resources in many portions of the region.

Nonpoint problems are both water quality and quantity based. Nonpoint pollution is a result of activities that take place on the land surface, and how water runs off the land surface or seeps into the ground. Most land use activities have the potential to contribute to nonpoint pollution problems. There is an emerging realization that unchecked storm water runoff from more intensively used land surfaces is also a major threat to water resources. This occurs due to the alteration of the surface runoff regime and alteration of the hydrologic processes involved in groundwater recharge.

The solution to nonpoint source and storm water runoff problems are watershed specific. Therefore, successful solutions must be carried out using a watershed approach which often involves multiple governmental jurisdictions. Also, the nonpoint management programs that need to be utilized in any given watershed will vary depending upon the type of water resources present, the threats to those resources that exist locally, the existing land use, the future land use trends, the governmental structure having jurisdiction over land use decisions, the financial resources available and the level of citizen involvement.

An effective watershed program seeks to coordinate the management of all point and nonpoint sources of pollution in a watershed. This effort will provide guidance to assist in identifying watershed-wide solutions and in identifying priorities. Remedial Action Plan (RAP) programs

are designed with these principles in mind. The CWA's Total Maximum Daily Load (TMDL) Regulation and Program being implemented by the USEPA and Ohio EPA is based on the same premise.

Generally, because of the complexity of the problems and multiple jurisdictions involved, no one protective measure will wholly solve the problem caused by nonpoint sources of pollution in a given watershed. More likely, a combination of mechanisms will be necessary, and in many cases may be preferred, to give locally based and supported initiatives maximum flexibility in achieving their protection goals and needs. Improved linkages between different levels of government and existing protective mechanisms are needed to ensure that actions taken do actually provide the desired protection of the region's water resources. Local programs can benefit from, and need to be coordinated with, the Ohio Nonpoint Source Management Plan and the Coastal Nonpoint Source Control Program supported by State agencies.

There are two conditions that confuse the distinction between point and nonpoint sources of pollution. These are combined sewer overflows (CSO) and sanitary sewer overflows (SSO). Both result in a discharge of a mix of sanitary wastewater and storm water. For purposes of this discussion, these overflows are considered to be part of the point source family and not discussed here. NPDES permit holders have requirements for managing, and eventually eliminating CSOs and SSOs. Sanitary sewer overflows must be sought out and eliminated as a condition of each wastewater treatment plant's NPDES permit. Combined sewer outfall elimination is regulated by a national policy that calls for the USEPA or delegated states to negotiate a phased remediation program with each discharger that currently has combined sewers. New, updated SSO elimination regulations, which were originally proposed January, 2001 but subsequently withdrawn, are now being finalized with a tentative release of the proposed SSO Rule by late spring, 2003, pending USEPA's resolution of issues with the proposed rule on blending of wastewater treatment flows. The SSO Rule requires USEPA and/or delegated states to implement a phased remediation program including a far reaching capacity, management, operation and maintenance (CMOM) provision.

II. Summary of Nonpoint Pollution Problems in the NEFCO Region

Chapter 2 described water quality conditions in overall terms for Northeast Ohio's major rivers. This chapter focuses on the extent to which these streams are impaired by nonpoint sources or conditions, and identifies priority nonpoint sources of pollution that impact the area's streams.

Table 5-1 lists the miles of streams impaired by nonpoint sources, or conditions for each of the four watersheds subject to this plan. It is derived from the Ohio EPA's assessment which summarizes the causes and sources of aquatic life impairments statewide (documented in Appendix A-2 of the 1996 Ohio Water Resource Inventory).

For the purpose of this chapter nonpoint source categories have been organized into the following groupings: urban runoff, agricultural sources, channelization and dams, on-site system failure, spills, and other. The urban runoff group includes urban runoff itself, storm sewer discharges, and land development or suburbanization. Agricultural sources include

pasture land inputs, runoff from crop production, and animal waste discharges. Stream channelization and dam habitat modifications include the effects of dredging, and the removal of riparian vegetation. Spills include those resulting from vehicular accidents and leakage from stationary sources. The 'other' grouping covers categories that have an impact on only limited geographic areas. It includes the effects of contaminated sediments, landfill leachate, and highway maintenance and runoff.

Table 5-1

**Nonpoint Source Impairments*
to NEFCO Region Streams**

<p>Middle and Upper Cuyahoga River Watershed (above junction with and including the Little Cuyahoga River):</p> <ul style="list-style-type: none"> Mileage Assessed: 164.61 38% Impaired by Urban Runoff 5% Impaired by Agriculture 49% Impaired by Channelization & Dams 13% Impaired by On-Site System Failure 23% Impaired by Spills 28% Impaired by Other Sources 	<p>Cuyahoga River Watershed (below junction with Little Cuyahoga):</p> <ul style="list-style-type: none"> Mileage Assessed: 187.00 51% Impaired by Urban Runoff 20% Impaired by Agriculture 13% Impaired by Channelization & Dams 6% Impaired by On-Site System Failure 31% Impaired by Spills 9% Impaired by Other Sources
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*could include overlapping miles

Source: Ohio EPA 1996 Ohio Water Resource Inventory - Appendix A-2.

III. Recommended Program of Local and County Nonpoint Source and Storm Water Management

Six nonpoint source management programs are recommended for implementation by local and county agencies in the planning area. These are as follows:

1. Storm water runoff management from development and redevelopment actions;
2. Construction site erosion and sediment control programs;
3. Riparian zone protection program;
4. Conservation design for storm water management;
5. Road salt minimization and storage program; and
6. Nonpoint source management plans for low interest loan programs.

Each of these programs are introduced as a plan recommendation which is followed by a summary discussion that addresses the program's purpose, legal authority for implementation, and how the program works.

The recommendations that are presented to better manage nonpoint sources of pollution are supported by model ordinances or policy guidelines. This is done to help insure the development of adequate control programs while minimizing the costs and difficulties of implementation. Implementation of the control programs identified in the models serves as one measure by which existing and future programs can be assessed. Appendix 5-1 contains references and contacts for each of the recommended programs.

Each local or county jurisdiction is requested to undertake a nonpoint source program evaluation process as a prelude to implementing the recommendations in this chapter. This evaluation process includes the following steps:

- a. Compare existing legislation and regulations to a model ordinance with the intent of identifying inconsistencies or shortcomings.
- b. Decide whether shortcomings can be adequately addressed by implementing administrative policy changes.
- c. Where substantial change is needed, decide whether it is better to upgrade the existing legislation or to adopt the model ordinance as a replacement for the existing base.
- d. With enactment of legislation or administrative policy changes, provide for the training of all staff who are charged with implementing the changes adopted. In the case of counties, provide for training of township personnel as appropriate.

NEFCO, in concert with other county and state agencies, will assist local and county jurisdictions in undertaking implementation of these recommendations. Refer to the implementation strategy outlined in Section VI below.

Local and county jurisdictions identified for nonpoint source implementation actions in this plan are encouraged to consult Chapter 6 of this plan which outlines a program of nonpoint source controls for protection of critical water resources in the region.

Recommendation 5-1: All municipalities and counties in the CWP area are encouraged to adopt and implement Storm Water Management Programs for all development and redevelopment activities which affect an area equal to one acre or more as part of a common plan of development or sale. These programs need to address the management of both storm water quantity and quality.

Storm water management regulations, which apply to new developments and to major redevelopment actions and which are adopted and enforced locally, accomplish several objectives. They reduce the flood risk to downstream areas, provide for the protection of stream channels, and can protect water quality. Municipalities and counties are authorized under Ohio law to implement these programs.

Storm water management in developing areas is critical to the maintenance of water resources. Beyond the obvious advantages of flood control, water quality benefits in several important ways. Altered runoff patterns following the creation of large tracts of impervious surfaces can

upset the hydraulics of stream channels. This often destroys stream habitat thereby degrading aquatic communities present in the stream. These same forces contribute to the creation of channel instability and increases in the rate of bank erosion and problems in downstream areas. This is a major concern to local communities and abutting property owners with increasing costs to stabilize existing channels.

Many cities have already or are implementing storm water management programs within the Northeast Ohio region. The City of Akron has adopted a storm water management program as per a Storm Water NPDES permit (Phase I of the NPDES Storm Water Program). Geauga, Medina, and Summit Counties have or are developing programs for unincorporated areas. All communities need to adopt formal storm water management programs and work to coordinate their control efforts with other communities in the same watershed. Even where communities have existing storm water management programs in place, their design standards may need to be upgraded to be more protective of downstream channels.

Comprehensive storm water management ordinances focus on reducing downstream flooding and channel erosion through the use of on-site detention and/or retention of storm water runoff. They also need to establish post-construction maintenance requirements for installed retention systems. Ordinances require on-site detention to maintain predevelopment peak flow rates for the 1-year through 100-year storm. Ordinances also need to require consideration of the critical storm which is more protective of downstream flow conditions.

The Cuyahoga River Remedial Action Plan's Storm Water Committee worked with the Cuyahoga SWCD and the Cuyahoga Valley Communities Council to draft a model ordinance that meets the needs discussed here. All communities are encouraged to review this ordinance for use in their jurisdiction.

Phase II of the NPDES Storm Water Permits Program (effective March 10, 2003) requires storm water management programs to be implemented by: municipalities in urban areas with populations 50,000 and above, areas with populations of 1,000/per square mile, and municipalities outside urban areas with populations greater than 10,000. The ordinance discussed here will help cities to comply with Phase II requirements.

Continuing education programs will be needed to train local management personnel in the application of storm water management programs. New technologies and fresh approaches to managing storm water in less expensive and more aesthetically pleasing ways are constantly being developed. Storm water controls can become an asset to the landscape when applied by persons trained in innovative techniques. The Soil and Water Conservation Districts serve as a resource for this training.

Recommendation 5-2: All municipalities and counties in the CWP area are encouraged to adopt and implement Soil Erosion and Sediment Control Management Programs for all nonagricultural land disturbance activities which affect an area equal to one acre or more as part of a common development.

Soil erosion and sediment control occurs best when locally adopted regulations guide construction and development activities. The main objective is to demand more accountability

so as to prevent significant stream damage from occurring downstream from development. Regular inspection of construction sites by local building and zoning inspectors who can issue stop work orders helps to insure that all planned controls are properly installed and maintained. All municipalities can implement soil erosion and sediment control programs through home rule powers. Counties are authorized under Section 307.79 of the Ohio Revised Code to establish such a program.

Many existing programs regulate only land disturbance activities that affect five acres or more. There is a recognized need to decrease this threshold to include all projects that disturb one acre or more. In heavily urbanized areas that already have hydrologic problems, there may be a need to decrease the size of the disturbed area to a lower value. Phase II of the NPDES storm water permits program brings small municipal storm sewer systems and construction sites between 1 and 5 acres into the NPDES program.

Communities in the region should implement urban sediment control programs consistent with the specifications contained in the "Rainwater and Land Development Guide", and in concert with the Ohio EPA-administered provisions of the NPDES storm water permit program. The program, encompassing erosion control methods to address sediment from construction sites, is a means of preventing adverse environmental impacts from new urban development on water quality and aquatic communities in the region's rivers, streams, and lakes.

The program should take a watershed approach and be implemented consistently in both unincorporated and incorporated areas. County Commissioners or County Council are encouraged to consider this program for the unincorporated areas by enacting legislation that establishes procedures consistent with HB 501. Parallel programs should be legislated by municipalities throughout the region.

Approved plans need to be implemented and monitored for effectiveness over the course of the development action. Elements of an effective urban sediment control program should include the following:

- Subdivision review procedures;
- Education of developers and local public officials;
- Required installation of BMPs for both erosion minimization and sediment control;
- Monitoring and enforcement of BMPs;
- Coordination with Ohio EPA's storm water permits program; and
- Adherence to the principles and guidance contained in the Ohio Department of Natural Resources' "Rainwater and Land Development Guide".

All management practices used to comply with soil erosion and sediment control programs should meet the specifications contained in the "Rainwater and Land Development Guide" produced jointly by ODNR, Ohio EPA and NRCS. The Cuyahoga Soil and Water Conservation District has developed a model ordinance which can be used by communities to meet the objectives of this element. See Appendix 5-1 for contact information.

Continuing education programs are needed to assist in the implementation of sound erosion and sediment control programs. There is a wide variety of techniques and circumstances that

can apply at any given site. Not all erosion and sediment control management practices are applicable everywhere. Programs to acquaint developers, contractors, and site inspectors with available practices and their proper usage will need to be conducted on a regular basis.

Local soil and water conservation districts and the Ohio EPA are two of the agencies that provide training and support to local officials and developers to help them design and implement better control plans. Local interaction and cooperation are often better mechanisms to achieve soil erosion and sediment control than is reliance on State enforcement of the NPDES program. Local regulations can be used to identify and fix problems in an expedient manner before damage is done. This is preferable over a system that fines developers for damages caused. Costs to implement soil erosion and sediment control programs are most often recovered from permit fees charged to the developer/builder.

Recommendation 5-3: Developing communities in the CWP area are encouraged to adopt and implement Riparian Zone Protection Ordinances. All other areas are encouraged to protect existing vegetation in riparian corridors and work to restore the integrity of the zone in disturbed areas.

A riparian buffer ordinance prevents/minimizes the alteration of the riparian zone along stream segments to ensure that functions provided by riparian areas are protected. The riparian zone generally covered by a buffer ordinance includes the vegetative corridor adjacent to a perennial or intermittent stream. Building setbacks may be necessary to protect the riparian zone and may range from 75 to 300 feet depending on the stream's characteristics (slope, size, soil type, land use, function, etc.). The ordinance requires building setbacks which apply to new subdivisions and major redevelopment actions. Riparian protection programs encourage the restoration of previously disturbed areas where practical but do not affect existing structures or uses.

The purpose of the riparian buffer ordinance is to ensure that the existing functions provided by the existing riparian vegetation are maintained as much as possible, and that any future encroachment within the buffer zones meets certain standards and conditions. Riparian zones provide several important functions including flood control, erosion control, nonpoint source pollution control, groundwater purification, and habitat protection. Economic benefits are realized by a community when it protects these functions and when it acts to minimize future property damage by preventing encroachment on the stream channel.

The specific purpose and intent of this ordinance is to regulate uses and developments within the riparian buffer area that would impair its ability to:

1. Reduce flood impacts by absorbing peak flows, slowing the velocity of flood waters and regulating base flow.
2. Stabilize the banks of watercourses to reduce bank erosion and the downstream transport of sediments eroded from watercourse banks.
3. Reduce pollutants in watercourses during periods of high flows by filtering, settling and transforming pollutants already present in watercourses.
4. Reduce pollutants in watercourses by filtering, settling and transforming pollutants in runoff before they enter watercourses.

5. Provide high quality watercourse habitats with shelter and food sources for aquatic organisms.
6. Reduce the presence of aquatic nuisance species to maintain a diverse aquatic system.
7. Provide habitat to a wide array of wildlife by maintaining diverse and connected riparian vegetation.
8. Benefit the community economically by minimizing encroachment on watercourse channels and the need for costly engineering solutions such as dams, retention basins and constructed slope protection measures to protect structures and reduce property damage and threats to the safety of watershed residents, and by contributing to the scenic beauty and environment of the community, thereby preserving the character of the community, the quality of life of the residents of the community and corresponding property values.

Riparian buffer ordinances are implemented at the local level. Further support could be provided for the use of these ordinances through state policy or legislative changes. To work effectively, a fixed width or setback may be specified. Enforcement mechanisms need to be clearly developed. The Chagrin River Watershed Partners, Inc. has prepared “Riparian Buffers, Technical Information for Decision Makers” which summarizes national research completed to document the benefits of riparian buffers. Bath Township has passed a riparian protection resolution. The Ohio Department of Natural Resources and USEPA have prepared useful guides on the subject. Summit County has passed a Riparian Ordinance for the unincorporated areas of Summit County.

A locally-staffed Technical Advisory Committee may develop a model ordinance for possible use in riparian protection programs in the region. This model may specify fixed setbacks relative to stream size as defined by upstream drainage area. The recommended setbacks are to be consistent with the latest scientific findings as to the minimum distances needed to maintain riparian functions and may consider criteria such as: stream flow characteristics; stream size; stream order; flood plain areas; wetlands; topography; soil types; slope; existing terrestrial and aquatic communities; existing land use; and the function or objective of the riparian protection zone ordinance. It is desirable that a riparian protection zone ordinance be flexible and based on criteria that are defensible and equitable in nature.

Educational programs are critical in all areas prior to implementing an ordinance. Misunderstandings of the intent and content of riparian protection efforts are commonplace. Township residents need to be assured that riparian protection programs are designed to protect the stream side landowner as well as the environment. Downstream interests are benefitted only if upstream problems are averted. The clarification of the intent and content of riparian protection measures has been a challenge in areas within the region where ordinance adoption has already been proposed. For this reason, public education programs need to be stressed in the region.

Educational efforts targeted to riparian landowners can result in substantial protection without the need for a protection ordinance. The implementation of an educational program might be an appropriate first step in communities that are experiencing little development pressure that affects riparian corridors.

Recommendation 5-4: Developing communities in the CWP area are encouraged to consider the use of Conservation Design for Development to enhance storm water management.

Conservation design for development is often referred to as “low impact design”. This design involves the principle of maintaining open space areas in the layout of a development project. This minimizes infrastructure needs and preserves the natural character of much of the land. It reduces the cost of development while protecting the environment. It is important to strictly limit the number of building lots created under a conservation design to that number supported on a particular property under existing zoning and building ordinances.

Central to the design is the consideration of controls for storm water quantity and quality management during the design process rather than after the site layout has been completed. The objective is to provide storm water control measures to manage and minimize the amount of imperviousness created while maintaining tracts of open space. Structural and nonstructural measures are considered and used to maintain water quality and minimize the impact of the storm water.

The benefits of a conservation design land subdivision include the 1) minimization of increased watershed imperviousness, 2) moderation of hydrologic and hydraulic impacts on downstream waters, 3) prevention of the increased risks to flooding in downstream areas, 4) protection of environmentally sensitive areas such as wetlands and riparian corridors, and 5) maintenance of wildlife habitat. Conservation designs accomplish this by encouraging changes in local subdivision regulations that are more environmentally friendly.

These benefits are realized while decreasing the actual cost of building the development due to a minimization of infrastructure needs (it is easier and less costly to supply utilities and construct road access to concentrated housing units than to scattered ones). Conservation designs also reduce soil erosion and storm water management costs.

Subdivision regulations are created, adopted, implemented and enforced by county planning commissions for unincorporated areas and by municipalities for incorporated areas. Cities and villages can require conservation design subdivisions as part of their zoning districts, architectural review and subdivision regulations. Townships have no architectural review authority and must rely on the county subdivision regulations as the means to govern subdivision development.

Allowing for conservation design in subdivisions regulations is not a new idea, nor is the idea of using the design to manage storm water. Many states actively promote the use of conservation designs. Several areas locally allow conservation design subdivisions. The Countryside Program sponsored by the Western Reserve Resource Conservation and Development (RC&D) Council assists local governments interested in implementing this measure. The Countryside Program has prepared model regulations for conservation development. These are contained in the Conservation Development Resource Manual, prepared by the Western Reserve RC & D in 1998. The document contains model zoning regulations for townships, model subdivision regulations for counties, and guidelines for

adaption and use of the conservation development approach by municipalities. The Countryside Program is the model recommended for use under this element of the CWP.

The implementation of conservation design subdivisions is facilitated in areas served by a centralized sanitary sewer system. It is also possible in areas where local soils are highly suitable for the use of individual on-site wastewater treatment systems. In areas where soils limit individual systems, alternative community-based systems may be required. Ohio EPA's policies currently limit the use of such systems. Ohio EPA is encouraged to pursue the development of such a policy that is compatible with conservation design subdivisions before they can be used in many unsewered areas of the region.

Recommendation 5-5: All political subdivisions, governmental agencies, or private entities in areas that are tributary to surface water or groundwater drinking supplies are encouraged to adopt, implement, and/or maintain Road Salt Minimization and Storage Management Programs.

Many communities in Northeast Ohio are implementing environmentally responsible road salt programs. They seek to minimize applications and most have constructed adequately protected storage facilities. The application of road salt remains the most efficient and cost-effective method of keeping roads free of ice. Maintenance of roads during the winter months varies depending on the geographic location, weather and temperature conditions, use of alternatives other than salt, road types and level of service, types of available equipment, financial resources, and road maintenance staff.

A winter maintenance program consists of several elements ranging in degrees of importance depending on the size of the operational jurisdiction and the complexity of its road network. However, every winter maintenance program needs to ensure safety and flow of traffic, be protective of the environment, while also being fiscally responsible.

The Ohio Department of Transportation (ODOT) provides guidance that is in accord with these needs. The Snow and Ice Standard Operating Procedures combined with the District's Guidelines provides the basis for ODOT's Snow and Ice Policy. These efforts need to be continued regionally and enhanced in areas that could threaten drinking water supplies and surface waters.

It is well understood that road salt programs are driven by the need to provide for safe driving conditions. This objective cannot be compromised. Management programs seek to use only the amount of salt that will be needed to provide the desired level of safety and to apply that amount at the time when it will deliver the most good. Under some conditions, substitutes to road salt are used. Sand and other grit materials can be used in many locations that are not served with storm sewers (which quickly become clogged if sand is used). Calcium chloride is one substitute that is used locally in limited quantities. Research continues regarding cost-effective alternatives that are more environmentally friendly.

Local officials understand that it never pays to over salt or to apply quantities at times when it is not needed or cannot work. A responsible program ensures that all road maintenance personnel are fully trained in application procedures and policies. It also includes a

commitment not to apply road salt when the temperature is too low for it to work. The adoption of a policy to spot apply is another mechanism that can help to reduce the impacts of salting. Such a policy calls for the salting of intersections, steep grades, and high use areas while limiting the application on flat, straight stretches of road and on side streets. Whereas not all measures of road salt minimization work everywhere, each community needs to strive to find those that can most effectively protect its citizens while minimizing off-road effects.

Recommendation 5-6: Soil and Water Conservation Districts are encouraged to take the lead in developing nonpoint source pollution management plans which would allow local watershed organizations to participate in the Ohio EPA-Division of Environmental and Financial Assistance (DEFA) Water Pollution Control Loan Fund (WPCLF) Linked Deposit Program which provides low-interest financial assistance to individuals and private organizations for implementation of agricultural management practices, for the conversion to conservation tillage systems, and for other nonagricultural capital projects to reduce nonpoint source pollution in the waterways of Northeast Ohio.

The objective of this mechanism is to promote the use of WPCLF monies to individuals who seek to implement approved agricultural management practices including cropping practices, pesticide reduction practices and animal waste handling practices. It also provides a mechanism to include other nonpoint source control efforts that address nonagricultural sources of pollution.

The linked deposit program provides low interest loans to farmers who work to reduce nonpoint source pollution from their agricultural operations which include both crop production and animal production. The program requires the completion of a watershed management plan that identifies needed nonpoint source controls and provides for targeted implementation. These plans are usually developed by the Soil and Water Conservation Districts in the watershed in concert with the County Agricultural and Cooperative Extension Agents.

Loans are issued directly by local banks to individual farmers to cover the cost of approved practices. The loan rate is reduced by three per cent from market conditions. Farmers can use the program to purchase conservation tillage equipment or to retrofit existing equipment to be used for this purpose. Pesticide application equipment that reduces the amount of chemicals used, or prevents the migration of applied chemicals, is eligible under the program. Animal waste handling facilities and equipment can also receive program support. Other eligible practices include fencing to exclude livestock from streams and filter strips to trap sediment and pollutants before they can enter a waterway. Non-agricultural practices are also eligible, including horse feedlots, kennels and other animal handling operations in urban areas. Funds are available to help finance on-site wastewater treatment system repairs and replacements. Storm water management structures may also be eligible. Ohio EPA continues to expand the list of eligible projects for controlling nonpoint source pollution.

IV. Planning Strategies for Nonpoint Source Management

This section reviews some of the initiatives that are being increasingly used to manage problems associated with nonpoint sources of pollution and storm water runoff. These

initiatives will form the core of future management planning efforts to be implemented during the continuing planning phase of the CWP. Under the 208 Plan, NEFCO has continuing planning responsibilities. They include providing for education outreach and implementing demonstration projects designed to advance the state of management of nonpoint source pollution within the region. Areas where there is a logical and viable role for continuing planning are discussed below. The participation of local management agencies is central to the success of these activities.

Strategy 5-1: Intercommunity Storm Water Management Planning Support

Storm water retention/detention basins are generally approved on a site-by-site basis in lieu of a watershed approach. This could actually result in worse downstream flooding at some locations during certain storm events unless the location, size, and other design features of storm water basins are developed within the context of an overall comprehensive storm water management program. Coordination in storm water planning by all communities in a watershed is necessary to avoid causing such a condition. Development is needed of an on-line hydrologic and hydraulic model that is capable of assisting in the interactive design of storm water control basins. All communities in a watershed need to share in the development, financing, and maintenance of such models. Efforts to develop State legislation that requires such cooperation are supported by the CWP. **See Recommendation 5-1.**

Strategy 5-2: Highway Runoff Management Planning

The design and maintenance of highways can influence the type and amount of pollutants in the runoff from the roadway. Vehicular traffic introduces a wide variety of potentially harmful chemicals into surface runoff. There are practices that can reduce the impacts associated with these chemicals. Local officials, acting in concert with the Ohio Department of Transportation (ODOT), need to develop management programs that can be implemented locally to control these releases. The melding of water quality and transportation planning capabilities can be drawn on to help realize this objective.

There is a need to develop educational programs which demonstrate how to minimize or mitigate the hydraulic impacts of highway runoff. There are techniques that can be used during the engineering phase, during actual construction, and as part of long-term operation and maintenance. It is even possible in some cases to provide partial mitigation of previous impacts.

Strategy 5-3: Cooperation with Stream Channel Stabilization and Stream Restoration Programs

The disturbance of the natural landscape has many consequences. One of these is that stream hydrology is altered as we clear native vegetation and convert the land to agricultural and urban uses. As the hydrology of a watershed is altered, the stream responds by adjusting its hydraulic forces to compensate for the new conditions. These adjustments have serious consequences such as increased flood damages, stream bank erosion, and the loss of quality stream habitat. In the past, we have responded to the changing conditions within the stream channel with a series of engineered approaches that have not proven wholly successful in

dealing with the complete problem within the stream. Channelization and hard bank armoring, which have commonly been used to deal with problems in the channel, often pass the problem somewhere else because they have not dealt with the cause of the problem.

New approaches are being recognized as ways to address some of these shortcomings. These approaches incorporate the use of bioengineering principles which use natural plant materials instead of concrete. Bioengineering maximizes the establishment of terrestrial and aquatic habitat. Other aspects involve the recreation of stable channel patterns and cross-sections that mimic natural conditions. Numerous demonstration projects are underway in the region. The Indian Hollow Lake Golf Course, the Lorain County Metroparks, and the Village of Lodi are involved in projects in the Black River. The City of Medina is undertaking a project in the Rocky River. The Cities of Highland Hills, Seven Hills, and Cleveland have joined the Cuyahoga River RAP, Cleveland Metroparks, and Metro Parks serving Summit County in projects in the Cuyahoga River watershed. The Lake County Soil and Water Conservation District led a project along the Chagrin River. Local officials are being asked to take part in this growing technology.

The area's SWCDs can be contacted for more information on how to incorporate bioremediation measures in stream management projects (See Appendix 5-1).

Programs for the maintenance or improvement of drainage ditches need to adopt soil bioengineering principles. These principles will allow the ditch to better provide its drainage function while still providing aquatic habitat.

Strategy 5-4: Cooperation with Watershed Stewardship Projects

Watershed stewardship programs are being established to raise public awareness which can help to build a constituency for protecting or restoring local streams. They do this by involving the public in efforts to clean up or to preserve local streams with the cooperation of the public agencies who are responsible for those streams. Stewardship programs emphasize voluntary actions as the means to accomplish stream improvement objectives. They energize watershed residents to take an active role in the protection of the stream through participation in clean-up campaigns, stream monitoring activities, vegetative planting projects, and similar activities. Local officials participate through their support of the citizen projects and by targeting their resources to the problems documented by stewardship activities.

Stewardship programs raise awareness of a watershed's problems and seek to coordinate efforts to deal with them in an efficient manner. The public/private partnerships that are established by the programs are the mechanism by which this happens. The key element of stewardship programs is the consensus-building process involved. Volunteers identify problems, research cost-effective solutions, and provide manpower to help implement these solutions. They are assisted in this process by the professional environmental staffs working for a host of public agencies. Local communities step in with the resources needed to carry out the recommended actions. When done in a coordinated manner, public support is organized to take care of the priority problems without overtaxing a community's ability to respond. This generation of community support is the key to real and lasting change.

Stream Stewardship Programs are becoming commonplace in the NEFCO and NOACA 208 water quality management areas. Programs are now underway in all of the following streams: Big Creek, Doan Brook, Grand River, Mill Creek, West Creek, and Yellow Creek.

The Ohio Department of Natural Resources, in conjunction with the Soil and Water Conservation Districts in the region, have initiated an Urban Stream Program which provides each SWCD in Northeast Ohio with an employee whose responsibilities include fostering stream stewardship activities. This program is intended to demonstrate that community-based efforts can help to restore streams impacted by previous urbanization. The Urban Streams' personnel can help interested communities develop stewardship programs of their own (See Appendix 5-1).

Strategy 5-5: Coordination of Geographic Information System (GIS) Opportunities

One of the difficulties in dealing with nonpoint sources of pollution is that it is characterized by small incremental loadings generated from a very large land base. It is difficult to identify and estimate the contribution from each specific portion of a watershed. This limits the ability to target priority sources or areas within problematic watersheds.

The development of computerized mapping and analysis tools is providing new opportunities for the management of nonpoint sources. It is now becoming a matter of course to be able to manipulate very large data bases that allow one to overlay land use, soil type, land slope, hydrologic data, and other parameters in ways that provide insight into those combinations that are most important in any given watershed. It is also possible to link these overlays to stream performance data including chemical monitoring data, biological assessments, and stream channel instability problems. Hydrologic modeling, which demands large amounts of land-based inputs, is becoming more efficient, allowing for a better analysis of flooding and water quality problems. The ability to link numerous causes and effects related to our use of the landscape increases the support for action by combining several objectives into one coordinated solution. This information is instrumental in helping public officials to recognize and understand these interrelationships.

As new tools are developed to help identify and prioritize remediation actions in nonpoint source impaired watersheds, numerous agencies will have to actively coordinate their data collection and reporting procedures. This will allow for the generation of up-to-date computer files of land based information that can readily and easily be shared among all parties needing it. Support for the maintenance of this data base is important if GIS technology is to be maximized. The outputs of the technology can then be used to assist in the education of local public officials regarding their role in the management of nonpoint sources of pollution.

Strategy 5-6: Encouragement of Land Preservation Programs

A variety of land preservation and conservation programs are being developed in an attempt to offset the effects of continued land development trends. These programs seek to accommodate growth while maintaining the land and water resources in developing areas. Farmland Preservation and Land Conservancy Programs are two examples of such efforts.

Farmland preservation efforts seek to maintain the character of rural landscapes by maintaining the conditions that enhance the sustainability of agriculture in growth pressure areas. They involve the purchase of land development rights on those tracts of agricultural land deemed crucial to the continued agricultural viability in a particular area. They also work to buffer agriculture from development by employing the concept of conservation design in which residential development is clustered in areas surrounded by open space.

Land Conservancy Programs seek conservation easements from landowners interested in helping to preserve the natural character of undeveloped areas. Conservation easements can be an important tool which can provide tax benefits to the donee and at the same time provide important protection for a water or land resource. A conservation easement is a recorded deed restriction under which a property owner gives up all or some of the development rights associated with their property. The conservation easement is generally managed by a charitable organization in the conservation field or a unit of government. In granting a conservation easement, the owner is in essence giving up any future development rights on the property and giving the management organization the right to enforce the extinguished development rights. The property can be sold but it will always be subject to the terms of the conservation easement. Stream banking programs can make use of conservation easements for the protection of riparian areas.

Land conservation projects can receive funding support from several programs. The State of Ohio's Nature Works Program is one of these. The Lake Erie Protection Fund and Section 319 Nonpoint Source Demonstration Grants have also been used in this regards. The Wetlands Preserve Program administered by NRCS-USDA is another source of this protection. Local SWCD offices can be contacted for more information on all of these initiatives.

Strategy 5-7: Cooperation with Phase II Storm Water NPDES Program

USEPA is in the process of expanding the scope of the NPDES storm water program. The expansion, referred to as "Phase II", will bring small municipal storm sewers systems and construction sites between 1 and 5 acres into the NPDES program. Local governmental units responsible for the following discharges will be affected by Phase II:

- Discharges from small municipal separate storm sewer systems (MS4s) in incorporated areas, or in counties, that are located in an Urbanized Area as defined by the 1990 Census.
- Discharges associated with construction activities disturbing between 1 and 5 acres,
- Discharges from any small MS4 that the Ohio Environmental Protection Agency (EPA) determines is in need of storm water controls, or
- Any other discharge that EPA determines contributes to a violation of a water quality standard or is a significant contributor of water pollutants.

Under the proposed rules, designated small MS4s will be required to develop a storm water management program and submit this with their application. This program must contain the following minimum control measures:

- (1) Public education and outreach programs
- (2) Public involvement and participation
- (3) Illicit discharge detection and elimination
- (4) Construction site storm water runoff, including soil erosion/sediment control best management practices (BMPs)
- (5) Post-construction storm water management in new development and redevelopment
- (6) Pollution prevention and BMPs for municipal operations

The management of storm water runoff is a complex and inexact undertaking. Peak flow reductions and runoff volume management can be realized with the use of engineered structures bolstered by runoff reducing land practices. In order to be fully effective, each flow management structure needs to be coordinated with other sites within the watershed. This most often requires broad cooperation among a number of communities. Communities will also need to share innovative storm water and pollutant loading reduction strategies with one another in order to maximize the effects of this program. A commitment, to developing watershed-wide management strategies will go a long way towards implementation of effective and efficient storm water management programs by all communities.

Implementation of the model regulations and policy guidelines identified in Recommendations 5-1 through 5-6 will help all affected jurisdictions to comply with Phase II requirements.

V. Policies for Encouraging Local Actions for the Control of Nonpoint Source Pollution

NEFCO encourages local initiatives for control of storm water and nonpoint source pollution. The adoption of the following policies are presented as a beginning point to ameliorate the impacts of nonpoint source pollution arising from runoff.

Policy 5-1: NEFCO will promote and support the implementation by local and county jurisdictions in the CWP area of the nonpoint source management programs presented in this chapter. These programs include:

- 5-1. Storm water runoff management from development and redevelopment actions**
- 5-2. Construction site erosion and sediment control programs**
- 5-3. Riparian zone protection program**
- 5-4. Conservation design for storm water management**
- 5-5. Road salt minimization and storage program and**
- 5-6. Nonpoint source management plans for low interest loan programs**

Policy 5-2: A local or county jurisdiction that agrees to implement one or more of these nonpoint source recommendations will be recognized as a designated management agency for that purpose in this plan.

Policy 5-3: Local and county jurisdictions will be encouraged to pursue implementation of the recommended nonpoint source management programs by cooperating on an interjurisdictional watershed basis.

Policy 5-4: NEFCO encourages state and federal funding agencies to provide on a priority basis nonpoint source and watershed grants to support implementation of nonpoint source management programs by designated management agencies recognized for nonpoint source management in this plan.

Policy 5-5: NEFCO will cooperate with the planning initiatives outlined in the nonpoint source management planning strategies presented in this chapter. These strategies include:

Strategy 5-1: Intercommunity Storm Water Management Planning Support

Strategy 5-2: Highway Runoff Management Planning

Strategy 5-3: Cooperation with Stream Channel Stabilization and Stream Restoration Programs

Strategy 5-4: Cooperation with Watershed Stewardship Project

Strategy 5-5: Coordination of Geographic Information System (GIS) Opportunities

Strategy 5-6: Encouragement of Land Preservation Programs

Strategy 5-7: Cooperation with Phase II Storm Water NPDES Program

VI. Strategy for Implementing Recommended Nonpoint Source Management Programs

Implementation of the programs recommended in this chapter will require an active sustained effort at promoting and supporting local implementation initiatives. This is an effort that will require the sustained interest and cooperation of a number of agencies with nonpoint source technical resources, including the areawide planning agencies, county level support agencies such as the soil and water conservation districts, county engineers, county planning agencies, the Northeast Ohio Regional Sewer District (NEORS) and Akron Water Public Utilities and others, state agencies including Ohio EPA, ODNR, ODH, ODOT the Ohio Lake Erie Commission and the OWDA among others, and the watershed planning organizations discussed in Chapter 8.

The presentation of the draft plan to local jurisdictions for review and comment provides an initial opportunity for promoting these recommendations. However, the effort to secure local adoption of these recommendations will require a sustained effort over a period of time. The ongoing areawide planning process outlined in Chapter 10 discusses the issue in more detail.

APPENDIX 5-1

Nonpoint Source Management: Recommended Model Ordinances Resource and Agency Contact List

Appendix 5-1

Nonpoint Source Management: Recommended Model Ordinances and Resource Agency Contact List

I. Recommended Model Ordinances

Please contact the Northeast Ohio Four County Regional Planning and Development Organization (NEFCO) for copies of the following documents. Please consult the attached Resource/Agency Contact List to obtain additional information.

Recommendation 5-1: Storm Water Management from Development and Redevelopment Actions

Cuyahoga Valley Communities Council. "A Model Ordinance for Local Storm Water Management in the Cuyahoga Valley Communities." 1994.

Cuyahoga Soil & Water Conservation District. "A Model Ordinance for Construction Site Erosion Control & Storm Water Management." 1994.

Recommendation 5-2: Construction Site Erosion and Sediment Control Programs

Ohio Department of Natural Resources. "Rainwater and Land Development Guide." 1996.

Cuyahoga County Soil & Water Conservation District. "A Model Ordinance for Construction Site Erosion Control & Storm Water Management." 1994.

Recommendation 5-3: Riparian Zone Protection Program

Chagrin River Watershed Partners. "A Model Ordinance for the Establishment of a Riparian Buffer Area" 1999.

Summit County Riparian Ordinance, 2002, Summit Soil and Water Conservation District.

Recommendation 5-4: Conservation Design for Storm Water Management

Western Reserve Resource Conservation and Development Council: The Countryside Program. "Conservation Development Resource Manual." 1998.

Recommendation 5-5: Road Salt Minimization and Storage Programs

Ohio Department of Transportation. "The Snow and Ice Standard Operating Procedure." 1995.

Appendix 5-1
Nonpoint Source Management: Recommended Model Ordinances
Resource/Agency Contact list

II. Resource/Agency Contact List

Cuyahoga Soil and Water Conservation District

6100 West Canal Road
Valley View, Ohio 44125
Phone: (216) 524-6580
Fax: (216) 524-6584
E-mail: jstorer@cuyahogawcd.com
Web site: Not available at this time

Portage Soil and Water Conservation District

6970 State Route 88
Ravenna, Ohio 44266
Phone: (330) 297-7633
Fax: (330) 296-5917
E-mail: Not available at this time
Web site: Not available at this time

Summit Soil and Water Conservation District

2795 Front St. Suite D
Cuyahoga Falls, Ohio 44221
Phone: (330) 929-2871
Fax: (330) 929-2872
E-mail: summitswcd@aol.com
Web site: <http://members.aol.com/summit/swcd/>
(source for information about the Summit County Riparian Ordinance)

Ohio Department of Natural Resources (ODNR), Division of Soil and Water Conservation

1939 Fountain Square Court
Building E-2
Columbus, Ohio 43224
Phone: (614) 265-6610
Fax: (614) 262-2064
E-mail: rama.jones@dnr.st.oh.us
Web site: <http://www.dnr.state.oh.us/odnr/soil+water/>

Copies of the "Rainwater and Land Development Guide" are available through ODNR, Division of Soil and Water Conservation for \$20.00 plus \$4.00 shipping charge. Excerpts of this document, including an overview and the Table of Contents, can be found on NOACA's web site www.noaca.org

Cuyahoga Valley Communities Council

Three Brecksville Commons, Suite #1

8221 Brecksville Road

Brecksville, Ohio 44141

Phone: (440) 526-1822

Fax: (440) 526-1822

E-mail: cdcc@qwis.com

Web site: <http://community.cleveland.com/cc/cdcc/>

A copy of the Cuyahoga Valley Communities Council's "Model Ordinance for Local Storm Water Management in the Cuyahoga Valley Communities" can be found on NOACA's web site www.noaca.org

Chagrin River Watershed Partners

2705 River Road

Willoughby Hills, Ohio 44904-9445

Phone: (440) 975-3870

Fax: (440)

E-mail: drywell@en.com

Web site: <http://www.crwp.org>

A copy of the Chagrin River Watershed Partners' "Model Ordinance for the Establishment of a Riparian Buffer Area" can be found on NOACA's web site www.noaca.org

Western Reserve Resource, Conservation & Development District

The Countryside Program

P.O. Box 24825

Lyndhurst, Ohio 44124

Phone: (216) 295-0511

Fax: (216) 295-0527

E-mail: ninmile@en.com

Web site:

Copies of the "Conservation Development Resource Manual" are available for pick-up at all local SWCDs for \$15.00 and through The Countryside Program for \$15.00 plus a \$5.00 shipping charge. Excerpts of this document, including an overview and the Table of Contents, can be found on NOACA's web site www.noaca.org

Ohio Environmental Protection Agency, Division of Environmental and Financial Assistance (DEFA)

Lazarus Government Center

P.O. Box 1049

Columbus, Ohio 43216

Phone: (614) 644-2798

Fax: (614) 644-3687

E-mail: james.bonk@epa.state.oh.us

Web site: <http://www.epa.state.oh.us/defa/>

Ohio Environmental Protection Agency, Northeast District Office (NEDO)

2110 East Aurora Road

Twinsburg, Ohio 44087

Phone: (330) 963-1200

Fax: (330) 487-0769

E-mail: mbergman@epa.state.oh.us or dbogolveski.@epa.state.oh.us

Web site: <http://www.epa.state.oh.us/dist/nedo>

Please call Ohio EPA for information related to nonpoint source pollution control at (330) 963-1215 or storm water management at (330) 963-1145.

Ohio Department of Transportation (ODOT)

District 4

705 Oakwood St.

Ravenna, OH 44266

Phone: (330) 297-0801

Fax: (330) 297-1769

E-mail:

Web site: <http://www.dot.state.oh.us/dist4/>

Chapter 6

Protection of Regionally Important Water Resources

I. Background

A. Introduction

This chapter articulates the need for careful judgement to facilitate the management and protection of regionally important water resources which are sensitive to local environmental impacts and yet provide important benefits to the residents of the region. These water resources can benefit from the strategies described in the Clean Water Plan (CWP), which includes both legislative and administrative management recommendations.

A series of regionally important water resource categories have been identified in this planning process as candidates for protection under the CWP. These categories represent resources for which sufficient information exists to allow for the development of management recommendations and/or strategies by this plan. These include surface drinking water supplies, groundwater drinking supplies, and unique regional waters.

A number of protective measures were identified as possible means of enhancing water quality protection in the region under the auspices of the CWP. Different measures address different threats to water resources. In order to clarify which measures apply under specific conditions, a threat by threat analysis was produced. The threats analysis for the Regionally Important Water Resources categories are discussed and presented in Tables 6-5 to 6-7.

State and federal governments have identified water resources that warrant special protection through special water quality designations. The special protection available to these waters includes programs such as set-asides of assimilative capacity under the Anti-Degradation Policy, and the Total Maximum Daily Load (TMDL) studies. Local officials will have the opportunity to add to this list of protected waters through a recommendation of the CWP.

B. Regionally Important Water Resources

The development of management and protection strategies for regionally important water resources is based on existing information. As noted above, these include surface drinking water supplies, ground water drinking supplies, and unique regional waters. The following discussion describes each of these categories.

B.1 Surface Drinking Water Supplies

Many surface impoundments in the region are designated by the Ohio EPA as being “water supplies”. This definition applies to all bodies of water greater than five acres in size that are in public ownership. **Surface Drinking Water Supplies** also represent those waters which are

currently being used for active drinking water withdrawals. Protection of these waters and the watersheds that drain into them is a top priority within the region.

Some surface impoundments, mainly on the perimeter of the urban boundary of the region, may be considered for water supply use sometime in the future. All such impoundments should be subject to all of the recommendations that apply to existing use impoundments as soon as any public or private entity initiates planning for developing the resource for water supply.

The Ohio EPA maintains a data base of publicly-owned lakes and impoundments that are sufficiently large as to have potential for use as public water supplies. All of these bodies of water are designated for protection under the State’s water quality standards. This designation helps to minimize pollutant impacts from point source discharges. However, the designation cannot directly minimize contributions from nonpoint sources of pollution.

In order to provide for added protection of drinking water reservoirs, all such impoundments currently in use in the region were identified and mapped. The identification of existing water supply reservoirs was made by reviewing the Northeast Ohio Water Plan prepared by the Ohio Department of Natural Resources in 1992. Table 6-1 lists these reservoirs. Figure 6-1 locates them regionally. Additional lakes and reservoirs should be added to this list in the future whenever water planning efforts begin to consider the development of new water supplies in bodies of water not already on the list.

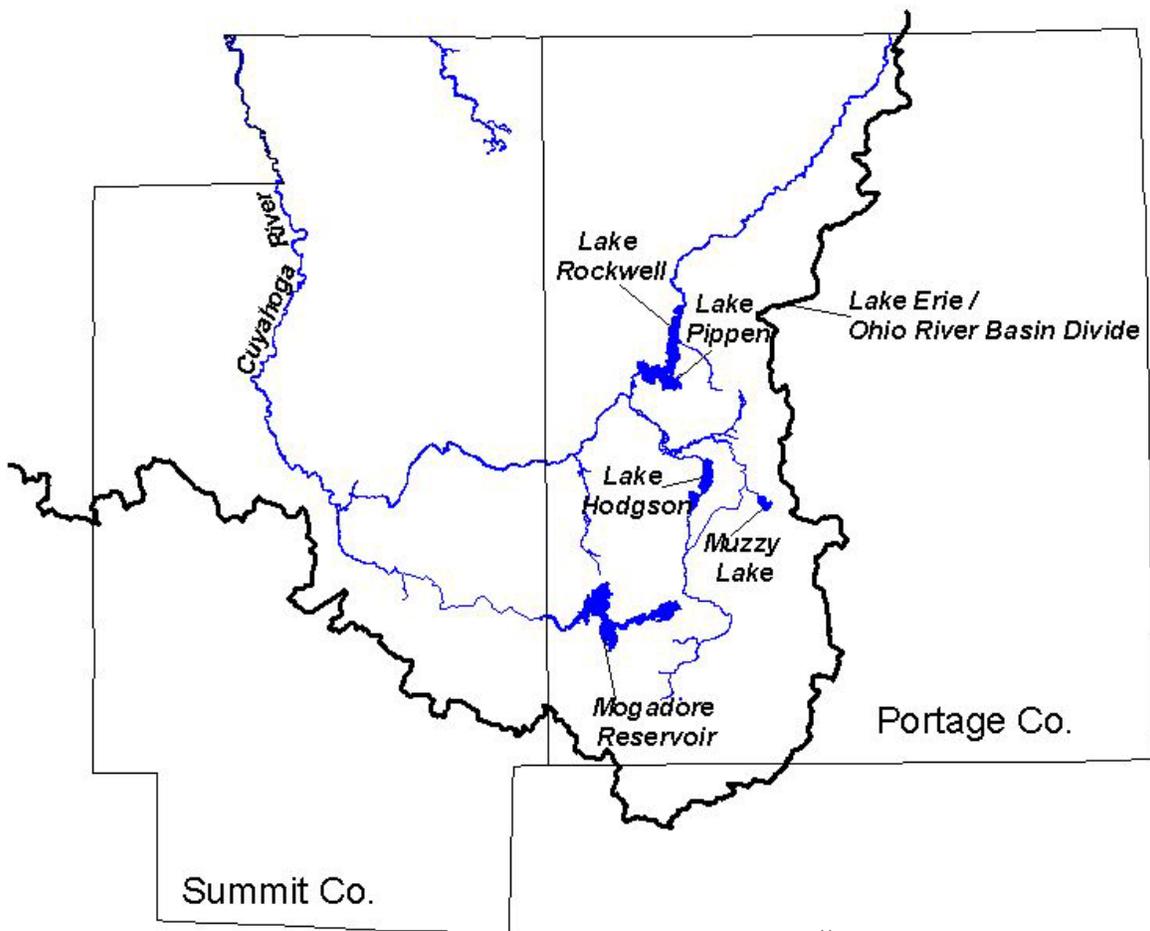
Many lakes and reservoirs in the region support recreational uses. Local officials should look to nominate any of these water bodies for inclusion on the protected list whenever there is evidence that existing controls may not be adequate to protect the continued use of the resource for recreational use or drinking water purposes.

Table 6-1: Active Inland Drinking Water Reservoirs important for the NEFCO Region

Reservoir(s)	Watershed	County	Community
East Branch Reservoir*	Cuyahoga River	Geauga	City of Akron
LaDue Reservoir*	Cuyahoga River	Geauga	City of Akron
Lake Rockwell	Cuyahoga River	Portage	City of Akron
Lake Hodgson	Cuyahoga River	Portage	City of Ravenna
Lake Pippen	Cuyahoga River	Portage	City of Akron
Mogadore Reservoir (potential backup supply)	Little Cuyahoga River	Portage	City of Akron
Muzzy Lake (potential backup supply)	Cuyahoga River	Portage	City of Ravenna

*See Northeast Ohio Areawide Coordinating Agency, 2000, Clean Water 2000.

Figure 6.1
Surface Drinking Water Supplies in the
Lake Erie Basin



Northeast Ohio Four County Regional Planning and Development Organization, April 9, 2003
Source: O & M

B.2 Groundwater Drinking Water Supplies

The identification of groundwater areas in need of protection is less defined than surface waters. One can pinpoint the locations of groundwater withdrawals for municipal drinking water systems. Areas served by individual systems/wells are distributed over a broader area. It is important in groundwater protection to manage aquifer recharge areas. The definition of aquifer recharge areas requires extensive subsurface geological information which is often not readily available. Therefore, those areas which are dependent on groundwater for a sizeable portion of local water supply are identified here in general terms only.

Groundwater supply areas are less precisely defined than surface water supply areas. This reflects the extensive nature of groundwater aquifers. While it is true that groundwater flows pay little attention to political boundaries, groundwater resource areas are described here on a political jurisdiction basis. This is appropriate because groundwater management is usually centralized in city and county level agencies. These usually include local health districts, the sanitary engineer, and the planning commission. Also, the Ohio EPA and ODNR assist local governments in managing and protecting groundwater supplies, and most of their work is organized on a county basis. The Generalized Groundwater Drinking Water Supply areas identified for consideration for priority protection are listed in Table 6-2. Recommendations that provide groundwater protection apply to all communities that rely on public or private groundwater supplies. Those communities that can have a direct impact on the quality of the groundwater supply being used in a neighboring community should also implement groundwater protective measures even if they themselves do not rely on groundwater.

Table 6-2: Generalized Groundwater Drinking Water Supply Areas in the NEFCO Region

Community or Geographic Area	Status of Development
Northern Summit County	Rural/Urbanizing
Western Portage County	Rural/Urbanizing

B.3 Unique Regional Waters

“Unique Regional Waters” is a general term (created by NEFCO) that refers to a series of stream segments that have unique or special characteristics. The segments selected for priority protection include all waterways designated by Ohio EPA as “State Resource Waters”. Additional segments have been identified in this planning process as meeting the criteria associated with State Resource Waters, but they have not yet been so designated.

“State Resource Waters” are surface waters that lie in National, State, or metropolitan park systems, wetlands, wildlife refuge areas, and preserves. They also include wild, scenic and recreational rivers, in addition to publicly-owned lakes and reservoirs.

Some of the segments that meet the State Resource Waters have also been nominated by the Ohio EPA as “Outstanding National Resource Waters” or as “Outstanding High Quality

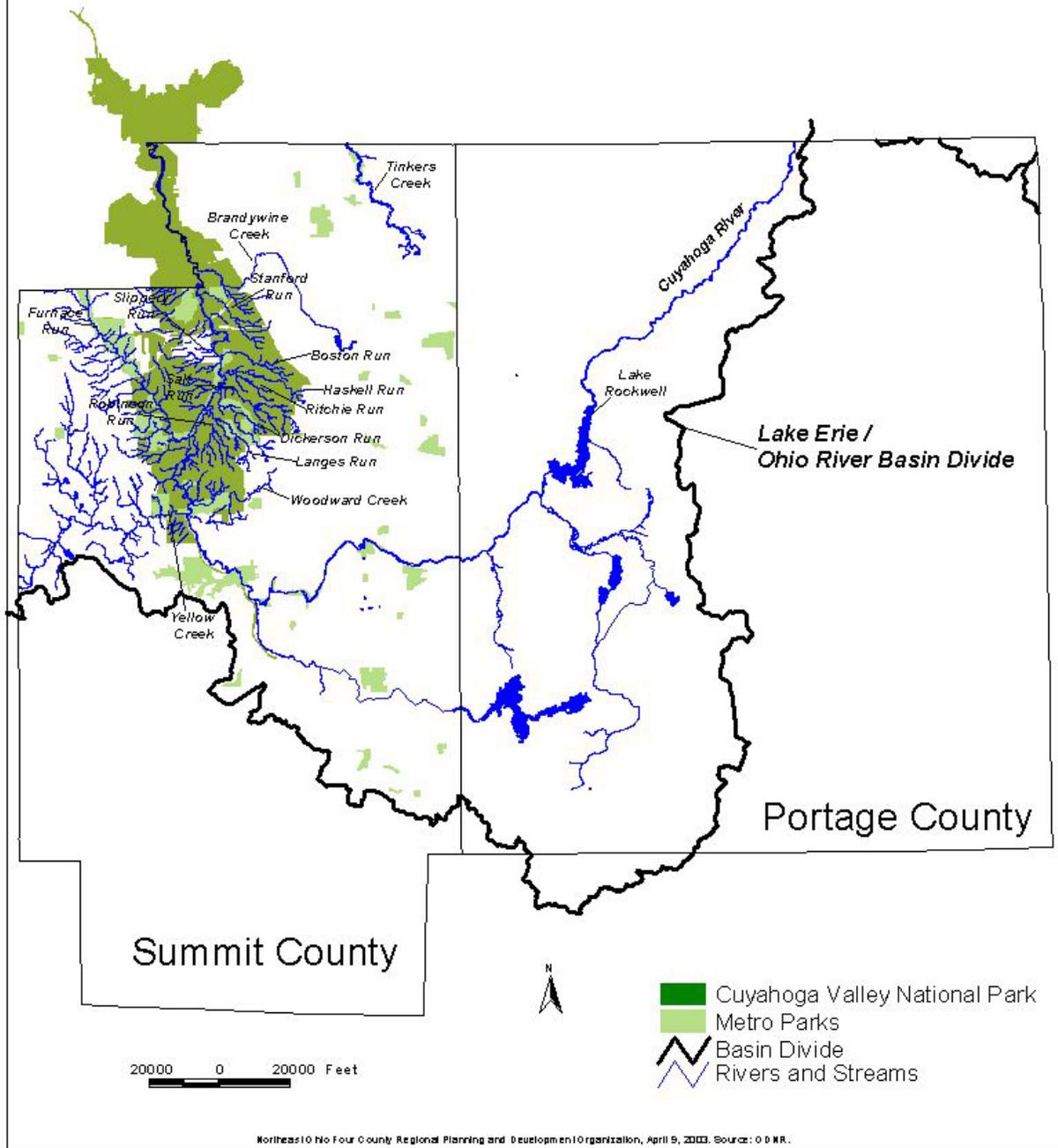
Waters” as part of the State’s Antidegradation Policy. These waters are surface waters that have a national or state ecological or recreational significance. Ecological significance may include providing habitat for populations of endangered or threatened species. Recreational significance can include designation in the national or state scenic river programs.

All river segments identified as “Unique Regional Waters” in this planning process are listed in Table 6-3 and shown in Figure 6-2. This table lists the unique or special characteristics for including each of the selected segments.

Table 6-3: Unique Regional Waters

BASIN	COUNTY	STREAM NAME	TOTAL LENGTH (Miles)	TOTAL DRAINAGE (Sq. Miles)	LOCATION / LENGTH of SEGMENT River Mile (RM)	REASON
Cuyahoga	Geauga Portage	Cuyahoga River	100.1	813.3	Troy Burton Township Line (RM 83.9) to SR-14 (RM 61.5)	State Scenic River
Cuyahoga	Portage	Cuyahoga River	100.1	813.3	Lake Rockwell RM 62.98 to 58.00 / 4.98	Bald Eagle Nesting Site/ City of Akron Water Supply
Cuyahoga	Portage	Tinkers Creek	30.2	96.4	RM 29.3 - 28.9	J. Arthur Herrick Nature Preserve
Cuyahoga	Summit	Yellow Creek	10.3	30.80	RM 1.5 to mouth	CVNP
Cuyahoga	Summit	Slippery Run	2.3	1.42	North of Major Road	CVNP
Cuyahoga	Summit	Robinson Run	2.4	0.94	RM 2.5 to Mouth	CVNP
Cuyahoga	Summit	Furnace Run	10.4	20.35	Cuyahoga/Summit Co. Line (RM 8.8) to Mouth	CVNP
Cuyahoga	Summit	Salt Run	3.4	2.84	RM 3.1 to Mouth	CVNP
Cuyahoga	Summit	Haskell Run	3.0	2.15	RM 3.1 to Mouth	CVNP
Cuyahoga	Summit	Langes Run	2.7	1.41	RM 2.4 to Mouth	CVNP
Cuyahoga	Summit	Woodward Creek	3.8	3.07	Northampton Road (RM 3.4) to Bath Road	CVNP
Cuyahoga	Summit	Stanford Run	3.0	2.08	RM 2.8 to Mouth	CVNP
Cuyahoga	Summit	Dickerson Run	3.6	2.62	RM 3.1 to Mouth	CVNP
Cuyahoga	Summit	Cuyahoga River	100.1	813.3	Bath Rd.. (RM 37.2) to Rockside Rd.. (RM 13.1)	CVNP
Cuyahoga	Summit	Brandywine Creek	11.5	26.21	Old RR Tracks (RM 2.2) to Mouth	CVNP
Cuyahoga	Summit	Ritchie Run	2.0	0.61	RM 2.0 to Mouth	CVNP
Cuyahoga	Summit	Boston Run	2.6	2.74	Just North of SR-303	CVNP
Cuyahoga	Summit	Cuyahoga River	100.1	813.3	Edison dam (RM 44.6) to Cuyahoga Street RM 42.8/ 1.8	Summit County Gorge and Cascade Metro Parks

**Figure 6.2
Unique Regional Waters
in the Lake Erie Basin**



C. The Analysis of Stressors on Regionally Important Water Resources

A stressor is defined as a stimulus that causes stress. Stress is a constraining force or influence producing a response or reaction. In the context of water resources loss of riparian habitat (stressor) causes an increase in water temperature and a decrease in dissolved oxygen (stress) which results in a loss of flora and fauna diversity in the stream (response). A stressor, however, may not necessarily produce a negative response. For example, discharge from an off-lot discharging sanitary disposal system (stressor) could have the loading of nutrients (stress) assimilated by the stream's natural processing (response) ability. This could preclude any negative conditions, e.g. the loss of dissolved oxygen (stress), from occurring.

The listing of stressors for each of the priority categories contains an itemization of those stressors which have affected similar resources in the past or which are currently threatening resources in the region and expectations of what might go wrong in the future. It is important to realize that not all resources in a given category are subject to all of the stressors listed. The geographic location of a special resource is a primary determinate of the type or types of stressors that are applicable. Whether a resource is located in an agricultural or urban area is very important. Fully developed areas may no longer be threatened by development as too little of the watershed remains to be developed. Headwater streams are subject to different pressures than large rivers. Ohio EPA has recently initiated Primary Headwater Habitat and stream assessment protocols. In some locations, some aspects of resource protection may already be in place. For instance, the riparian corridors through major park areas tend to be protected over much of their course. Therefore, a community should undertake a more detailed analysis of land uses before settling on the optimum list of protective measures for a given resource.

The analysis of stressors on local waterways must also consider which stressors are present as differentiated from those that may develop in the future. For example, as noted in Chapter 2, many areas throughout the region are experiencing substantial urban development. Outlying areas contiguous to urban areas are expected to develop over time, while very little growth can be anticipated far into the future in other outlying areas.

Each locality must be evaluated with this factor in mind. One must also factor in the relative importance of various stressors. An example is that road salt runoff is a factor at a given location only if the paved areas in the upland areas of a watershed are enough to require the spreading of large quantities of salt. A determination at each location has to be made about how important such a factor is today as well as how it is going to be in the future.

Table 6-4. Summarizes the stressors that have been identified as applicable to each of the resource categories.

Table 6-4: Stressors of Regionally Important Water Resources

Surface Drinking Water Supplies

1. Increased rates of sedimentation, bacteria, phosphorus, nutrients, and carbonaceous biochemical oxygen demand (CBOD) in storm water runoff due to shifts in land cover and land use in the upper watershed e.g. mining and silvaculture.
2. Increased loadings of toxic materials including heavy metals and pesticides.
3. Bacterial, phosphorus, and nutrient loadings from Publicly-Owned Treatment Works (POTWs) and other Wastewater Treatment Plants (WWTPs).
4. Increased salinity due to road salt runoff.
5. Increased nutrient loadings emanating from faulty on-site systems, small package plants, lawn care, altered agricultural practices, and/or confined animal feeding operations (CAFOs).
6. Concentrated leaks, spills, or dumping of oil, septage, other hazardous materials (e.g. gasoline) by stationary or mobile equipment.
7. Loss of riparian function in the upper watershed which would serve to reduce flowing pollutant loads.

Groundwater Drinking Supplies

1. Bacterial contamination due to faulty on-site system operation and maintenance.
2. Concentrated leaks, spills, or dumping of hazardous materials.
3. Over development of the resource either through over pumping or by over developing recharge areas.
4. Saline intrusion due to over pumping at depth.
5. Salinity problems resulting from road salt contamination.

Unique Regional Waters

1. Loss of riparian vegetation within a State Scenic or Wild River segment.
2. Stream channel instability problems related to the over development of the upper watershed and/or the loss of significant riparian vegetation in the watershed.
3. Habitat alteration due to increased storm water runoff from inadequately controlled development and from increased sediments loads related to poor construction practices.
4. Water warming due to the loss of riparian vegetation in upstream reaches or to increased surface runoff volumes.
5. Impairment or threat of impairment of recreational uses due to bacterial loadings.

II. Recommendations

This section outlines recommendations for actions by state and local management agencies for the protection of regionally important water resources identified in this chapter. These recommendations include measures geared specifically to the protection of resources and measures identified elsewhere in more detail (see Chapters 4 and 5). These latter measures are recommended for priority consideration and implementation by local jurisdictions to address the areas identified in this chapter.

The background section of this chapter addresses the resource problems and their causes. This section identifies potential solutions to ensure the long-term sustainability of these resources. As work progressed in this planning process, several themes emerged which established the framework and principles underlying the recommendations. Specifically:

- **Northeast Ohio depends on its water resources.** They are economically and ecologically important to the health and welfare of its citizens. These water resources provide drinking water from both surface and groundwater sources. They provide very important recreational benefits as well as contribute to a diverse ecosystem which provides important functional and economic benefits. However, changes in land use and population shifts have increased demands for these water resources and threaten many of these resources.
- **Nonpoint source pollution problems are both water quality and quantity based.** Nonpoint source pollution is a result of activities that take place on the land surface and the water dynamics that occur as a result e.g., how water runs off the land surface or is absorbed into the ground. Consequently, all land use activities have the potential to contribute to nonpoint source pollution problems. In particular, there is an emerging realization that unchecked storm water runoff, carrying debris, E-coli, CBOD, substances, oils and toxic materials from impervious surfaces, is in some cases a major stressor of critical water resources.
- **The solution to nonpoint source pollution and storm water runoff problems is watershed specific** and often involves multiple governmental jurisdictions. The nonpoint management programs that need to be utilized in any given watershed will vary depending upon the type of water resource present, the stressors on those resources, the existing land use, the future land use trends, the governmental structure having jurisdiction over land use decisions, the financial resources available, and the level of citizen involvement.
- **Because Ohio is a home rule state, local governments have a particularly important role in protecting regionally important water resources.** However, both the technical/administrative capacity and regulatory base (ordinances in villages and cities and resolutions in townships and counties) for protecting resources, as well as financial resources to carry out local programs, may be limited.
- **Improved linkages between different levels of government and existing protective mechanisms (PTI/HSTS process) are needed.** Actions taken by one level of government

should be coordinated to maximize local public investment and avoid long term irreversible negative impacts on water resources.

- Generally, because of the complexity of the problems and multiple jurisdictions involved, most likely no one protective mechanism will solve the problem. More likely a **wide range of mechanisms will be necessary** and, in many cases, may be preferred to give locally based and supported initiatives maximum flexibility in achieving their protection goals and needs.

The discussion below provides an overview of the stressors that apply to each category, and the protective measures that are recommended for application under the Clean Water Plan. Ground water protection is provided under the auspices of the Safe Drinking Water Act for public entities, and private water system rules for private entities. The measures recommended for managing individual on-site treatment systems and the septage that they generate have been discussed in Chapter 4. The need to carefully monitor road salt application in surface and groundwater supply areas was discussed in Chapter 5. The Riparian Corridor Protection Program outlined in Chapter 5 is the program that is needed to protect water resources in developing areas. Detailed recommendations below specify other measures for implementation to provide further protection to surface water drinking supplies and unique regional waters.

A. Stressors and Recommendations for Protection of Regionally Important Water Resources

1. Surface Drinking Water Supplies

Stressor: a. Increased rates of sedimentation and storm water runoff due to shifts in land cover/land use in upper watershed.

- Recommendation**
- i) Conservation design for storm water management.
 - ii) Storm water management ordinances.
 - iii) Soil erosion on construction sites ordinances.
 - iv) Riparian zone restoration and improvement

Stressor: b. Increased loadings of toxic materials including heavy metals and pesticides.

- Recommendation**
- i) Conservation design for storm water management.
 - ii) Antidegradation rule.
 - iii) Riparian zone ordinances or resolutions.
 - iv) Open space development.

Stressor: c. Bacteria, phosphorus and nutrient loadings from POTWs and other WWTPs

- Recommendation**
- i) Antidegradation rule
 - ii) Comprehensive study of effects of levels of fecal coliform, CBOD, suspended solids and nutrient loadings on surface water impoundment used for drinking water and aquatic habitat and low flow streams
 - iii) Based on study findings and U.S. EPA studies, prescribe the appropriate effluent limits.

Stressor: d. Increased salinity due to road salt runoff.

- Recommendation**
- i) Road salt minimization and storage management programs.

Stressor: e. Increased fecal coliform, CBOD, suspended solids and nutrient loadings emanating from faulty on-site systems, small package plants, lawn care, altered agricultural practices, and/or confined animal feeding operations (CAFO).

- Recommendation**
- i) Storm water management ordinances.
 - ii) Antidegradation Rule.
 - iii) Riparian zone ordinances or resolutions.
 - iv) Open space development.
 - v) Regional BMP plan for home and small commercial sewage systems.
 - vi) Septage disposal plans.
 - vii) Link-deposit program.

Stressor: f. Concentrated leaks, spills or dumping of oil and/or other hazardous materials and gas leaks by stationary or mobile equipment.

- Recommendation**
- i) Conservative design of spill containment facilities
 - ii) Periodic (semi annual or annual) inspection of all oil and gas wells and hazardous material storage by the State of Ohio. Inspection frequency dependent upon location vs. water course, size of facility and potential for degradation of water quality.
 - iii) All pipe lines of oil, gas or hazardous materials be visually inspected monthly by owner and certified by owner to the State of Ohio that such inspection has been conducted.
 - iv) That all oil, gas or hazardous lines be hydrostatically tested every five (5) years and that such tests be certified.
 - v) Ohio Department of Transportation counties and cities install protective barriers and contaminant measures on all state highway crossing major and streams to prevent accidental spilled material from reaching the water.
 - vi) Development by the Ohio EPA/ODH - County Health Department of an enforceable multi-county manifest system tied to POTW documented receipt of septage.

Stressor: g. Loss of riparian function in the upper watershed which would serve to reduce flowing pollutant loads.

- Recommendation**
- i) Conservation design for storm water management.
 - ii) Riparian zone ordinances or resolutions.
 - iii) Open space development.
 - iv) Purchase of lands or conservation easements to retain the land in a natural state.

2. Groundwater Drinking Supplies

Stressor: a. Bacterial loadings and contamination due to faulty on-site system operation and maintenance.

- Recommendation**
- i) Enhanced regional management practices and programs for individual residential and commercial sewage disposal systems.
 - ii) Continuing education program.
 - iii) Support of innovative alternative technologies.

Stressor: b. Concentrated leaks, spills, or dumping of hazardous materials.

- Recommendation**
- i) Septage disposal planning.
 - ii) Enhanced regional management practices and programs for individual residential and commercial sewage disposal systems.
 - iii) Source water protection planning.
 - iv) Enhance regional management of industrial hazardous material and hazardous material transportation e.g. oil and gas production.

Stressor: c. Over development of the resource either through over pumping or by over developing recharge areas.

- Recommendation**
- i) Open space development.
 - ii) Enhanced regional management practices and programs for individual residential and commercial sewage disposal systems.

Stressor: d. Salinity resulting from road salt contamination.

Recommendation i) Road salt minimization and storage management programs.

3. Unique Regional Waters

Stressor: a. Loss of riparian vegetation within a State Scenic or Wild River segment.

Recommendation i) Riparian zone ordinance or resolution, e.g. agricultural, silviculture or mining

Stressor: b. Stream channel instability and water warming problems related to the over development of the upper watershed and/or the loss of significant riparian vegetation in the watershed.

Recommendation i) Conservation design for storm water management.
ii) Storm water management ordinance or resolution.
iii) Antidegradation Rule.
iv) Riparian zone ordinance or resolution.
v) PTI application process revisions to address hydrologic impacts of development.
vi) Environmental and financial assistance.

Stressor: c. Habitat alteration due to increased storm water runoff from inadequately controlled development and from increased sediment loads related to poor construction practices.

Recommendation i) Conservation design for storm water management.
ii) Storm water management ordinance or resolution.
iii) Soil erosion and sediment control at construction sites.
iv) Antidegradation Rule.
v) Riparian zone ordinance or resolution.
vi) PTI application process revisions to address hydrologic impacts of development.

Stressor: d. Impairment or threat of impairment of recreational uses due to bacterial loadings.

Recommendation i) Enhanced regional management practices and programs for individual residential and commercial sewage disposal systems.
ii) Assimilative capacity reserve for exceptional waters.

REMEDICATION OF STRESSORS ON SPECIFIC REGIONALLY IMPORTANT WATER RESOURCES

Selection of Protective Measures to Remediate Stressors on Specific Regionally Important Water Resources

A series of protective measures were identified in the planning process as potential means of protecting and restoring water quality protection in the region under the auspices of the Clean Water Plan Update. These are grouped into six categories:

1. Permit to Install Measures

- a) Antidegradation rule to include regional resource waters;
- b) PTI application process requirements to address hydrologic impacts of development;
- c) Local assimilative capacity set aside for exceptional waters;
- d) Support of innovative alternative technologies.

2. Financial Incentives Measures

- a) Revolving loan fund assistance
 - 1) Open space development enhancements;
 - 2) Link deposit program enhancements;
 - 3) Environmental and financial assistance (septage disposal).
- b) Locally developed independent revenue source for storm water management, operation and maintenance and capital expenditures.
- c) Funding source for local health departments to address items described above in Chapter 4.

3. Waterway Protection Measures

- a) Conservation design for storm water management;
- b) Riparian zone ordinances or resolutions;
- c) Road salt minimization and storage management programs;
- d) Purchase of lands or conservation easements to retain the land in a natural state.
- e) Programs to prevent concentrated leaks and spills of hazardous materials at major road crossings over an important waterway.

4. Construction Site Management Measures

- a) Storm water management ordinances or resolutions;
- b) Soil erosion and sediment control ordinances or resolutions.

5. Individual On-site Sewage Disposal System Management Measures

- a) Regional BMP plan for home and small commercial sewage systems;
- b) Septage disposal plans;
- c) Better regional management practices and programs for individual residential and commercial sewage disposal systems;
- d) Continuing education programs.

6. Source Water Protection Plans

- a) Source water management and protection planning

The ability of a protective measure to effectively address resource stressors and to avoid degradation of a water resource is a function of several factors. This evaluation of specific water bodies includes a determination of stressors that are operative on that specific water resource. Resource stressors are classified as impacting if they presently exist. This can include stressors that are often associated with growing urbanization. Stressors are classified as threatening if they are likely to develop at some time in the near future.

Given the information about the stressors that are affecting a given water body, specific measures necessary for the protection of that resource can be identified. This identification has a similar hierarchy to the impacting/threatening nature of the stressors. In a given locale, a protective measure that has been identified as being applicable is considered to be a priority if its application is both needed and feasible, if it addresses a substantial portion of all of the stressors operative at the locale, and if there is a reasonable base of information to guide the implementation of the measure.

Supplemental measures are those which can be expected to address a stressor that has a more limited potential to impact water quality at a given location. Land area affected by a specific stressor may be insignificant if the stressor is entrenched in the watershed. Table 6-5 identifies stressors and protective measures for surface drinking water supplies. Table 6-6 identifies stressors and protective

measures for ground water drinking supplies. Table 6-7 identifies stressors and protective measures applicable to Regional Resource Waters.

Community	Reservoir(s) (Watershed)	Stressor		Protective Measures	
		Impacting	Threatening	Priority	Supplemental
Akron (rural)	East Branch Reservoir (Cuyahoga)	5	4,6,7	c,d,i,o	g,k,s,t,u,v,w
Akron (rural/urbanizing)	LaDue Reservoir (Cuyahoga)	1,2	3,4,5,6,7	b,e,i,o	c,d,g,k,s,t,u,v,w
Akron (rural/urbanizing)	Lake Rockwell (Cuyahoga)	1,3,4,5,6	2,3,7	b,d,e,i,o,s,t, u,v,w	c,k,g
Ravenna	Lake Hodgson (Cuyahoga)	1,4,5		b,c,d,e,i	
Akron	Lake Phippen (Cuyahoga)	4			b,f
Akron	Mogadore Reservoir (Little Cuyahoga)	2	1	b,d,m	j,p,r

Stressors

1. Increased rates of sedimentation and storm water runoff due to shifts in land cover/land use in upper watershed.
2. Increased loadings of toxic materials including heavy metals and pesticides.
3. Increased bacteria, phosphorus, and nutrient loadings from POTWs, other WWTPs, and/or collection systems.
4. Increased salinity due to road salt runoff.
5. Increased nutrient loadings emanating from faulty on-site systems, small package plants, lawn care, and/or altered agricultural practices.
6. Concentrated leaks, spills in dumping of septage and/or hazardous materials by stationary or mobile equipment.
7. Loss of riparian function in the upper watershed would serve to reduce flowing pollutant loads.

Protective Measures

- a. Conservation design for storm water management.
- b. Storm water management ordinances or resolutions.
- c. Control of soil erosion on construction, mining, and agriculture sites ordinances or resolutions.
- d. Antidegradation rule.
- e. Riparian zone ordinances or resolutions.
- f. Open space development.
- g. Road salt minimization and storage management programs.
- h. Regional BMP plan for home and small commercial sewage systems.
- i. Septage disposal plans.
- j. Link deposit program.
- k. Better regional management practices and programs for individual residential and commercial sewage disposal systems.
- l. PTI application process revisions to address hydrologic impacts of development.
- m. Environmental and financial assistance.
- n. Assimilative capacity set aside for exceptional waters.
- o. Purchase of lands or conservation easements to retain the land in a natural state.
- p. Continuing education program.
- q. Source water protection planning.
- r. Support of innovative alternative technologies.
- s. Inspections of hazardous waste sites e.g. oil and gas storage.
- t. Inspection and hydrostatic testing of oil, gas, and hazardous material pipelines.
- u. Study and measures to reduce discharges of phosphorus, CBOD, and other nutrients from WWTPs that adversely impact drinking water supplies
- v. Enforceable manifest system for septage and other materials.
- w. Containment/spill prevention measures on all state, county, and city roads crossing major drinking water supply streams

Community or Geographic Area	Stressor		Protective Measures	
	Impacting	Threatening	Priority	Supplemental
Western Portage County (rural/urbanizing)	1,3	2	k	i,m
Northern Summit County (urbanizing)	1	2	k	i,m

Stressors

1. Bacterial contamination due to faulty on-site system operation and maintenance
2. Concentrated leaks, spills, or dumping of hazardous materials.
3. Over development of the resource either through over pumping or by over developing recharge areas.
4. Salinity problems resulting from road salt contamination.

Protective Measures

- a. Conservation design for storm water management.
- b. Storm water management ordinances or resolutions.
- c. Control of soil erosion on construction, mining, and agriculture sites ordinances or resolutions.
- d. Antidegradation rule.
- e. Riparian zone ordinances or resolutions.
- f. Open space development.
- g. Road salt minimization and storage management programs.
- h. Regional BMP plan for home and small commercial sewage systems.
- i. Septage disposal plans.
- j. Link deposit program.
- k. Better regional management practices and programs for individual residential and commercial sewage disposal systems.
- l. PTI application process revisions to address hydrologic impacts of development.
- m. Environmental and financial assistance.
- n. Assimilative capacity set aside for exceptional waters.
- o. Purchase of lands or conservation easements to retain the land in a natural state.
- p. Continuing education program.
- q. Source water protection planning.
- r. Support of innovative alternative technologies.
- s. Inspections of hazardous waste sites (e.g. oil and gas storage).
- t. Inspection and hydrostatic testing of oil, gas, and hazardous material pipelines.
- u. Study and measures to reduce discharges of phosphorus, CBOD, and other nutrients from WWTPs that adversely impact drinking water supplies
- v. Enforceable manifest system for septage and other materials.
- w. Containment/spill prevention measures on all state, county, and city roads crossing major drinking water supply streams

Table 6-7: Stressors and Protective Measures for Unique Regional Waters

County	Basin	Name	Criteria	Stressor		Protective Measures	
				Impacting	Threatening	Priority	Supplemental
Summit	Cuyahoga	Boston Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga	Brandywine Creek (urbanizing)	CVNP	1,2,3	4	a,b,c,e,o	d,f,l
Summit	Cuyahoga	Cuyahoga River	CVNP	2,3,4,5		b,c,e,m,p,q	h,o,r
Summit	Cuyahoga	Dickerson Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga	Yellow Creek (urbanizing)	CVNP	1,2,3	4	a,b,c,e,o	d,f,l
Summit	Cuyahoga	Furnace Run (urbanizing)	CVNP	1,2,3	4	a,b,c,e,o	d,f,l
Summit	Cuyahoga	Haskell Run (rural)	CVNP	1,4		d,e,k	
Portage	Cuyahoga	Lake Rockwell (urbanizing)	Bald Eagle Nesting Site/ City of Akron Water Supply	1,2,3	4	a,b,c,e,o	d,f,g,k,l,m,n,p,q
Summit	Cuyahoga	Langes Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga/Haskell Run	Ritchie Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga	Robinson Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga	Salt Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga	Slipper Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga	Stanford Run (rural)	CVNP	1,4		d,e,k	
Summit	Cuyahoga	Woodward Creek (rural)	CVNP	1,4		d,e,k,	
Geauga Portage	Cuyahoga	Cuyahoga River (rural)	State Scenic River	1,4		d,e,k	

Table 6-7: Stressors and Protective Measures for Unique Regional Waters (cont.)

County	Basin	Name	Criteria	Stressor		Protective Measures	
				Impacting	Threatening	Priority	Supplemental
Geauga	Cuyahoga	Cuyahoga West Branch (rural)	High Quality Wetlands/Candidate for State Scenic River	1,4		d,e,k	
Portage	Cuyahoga	Tinkers Creek (urban)	Tinkers Creek State Park/ High Quality Wetlands	2,3	4	d,e	k

Stressors

1. Loss of riparian vegetation within a State Scenic or Wild River segment.
2. Stream channel instability problems related to the over development of the upper watershed and/or the loss of significant riparian vegetation in the watershed.
3. Habitat alteration due to increased storm water runoff from inadequately controlled development and/or from increased sediments loads related to poor construction practices.
4. Water warming due to loss of riparian vegetation in upstream reaches or to increased surface runoff volumes.
5. Impairment or threat of impairment of recreational uses due to bacterial loadings.

Protective Measures

- a. Conservation design for storm water management.
- b. Storm water management ordinances or resolutions.
- c. Control of soil erosion on construction, mining, and agriculture sites ordinances or resolutions.
- d. Antidegradation rule.
- e. Riparian zone ordinances or resolutions.
- f. Open space development.
- g. Road salt minimization and storage management programs.
- h. Regional BMP plan for home and small commercial sewage systems.
- i. Septage disposal plans.
- j. Link deposit program.
- k. Better regional management practices and programs for individual residential and commercial sewage disposal systems.
- l. PTI application process revisions to address hydrologic impacts of development.
- m. Environmental and financial assistance.
- n. Assimilative capacity set aside for exceptional waters.
- o. Purchase of lands or conservation easements to retain the land in a natural state.
- p. Continuing education program.
- q. Source water protection planning.
- r. Support of innovative alternative technologies.
- s. Inspections of hazardous waste sites (e.g. oil and gas storage).
- t. Inspection and hydrostatic testing of oil, gas, and hazardous material pipelines.
- u. Study and measures to reduce discharges of phosphorus, CBOD, and other nutrients from WWTPs that adversely impact drinking water supplies
- v. Enforceable manifest system for septage and other materials.
- w. Containment/spill prevention measures on all state, county, and city roads crossing major drinking water supply streams

C. Detailed Recommendations

1. Permit to Install Measure Recommendations

Recommendation 6-1: The Ohio EPA is requested to adopt changes to its Permit to Install (PTI) application procedure for new or increased discharges to areas identified as regionally important water resources in the CWP area as follows:

- a) a PTI applicant would be required to assess potential land use disturbances and off-site hydrologic and hydraulic impacts associated with the potential discharge;
- b) a PTI applicant would be required to develop measures to mitigate off-site hydrologic and hydraulic impacts to regionally important water resources, and agree to rigorously implement those measures.

This measure, if adopted, would revise Ohio EPA's PTI application procedure to identify applicant requirements to address water quantity and water quality effects of the proposal on regionally important water resources and watersheds. It seeks to improve linkages between the local regulation base for storm water management and to enhance the consideration of nonstructural and structural practices to reduce and manage runoff from development sites. The current PTI application process does not require applicants to address proposed measures for limiting storm water quality and quantity impacts which may impact critical resources directly or indirectly.

This measure seeks to alleviate the hydrologic impacts associated with the dense urban development that is possible with central sanitary sewer service. It recognizes that storm water runoff increases with development, unless closely controlled. As storm water runoff increases, due to increased surface imperviousness and vegetation removal, streams are hydrologically and hydraulically modified. This threatens their biological, aesthetic and recreational values, which are sought to be protected by the PTI process. By linking the PTI application process with local storm water management requirements in areas where new development or redevelopment is occurring, it is expected that protection of critical resources will be enhanced due to the more rigorous implementation of storm water best management practices. This measure does not apply to PTI applications that seek to correct existing problems related to existing development.

This measure requires a rule making change at the state level. Under the proposal, Ohio EPA would require any PTI applicant to identify measures and procedures for reducing off-site impacts to regionally important water resources. Among the measures to be considered by the applicant are the nonpoint source programs recommended in Chapter 5. (See Recommendations 5-1 to 5-6).

Recommendation 6-2: The CWP encourages local officials to augment state-initiated set asides for the Unique Regional Resource Waters within their jurisdictions by petition to the Ohio EPA and implemented through the Ohio EPA's TMDL process. Local officials are encouraged to request an additional set aside of up to 20% of the assimilative

capacity as an expression of their commitment to maintain high quality water resources where those resources have local importance. This recommendation involves the following designation steps:

- Step 1: An affected local jurisdiction or group of affected jurisdictions proposes an assimilative capacity set aside of one or more designated Unique Regional Resource Waters within its (their) jurisdiction(s);**
- Step 2: The proposed set aside would be evaluated through the NEFCO 208 review and circulated to all affected local jurisdictions for comment.**
- Step 3: Based upon the evaluation and recommendation by the NEFCO review process, the NEFCO Board would propose an amendment to the CWP seeking the designation of each accepted set aside.**
- Step 4: The Ohio EPA would consider this amendment for certification and implementation under the TMDL process.**

Section 303(d) of the Clean Water Act and Chapter 40 of the Code of Federal Regulations, Part 130 require states to develop total maximum daily loads (TMDLs) for waters not meeting designated uses under technology-based controls for pollution. The TMDL process quantitatively assesses the impairment factors so that states can establish water-quality based controls to reduce pollution from both point and nonpoint sources, and to restore and protect the quality of their water resources.

The Ohio EPA currently has the ability to establish assimilative capacity set-asides pursuant to the Ohio Administrative Code (OAC) Chapter 3745-1-05. At the present time, set-asides are developed on a case-by-case basis for proposals of new pollutant loadings to high quality waters protected by the State's Antidegradation Policy. The Director of the Ohio EPA may propose changes to the OAC to incorporate the new pollutant set-asides. The objective of Recommendation 6-2 is to reserve a portion of the assimilative capacity for all pollutants regulated by Water Quality Standards (OAC 3745-1) in streams designated as Regional Resource Waters in the CWP under the TMDL process. This reserve capacity would not be allocated to any pollution source.

Implementation of the set asides would limit or prevent threats caused by the impacts from new development proposed in areas designated for special protection through constraints on future Permits-to-Install (PTI) decisions. The use of this measure preserves the aesthetic, aquatic, and recreational benefits associated with specific stream segments. These benefits directly help to sustain the property values of properties contiguous to these river segments.

2. Financial Incentives Recommendations

Recommendation 6-3: The Ohio EPA's Division of Environmental & Financial Assistance (DEFA) is requested to amend its policies regarding the Water Pollution Control Loan Fund (WPCLF) to make enhancements to its financial incentives program to give priority to the protection of critical water resources identified in the CWP.

Recommendation 6-3a: The Ohio EPA’s Division of Environmental & Financial Assistance (DEFA) is requested to amend its policies regarding the Water Pollution Control Loan Fund (WPCLF) so as to reduce the interest rate charged to certain applicants who agree to expand and enhance their septage handling capability. The interest rate sought is to a level which would allow an applicant to save interest costs in an amount equal to the capital cost of the septage receiving facilities included in new WPCLF construction loans. This request applies to facilities accepting septage from areas tributary to regionally important water resources identified in Tables 6-6 to 6-8 as threatened by the lack of adequate septage handling capacity.

The Water Pollution Control Loan Fund, administered by the Ohio EPA-DEFA, can provide special interest rate incentives to cities/counties which agree to incorporate the installation of septage receiving/treatment facilities into pending treatment plant or collection improvement loans. This interest rate discount will provide an incentive to communities contemplating POTW improvements to add or expand such septage handling facilities to their proposed projects. Since the discount would be added to projects already planned to be constructed, the interest rate discount provides a “semi-grant” by absorbing the capital cost of the septage facilities. These facilities can, in turn be used by communities to generate revenue to either offset the additional treatment cost resulting from accepting septage at their POTWs or, in some cases, may even result in a net reduced operating cost. The establishment of septage disposal plans are essential to the successful implementation of the management recommendations presented in Chapter 4 to ensure proper operation and maintenance of individual sewage disposal systems (those used for residential dwellings and small business operation in unsewered areas). There is concern that with the enforcement of federal Part 503 Sewage Sludge and Septage Regulations, many of the current land application haulers may cease operations. It is essential to establish a network of publicly-owned treatment plants with septage receiving capabilities to cover septage generated in each county.

Recommendation 6-3b: The Ohio EPA-Division of Environmental and Financial Assistance (DEFA), through its Water Pollution Control Loan Fund (WPCLF) Link Deposit Program, is requested to provide low-interest financial assistance to individuals and private organizations for implementation of individual sewage disposal system improvements mandated by local health departments to reduce nonpoint source pollution in areas tributary to regionally important water resources waterways. The objective of this mechanism is to encourage the use of WPCLF monies for low interest loans to homeowners for system repairs and replacements.

This protective mechanism allows local health departments and the Ohio EPA to facilitate the replacement of failing systems by providing below market interest loans for residential and small business sewage system owners. The Ohio EPA-DEFA purchases certificates of deposit and accepts a reduced interest from participating local banking institutions. These funds are then provided by the participating banks as reduced interest loans to the owners making sewage system improvements at three percentage points below the rate the individual would normally receive. The lending institution uses its own loan criteria in deciding whether or not to offer an applicant a loan and will set the term of the loan. Homeowners and businesses may use these loans to make necessary improvements under orders from the District Board of

Health or the Ohio EPA, or to make voluntary improvements. To participate in the program a county health board must first develop a management plan, then identify interested local banking institutions. The Ohio EPA enters into formal agreements with each participating bank. The relationship between the Ohio EPA and the city or county health board is outlined in a memorandum of understanding which is signed by both parties.

Once a lending institution agrees to participate and meet the Ohio EPA requirements regarding the use of the funds, the local health department can begin issuing “Certificates of Qualification” to individuals for the Link Deposit Loan Program. The individual then takes the Certificate of Qualification to a participating lending institution. Upon receipt of a certificate, the lending institution can accept a low interest loan application. The application is reviewed by the bank and, if approved, the bank applies to the Ohio EPA for deposit funds. Once the WPCLF deposit funds are received, the bank disburses the loan monies to the homeowners as construction proceeds. The homeowner then repays the loan to the bank.

At the present time, all loan risks are assumed by the lending institution. The loan program would benefit if extra incentives could be made available to low and moderate income households. However, there are no such provisions in the program at this time.

Under this program, loans are available for the repair or replacement of a failing on-site system. Loans cannot be made to cover the cost of installing on-site systems associated with new construction. In some limited cases, loans can also be made to facilitate the abandonment of an on-site system and the connection to a sanitary sewer. Current federal policy prohibits the use of federal funds for this purpose. However, state funds can be so used.

Recommendation 6-3c: The Ohio EPA-Division of Environmental and Financial Assistance (DEFA), through its Water Pollution Control Loan Fund (WPCLF) Link Deposit Program, is requested to provide low-interest financial assistance to be utilized as an economic incentive for residential subdivisions and other development projects that utilize open space design techniques in areas that are tributary to regionally important water resources identified in the CWP.

The Ohio EPA’s Water Pollution Control Loan Fund assistance can provide an economic incentive to lay out and construct subdivisions and other development projects in a manner reflecting open space design techniques, avoiding adverse environmental impacts on a variety of resources, and promoting protection of environmentally-sensitive areas and resources. The basic criteria include proximity to the water resource, land use compatibility, timing of the nomination of the project for WPCLF financing, and environmental protection elements of the development proposal. The purpose of providing WPCLF assistance in this context is twofold: a) to protect a water resource that is fully attaining a warmwater, exceptional warmwater or cold water habitat designation or a high quality wetland, or b) to restore a water resource to full attainment with one of the aforementioned designated habitat uses, or a wetland area to a high quality wetland. The management plan is very specific that financed improvements must serve to accomplish either one of these purposes. Recommendation 6-3c seeks Ohio EPA prioritization of this form of assistance to projects addressing critical resources identified in this CWP.

In this context, WPCLF assistance to developers will encourage them to design and build projects that will provide appropriate scale housing (or other structure) densities while protecting environmentally sensitive areas, minimizing impervious surface area, and reducing soil loss from construction sites. By meeting the WPCLF criteria, developers may be eligible to borrow WPCLF funds at a below market rate for up to 20 years. In addition, the costs and time to develop projects will be lessened by specific actions such as eliminating stream crossings and reducing the area covered by impervious surface material. House lots adjacent to open spaces traditionally sell faster and at premium prices.

The open space concept encourages a reduction in 50-70 percent of a subdivision to remain as conservation areas, therefore; the watershed will have fewer impervious surfaces, reduced lawn chemicals and more natural wildlife habitat than that provided under typical zoning and land use proposed for the project site. Minimal construction activity in the project area will also result in less soil erosion and sedimentation into local streams.

Most rural zoning requirements have minimum lot sizes established for home sewage systems. Open space housing lots are normally smaller than the required minimum. Negotiations and innovative approaches may be key to resolving these types of issues in accordance with the minimum criteria established for the WPCLF program. Guidelines for the construction of these are discussed in Chapter 5 (see Recommendation 5-4).

In some circumstances, county and municipal building and zoning codes must be amended before developers will be able to take advantage of this program. All communities are encouraged to make such amendments if necessary.

3. Waterway Protection Measures Recommendations

Chapter 4 presented a program for improved management of home sewage disposal systems and semi-public systems by local health departments. Chapter 5 recommended a variety of nonpoint source and storm water management programs for implementation by local jurisdictions. The CWP encourages local jurisdictions to pursue these actions on a priority basis in the critical resource areas identified in this chapter.

Recommendation 6-4: Local jurisdictions are encouraged to pursue on a priority basis the implementation of nonpoint source recommendations outlined in Chapter 5 and the management of home sewage disposal systems in Chapter 4 in areas tributary to regionally important water resources.

4. Construction Site Management Measures Recommendations

Chapter 5 identified the need for construction site erosion and sediment control programs for implementation by local jurisdictions. The CWP encourages local jurisdictions to pursue these actions on a priority basis in the critical resources areas identified in this chapter.

Recommendation 6-5: The Ohio EPA is requested to focus their enforcement activities of the National Pollutant Discharge Elimination System permits for construction site activities in developing communities which are tributary to Unique Regional Waters and Surface Drinking Water Supplies identified in the CWP that are not adequately protected by local construction site management programs.

5. Individual On-site Sewage Disposal System Management Measures

The reader is referred to Chapter 4 of the CWP for details and recommendations. Chapter 4 discusses problems associated with the management of home sewage and semi-public sewage disposal systems in Northeast Ohio and outlines the roles of local and state management agencies in this management system. It presents a series of management system recommendations for implementation by local health districts and other management agencies that would improve the performance of these systems and reduce their impact on water quality in the region. These recommendations are the work of a committee of the seven county health districts, Ohio EPA, and NOACA and NEFCO. This chapter concludes with a discussion of strategies for implementing these recommendations.

6. Source Water Protection Plans Recommendation

The specifics of measures to address impairments (existing and potential) to source waters are evaluated in a watershed management plan for surface water supplies and a wellhead protection plan for groundwater supplies. These plans detail the existing conditions, a diagnosis of problems, estimates of costs, and expected benefits. NEFCO advocates the use of watershed management plans, surface water, and wellhead protection plans to efficiently apply local monies and energy to protect and restore regionally important water resources.

Recommendation 6-6: Local communities and agencies are encouraged to initiate and complete source water management plans.

III. Policies for Encouraging Local Actions for the Protection of Regionally Important Water Resources

This section sets forth areawide policies for supporting the program of regionally important water resources protections spelled out in this chapter.

Policy 6-1: NEFCO resolves that the surface drinking water reservoirs listed in Table 6-1 as regionally important water resources that warrant priority protective action by local jurisdictions whose land area is tributary.

Policy 6-2: NEFCO resolves that the groundwater drinking supplies in areas listed in Table 6-2 as regionally important water resources that warrant priority protective action by the Ohio

EPA. Local jurisdictions are encouraged to work with the Ohio EPA and local health departments to implement programs developed to protect the groundwater supplies.

Policy 6-3: NEFCO resolves that the stream segments listed in Table 6-3 as Unique Regional Waters possess unique or special characteristics that warrant priority protective action by the Ohio EPA.

Policy 6-4: NEFCO encourages local and county jurisdictions to pursue implementation of the home sewage and semi-public sewage disposal management recommendations outlined in Chapter 4 and the nonpoint source management recommendations outlined in Chapter 5 on a priority basis in areas tributary to the regionally important water resources identified in this plan.

Policy 6-5: A local or county jurisdiction that agrees to implement one or more of the regionally important water resources protection recommendations outlined in this CWP are recognized as a designated management agency for that purpose in this plan.

Policy 6-6: Local and county jurisdictions are encouraged to pursue implementation of the regionally important water resources protection recommendations outlined in this CWP by cooperating on an interjurisdictional watershed basis.

Policy 6-7: NEFCO encourages state and federal funding agencies to provide, on a priority basis, nonpoint source and watershed grants to support implementation of regionally important water resources protection recommendations by designated management agencies recognized in this plan.

Policy 6-8: NEFCO will support local government planning and implementation of the protective measures for regionally important water resources with technical and planning support through the continuing planning process.

IV. Strategy for Implementing Protection of Regionally Important Water Resources

Implementation of the programs recommended in this chapter will require an active sustained effort of promoting and supporting local planning and implementation initiatives. This is an effort that will require the sustained interest and cooperation of a number of agencies with nonpoint source technical resources, including the areawide planning agencies, county level support agencies such as the county soil and water conservation districts, county sanitary engineers, county engineers, county planning agencies, local health districts, designated sewer districts and municipalities, and others, state agencies including the Ohio EPA, ODNR, ODH, ODOT, the Ohio Lake Erie Commission and the OWDA among others, and area watershed planning organizations.

The presentation of the draft plan to local jurisdictions for review and comment provides an initial opportunity for promoting these recommendations, but the continuing planning process must take into account the need for on-going work.

Chapter 7

Urban Stream Restoration Plans

Introduction

This chapter outlines a strategy for urban stream restoration. It is proposed as a way to start or restart processes of stream restoration for streams whose land use is predominately urban and which, generally, are not attaining current standards. These urban stream restoration plans would be individually tailored to a specific stream or stream segment with the help of substantial public participation. This is expected to result in outcomes which reflect community goals. Traditionally, resources devoted to stream protection have been focused on pollution abatement. While pollution abatement remains a necessary activity, other measures to protect or restore streams can often more effectively restore water quality.

I. Background

The Lake Erie Basin 208 Clean Water Plan (CWP) presents a framework through which planning to protect and restore water quality in the NEFCO region can occur. The CWP attempts to facilitate the efficient uses of local resources in facility investment, promote responsible management of home and semi-public wastewater treatment systems, ameliorate the impacts of nonpoint source pollution runoff, and protect regionally important water resources.

This issue is part of a larger concern to establish realistic standards for streams. A more comprehensive and legally defensible analyses is needed to facilitate effective planning for urban streams in the NEFCO region, though. Without such an analysis, the CWP needs to support the current stream designation strategy and work within those guidelines.

Future efforts for a regionally endorsed urban stream restoration plan should:

- 1) Be based on a scientific approach and a thorough analyses of costs and benefits. Local impacts need to be considered. The urban stream restoration plan will need to prepare a scientifically defensible mechanism.
- 2) The Urban Stream Restoration Plan will need a detailed analyses of specific streams (or segments of streams) that would be affected.
- 3) The Urban Stream Restoration Plan should also demonstrate how existing rules and designations preclude downstream attainment and how further investment of resources in specific streams will not be cost effective.
- 4) An Urban Stream Restoration Plan should initiate a statewide initiative to examine how stream standards could be more appropriately determined. Other stream segments that probably may warrant Restoration Plans and designation may include; rural agriculture; rural and urban flood control, rural recreation, and water supply.

The value of tailored approaches to guide urban stream restoration

There is a strong need for initiatives to consider the establishment of reasonable standards for restoring urban streams. Currently, aquatic life water quality standards are based upon reference streams from undeveloped areas. Urban ecosystems, in particular, are at risk from a wide range of stressors beyond point sources of pollutants. Modified land use patterns in urban areas typically impact nonpoint pollutant loads to surface and ground waters, alter the hydrology of a stream, and destroy the biotic and hydraulic functions of stream corridors. While a wide range of significant stream stressors are well documented, we continue to invest our resources in narrow solutions that have little chance of effecting desired change. Pollutants are just one of many factors which affect an ecosystem. Accordingly, our current focus on pollutant reduction may have little connectivity to the full range of factors that affect ecosystems. (Factors that influence ecosystems include interactions between the history of the area, current societal use of the area and a host of biological and non- biological conditions.) Further, it is typical that restoration efforts are applied at a smaller scale than is needed to substantially reverse the stresses that are the root cause of stream degradation.

A range of flexible institutional and technical tools are needed to assist the communities and the region in developing more effective restoration plans. Unfortunately, under the current system local communities seem unable to determine appropriate distribution of resources for stream protection. Local communities currently have little say in making adjustments with respect to ecosystem goals. Expectations in the form of chemical and biological criteria are set at the state and federal level, with little or no tailoring to the full range of regional and local factors.

Despite some seemingly irreversible changes and the failures of our past efforts, there is good reason to believe that, through better management, a large number of urban streams can provide high value to surrounding communities. The character of urban stream problems suggests that we should start with water quality goals and water quality criteria that are tailored to particular circumstances, reflecting both the past modifications of the stream ecosystem and community goals for the stream. Criteria reflecting the characteristics of more natural areas will not always be appropriate. Criteria appropriate for less impacted areas may be prohibitively expensive to obtain (or unattainable at any cost), may require reversing existing land uses, and may be unnecessary to meet community goals.

Tailored urban standards are proposed as a tool to further the goals of stream restoration. A community process should create standards which consider the characteristic of an urban stream and community values. It is expected that these alternative standards will be more meaningful to the community and serve as a goal against which communities can measure progress. Urban stream standards might ultimately require more stringent or less stringent levels of pollution control. Because these alternative standards would have an urban focus, they should be able to do a better or more efficient job of managing urban streams for desired goals.

Overview of the need for urban standards to address issues related to bio-criteria and recreational use standards

There is a pressing need to focus on two areas where urban streams typically fall far short of meeting existing standards -- the biological criteria for aquatic life uses and the bacteria criteria for contact recreational use. A process that sets attainable goals in these areas could greatly further watershed restoration by prompting action as well as focusing attention and resources toward underlying stream problems.

Despite broad scientific agreement that many factors affect attainment of aquatic use standards, current regulatory programs have little choice but to focus on what they have power to control (i.e., point sources) as a means to attain this goal. Much has been written to suggest that at successive levels of urbanization, typically characterized as “percent imperviousness,” natural hydrology patterns and natural stream functions are irreversibly lost. At the same time there is a growing consensus that even if waters meet chemical criteria, they will not meet biological criteria if the natural hydrologic and hydraulic stability is lost, and a reasonably protective stream corridor is absent.

High bacteria levels and CBOD loadings during and following storm events is a second universal problem for urban streams. Added to this problem are the inexact nature of bacteria analysis and the historical format of recreation standards which were first developed for use in regulating public swimming beaches. The physics and hydraulics of water movement and pollutant load transport in urban streams are clearly very different from those in a beach situation. Additionally, the public use of urban streams is quite different from the public use of beaches. In urban streams the flow rate and the concentration of pollutants carried by the water both increase dramatically shortly after a storm event. For small streams most of the pollutant load is washed out of the stream system in less than 24 hours. Beach waters tend to respond to storm events more slowly and tend to recover more slowly.

Beyond the format and construction of the recreational use standard, there is an additional issue that safe bacteria concentrations are not always attainable. Development of criteria that are more responsive to stream situations should also deal with the reality that high bacteria spikes during a storm event are virtually uncontrollable. A likely key element for consideration in the development of urban standards for bacteria is defining this spike and developing programs to manage contact recreation during this period to protect public health.

It is widely recognized that high bacteria periods coincide with high drowning risk. In particular, flow rates in urban streams rise particularly quickly and more frequently exceed bank-full flows. Additionally, urban streams are likely to contain a variety of structures such as dams, drop or inlet structures, and abutments which create drowning dangers. Many urban streams are also difficult to exit as they are less likely to have point bars and are more likely to have steep constructed bank walls. Finally, the abundance of culverts and bridge structures along with incised channels lead to a larger number of debris jams which present a safety risk during high water.

A risk management context may be particularly appropriate for recreational use standards. Such an approach can account for management strategies such as prohibition of contact recreation during certain periods to reduce the potential of exposure to pathogens.

Urban stream restoration is a developing science

There are technical and institutional barriers to developing standards that are more protective of urban streams. At a technical level, barriers include a lack of understanding of the particular mechanisms and issues affecting a particular stream, the impact of potential remedial actions, and the cost-effectiveness of remediation strategies. While the science is developing in these areas, much work remains to identify the practical upper end for stream restoration and to be able to provide cost guidelines for alternative levels of restoration. In the interim, prototype urban stream plans could go forward with the best scientific practices in an attempt to meet goals set by the community. Prototype plans should contain an evaluation component to generate additional information to assist in answering research questions. Collected information will also be helpful in addressing the related problem of high quality streams being degraded by advancing urbanization. Currently there is a lack of quantitative data to help planners understand the impacts of land use decisions or to understand the effectiveness of mitigation techniques.

State and National perspective on standards to address urban concerns

A substantial portion of the resources invested in water quality attainment across Ohio is spent on solving water pollution problems in urban streams. Based upon this fact alone, there is some logic to the development of standards that more effectively address urban issues.

The United States Environmental Protection Agency (USEPA), as a part of its policy to deal with Combined Sewer Overflows (CSOs), has encouraged states to look at refinement of existing standards as a tool in addressing the issues of addressing CSOs. Because USEPA's CSO policy requires that CSOs cause violation of water quality standards, there is a strong need to evaluate whether urban water quality standards can be constructed in a manner which remains protective of public health and eases the enormous financial burden of designing facilities to handle large storms without causing violations of water quality standards. In 1999, USEPA began a study of the difficulties which have prevented states from adopting modified water quality standards.

USEPA's National Risk Management Research Laboratory (NRMRL) has suggested approaching watershed restoration as a risk management activity: "Ecosystem restoration in a risk management context is the science of quantifying the risks, rewards, and levels of certainty associated with the full range of potential outcomes resultant from changes (both intended and unintended) to the landscape caused by land use and to functional connections between habitat".

The Ohio Department of Natural Resources (ODNR), as a part of its nonpoint source management program, has recently proposed the goal of creating processes to assist communities in setting goals for urban watersheds. Ohio EPA has demonstrated this concept by developing a unique standard to support community objectives for the Ship Channel of the Cuyahoga River. The standard sets a specific criteria target to support the community - developed goal of fish passage which allows for upstream spawning. The standard specifically calls out these criteria that are being approached through a phased Total Maximum Daily Load (TMDL) program. The standard discusses involvement of the community in developing creative solutions to the problems that are unique to the ship channel.

Ohio EPA, recognized as a national leader in the collection and regulatory uses of biological metrics, is in a unique position to advance the concept of bio-criteria specific to urban areas. Ohio EPA has begun a data collection program to look for relationships between land use patterns and aquatic performance of streams that would establish what performance levels can be expected from an urban stream.

Additionally, Ohio EPA has held preliminary discussions with interested parties regarding the concepts of urban standards and wet weather standards. One of Ohio EPA's interests is in determining whether standards can be crafted that could be applied to a broad range of locations across the state.

II. Elements of the Proposed Urban Stream Planning Process

A conceptual model for urban stream restoration

Clearly the process set up by the Clean Water Act (CWA) deserves considerable praise for the clean-up progress that has occurred over the last 25 years. Technology-based treatment standards were a quick way to start the clean-up process. Water quality based effluent standards were the next step in approaching the ultimate goal of fishable and swimmable waters. The current focus on the total maximum daily load approach is an attempt to re- focus pollution abatement efforts to be more in line with a watershed approach to resource management. But these processes all lack the power to relate to community goals and to address some root problems, particularly land use issues, which often determine the health of urban streams. In fact, as discussed below, the current regulatory process seems in many ways to work against a more integrated community process to upgrade the quality of urban streams.

The intractable nature of urban stream degradation suggests that we consider new approaches to guide restoration efforts.

Many of the principles used to guide the development of the proposed urban stream restoration planning process discussed herein originate from the premise that correction of the ills affecting urban streams will ultimately require a strong and flexible community- based process. The process would look at the root causes of stream ecology degradation, consider risk and rewards of various restoration actions and would set flexible long term goals that are well integrated with other community goals. Ideally, attainment of goals would be approached through incremental steps and adjusted over time to keep in touch with changing community needs. The benefits of stream restoration and protection should be emphasized as a driving

force for restoration efforts. At the same time, some boundaries and regional support mechanisms would be put in place to support attainment of larger environmental goals, as illustrated in the need to protect or enhance downstream beneficial uses.

Model of proposed urban watershed planning process

A regulatory program that encourages community-developed urban use designations (i.e., stream goals) could be the catalyst for community work to define and address problems at the heart of urban stream impairments. If flexibility is allowed in setting goals, communities are likely to respond with ideas that are efficient in increasing the value of the resource. If resources for pollution abatement could be re-targeted, many communities would likely be interested in addressing the root causes of urban stream problems with measures such as habitat protection, stream restoration and storm water management.

The expectation of community benefits and local investment in goal setting is likely to encourage the concept of municipal stream stewardship and individual action at the homeowner level. Of course, the end point of this process needs to be the actual recovery of stream benefits. However, experience shows that ecological restoration of urban streams will likely be a slow process under any model. During the restoration period, progress should consider interim achievements and the strength of the processes driving resource protection.

Objectives for an urban stream restoration program

The following objectives are proposed to guide the restoration of urban streams. A program should:

1. Identify incentives to interest the local community in participating in an urban stream restoration plan.
2. Encourage certain minimum requirements to assure that water quality improvements will be realized.
3. Provide a framework to guide community action for a wide range of stream conditions and a range of community restoration desires.
4. Encourage communities to explicitly examine the value of improved stream quality as a stand-alone benefit and as a factor that furthers other community goals.
5. Encourage communities to address root problems affecting stream health and to consider the range of initiatives that could positively impact stream quality.
6. Encourage consideration of both a community's specific situation and the protection of downstream uses.
7. Account for the dynamic process of ecosystems, and the non-deterministic nature of restoration activities. This includes understanding potential risks of stream restoration activities.

8. Encourage the establishment of both short and long term stream restoration goals and promote long-term goal attainment through incremental approaches.
9. Encourage the development of plans which explicitly define institutional responsibilities for implementation.
10. Encourage the shifting of resources to projects which achieve the largest benefits (i.e., balance allocation of resources to a range of potential protective, mitigative, and pollution reduction measures).
11. Provide an adequate time frame for communities to undertake their planned programs and to make reasonable adjustments without the threat of enforcement action when reasonable progress is being made.
12. Strengthen the capabilities of a community to develop and implement stream improvement measures.
13. Integrate action steps with other community goals and programs to gain long-term support for improvements.
14. Provide feedback to facilitate adjustment of strategies and to reinforce continuation of the improvement process.
15. Encourage the re-evaluation of goals to assure that efforts are in fact protecting the larger environment and maximizing benefits to the community.

Logic of Clean Water Act Section 208 planning as a vehicle to manage the development of Urban Stream Restoration Plans

A central purpose of the proposed urban stream restoration program is to direct resources and attention to solving the most critical problems affecting streams. In many cases the most serious problems affecting urban stream health are associated with land use practices.

In Northeast Ohio most land use planning decisions are controlled at the municipal level. Coordinating land use decisions is particularly complex because of the large number of municipalities that might be included in a watershed. Further, our past history suggests that local communities have often worked against their best interests by ignoring the impact of land use on water resources. Finally, the Clean Water Act itself has little direct authority to regulate land use. Accordingly, the most powerful process for restoration of urban streams is likely one that provides a regional perspective on the value of resources, motivates interests at the local level, and utilizes the authority that is available within the Clean Water Act.

While facilities planning, as provided for by Section 201 of the Clean Water Act, is traditionally focused on the more narrow question of wastewater treatment facilities, this process could be modified to form the basis for a more holistic look at urban water resource restoration. Facilities plans can also be a mechanism for stating the case for re-evaluation of

water quality standards. Based upon review of the merits made in the facility planning document (presumably with substantial consultation with regulatory agencies along the way) the designated regulatory agency could chose to initiate changes to water quality standards. Further, facilities plans are required to be consistent with Section 208 plans and as a result there is a connection with larger regional issues. In other cases, facilities planning may not be an appropriate mechanism. For example, problems might arise with the timing of planning wastewater facilities and planning watershed restoration implementation steps. Another problem that can be anticipated is a lack of correspondence between facilities planning boundaries and the logical planning unit of watersheds.

Strategy for implementation of an Urban Stream Restoration Plan (USRP) under the auspices of the CWP

Policies and recommendations to implement the proposed program are presented in Section IV below. The principal elements of the proposed program are illustrated by the following steps in the development and implementation of an “urban stream restoration plan program”.

- A. The group of interested parties, (i.e., the implementing parties) would meet with the appropriate designated areawide planning agency to discuss the designation process and appropriate boundaries for the urban stream restoration plan (USRP). The discussion would also likely review the availability of technical information to support the planning process and the envisioned time frame for the development of an USRP. The planning agency would establish a committee to develop detailed recommendations relative to the designation process and other program elements.
- B. A memorandum would be prepared to notify all interested and affected parties of the proposal to develop an USRP.
- C. The implementing parties would establish the various public processes that would be necessary to guide and support the development of a USRP.
- D. The development of a USRP would follow a planning process that initially focuses on the root causes for the condition of the urban stream segment in question. This would be followed by a community goal-setting process. Alternative sets of actions to restore the stream segment to chosen goal levels would be created and evaluated to lead to a recommended set of actions. The product would include an implementation plan outlining responsibilities for achieving both short and long term stream goals. (In some respects the process would be similar to the development of a facilities plan under section 201 of the Clean Water Act. It would differ however in that the focus would be on total stream health, goal setting that considers the broad interests of the community, and alternatives that would include consideration of land use control measures.
- E. With the aid of consultation from appropriate regulatory authorities, the planning process would, as appropriate, generate a proposed specific use designation and appropriate water quality criteria (i.e., proposed water quality standards) to support the goals and implementation schedule for the proposed USRP.

- F. The proposed USRP, including the proposed supporting water quality standards, would be submitted to the designated Clean Water Plan (CWP) planning agency for consideration and adoption as part of the area's CWP. The review process would look at the issue of protection of downstream uses and assure that appropriate best management practices have been included to protect stream health. Additionally, the CWP would consider measures of technical and institutional support for the USRP. The amended CWP would be forwarded to Ohio EPA for incorporation into the state's Water Quality Plan. Incorporation of the amended CWP into the state's Water Quality Plan would likely be accompanied by a schedule for Ohio EPA rulemaking.
- G. Ohio EPA would undertake a rulemaking process to consider the proposed water quality standard component of the proposed USRP. (The state would also consider Total Maximum Daily Loads plan and initiate any associated NPDES permit actions needed to achieve consistency with the plan. It is hoped that the state would also adopt policies that would help to direct available resources to priorities set forth in the USRP.)
- H. The named implementing authorities in the USRP would be responsible for carrying out measures called for in the plan in a coordinated fashion. It is anticipated that a coordinating organization may be designated to provide overall direction to the implementation effort.
- I. During the process of implementation, the designated water quality management planning agency would monitor progress and use its other planning processes to support the goals of the USRP.
- J. At the local community level, processes would be established to report on implementation progress. Additionally, work would continue on adjusting strategies and adding specificity to the implementation plan for upcoming project efforts and progress monitoring.
- K. At appropriate intervals, specified in the plan, there would be a re-evaluation of the overall goals of the USRP. This is envisioned as a community process similar to the initial process used to establish goals for the USRP. This process might involve formal revisions of the goals of the USRP and, as appropriate, might involve consideration of formal revisions of the CWP and the state's Water Quality Plan. At a minimum, evaluation of future goals should benchmark against the attainment of the fishable/swimmable goals established by the Clean Water Act.

III. Issues and Concerns

This section addresses concerns, issue areas, and specific questions that have been raised during the review and development of the proposed Urban Stream Standards program. Discussion is provided for the following questions:

1. Will the adoption of the proposed concept for urban stream restoration plans result in lower stream quality?
2. What leverage is available to affect land use change? How can the proposed process influence actions to shift resources to priority efforts?
3. Would the urban stream program put urban populations at a higher risk when involved in water contact recreation?
4. How will downstream uses be protected?
5. Is there a danger that interim goals will encourage inefficient projects?
6. Do we have the scientific knowledge to develop more effective goals and criteria?
7. What are the guidelines and constraints under federal law for changing water quality standards?
8. How does the proposed urban streams program differ from obtaining a variance under existing regulations?
9. What are some possible approaches for regulatory flexibility in water quality standard formats, and in setting schedules for attainment of standards?
10. Under what conditions should the urban streams restoration plan approach be encouraged? When would the approach not be recommended?

1. Will the adoption of the proposed concept for urban stream plans result in lower stream quality?

The most often heard concerns are that the program could lead to a lowering of existing urban water quality or will not result in the same level of restoration that would be achieved under existing requirements.

The first concern can be addressed by pointing out that the proposed urban stream program would be limited in applicability to situations where the goal is to improve urban water quality above the existing level. The typical case would be a situation where uses designated by water quality standards have never been attained. Specifically, the program would not apply to efforts to downgrade existing water quality uses, for instance, in the cases of advancing urbanization. Additionally, state anti-degradation rules would not be affected by the proposal.

The concern that the ultimate result of the proposed program will be lower urban water quality may stem from common experience that setting high goals can promote higher performance. However, improved urban water quality is in fact driven by a large number of forces that will be discussed. Further, regulatory approaches may compete with watershed improvement goals targeted to address root problems of urban streams.

Assurances that the program will be protective of urban water quality are evident by looking at the measures driving pollution abatement under the Clean Water Act, safeguards built into the proposed USRP program, and ways in which the program will have more leverage in the overall protection of stream health.

First consider the multiple approaches for pollution abatement under the Clean Water Act. Under the scenario of urban use standards a basic level of technology-based standards for pollution sources would continue to be a major driving force. A second powerful force is the requirement to abate pollutants to protect existing downstream water quality uses.

The various reviews built into the proposed urban stream program provide a second layer of protection against unjustified lowering of stream goals. USRP's would have to be adopted at a regional level by the designated planning agency and any proposed revisions to water quality standards would have to undergo the full scrutiny of formal rule making by Ohio EPA.

However, the most powerful argument that the proposed program will not result in a lower level of restoration is to look at the positive side of the equation. The fact is that existing regulations are not doing a good job of protecting urbanizing stream from continued deterioration. The following points summarize some of the major advantages of the proposed program:

- To the extent allowable and desirable, existing resources can be shifted to tasks such as stream protection and hydrologic management and it may be possible to save important stream features that, if not saved now, will be permanently lost.
- The strengthening of watershed processes and agreements on short term goals may be able to start or restart stream restoration and protection efforts that were stalled by disagreements about long term goals.
- Greater community involvement in goal setting helps to define value more broadly than the goals of the Clean Water Act. For example, an urban perspective may identify that, for safety purposes, a stream corridor should have less vegetation cover than would be optimal for attainment of aquatic use goals. Or, in the interest of compact urban land uses and protection of green spaces in other regional watersheds, it may be desirable to increase the density of development in existing urban areas even though this results in additional stress and may limit the ultimate recovery of the stream.
- Greater community involvement is likely to result in greater compliance with and support for restrictions and projects that may be necessary to protect streams.

Finally, a concern has been raised that urban stream programs could be subject to abuse by entities which seek to participate under the claim of stream enhancement but, in fact, have the single goal of avoiding expenditures for currently mandated pollution abatement. Regulatory authorities should be vigilant about this potential problem. However, the safeguards discussed should be adequate to prevent such problems. Further, Ohio's Water Quality Management Plan provides that any use designation which does not meet the full goals for attainment under the Clean Water Act is subject to review for revision every three years.

2. What leverage is available to affect land use change? How can the proposed process influence actions to shift resources to priority efforts?

The Clean Water Act contains limited powers to regulate land use for water quality benefits. The state also has limited legislative authority in this respect. A community developed USRP program is the best hope for influencing land uses because the plan itself would be rooted in achieving goals which have been set by, and are of importance to, the community.

A central concept behind the proposed urban stream restoration program is that the process of developing a restoration plan should seriously evaluate the best use of all resources being spent on the stream. For instance, the program should encourage discussions with regulatory agencies regarding the benefits and possibilities of deferring pollution abatement projects in favor of using these capital resources for other program elements.

An innovative approach may be to encourage changes in land use practices by making a broader range of projects fundable under existing programs such as the state's State Revolving Loan Fund (SRF) program. This might be accomplished by locally initiated site-specific criteria related to ecological considerations, which can as an option be achieved by land use changes. For example, where stream hydraulic stability is a problem affecting aquatic life, technical criteria might call for a certain degree of stream stability as measured by a particular index. Logical methods for achieving these criteria may be to control storm water discharges or to create buffer areas along streams. Relating projects to stream improvements through criteria is likely to increase the likelihood that these projects would achieve funding assistance under traditional funding programs.

The process of adoption of a proposed USRP as a part of the area's CWP may also offer an opportunity to require consideration of changes in land use practices. Specifically, as a matter of policy, the designated planning agency may consider requiring that certain best management practices related to land use be considered in the development of any USRP which it considers for adoption. Further, as a regional entity, the designated water quality management agency may be in a unique position to leverage support of the goals of adopted urban stream restoration plans.

Finally, one of the most powerful tools in affecting land use is capital to obtain easements or actual ownership of critical natural features that support the integrity of water resources. Ohio is fortunate to have a powerful new program that makes available the capital strength of the state's SRF fund for protection and restoration efforts. The Water Resource Restoration Sponsor program, put into place this year, is designed to assist protection and restoration projects that directly benefit water quality. It accomplishes this objective by offering reduced

interest rates on traditional SRF loans when a loan recipient agrees to use the financial benefit of the reduced loan rates for the specified restoration/protection efforts. This program can produce substantial capital resources for these efforts. For example the benefit of a zero percent interest rate on a \$10 million dollar loan could be used to fund a restoration or protection effort costing in the range of \$5 million.

3. Would the urban stream program put urban populations at a higher risk when involved in water contact recreation?

This concern is particularly applicable in the specific discussion related to potential new approaches for recreational use criteria. In particular, one idea would be to craft a standard which accepts that traditional criteria for protection of recreational use which cannot be met for some period following a rain event. Acceptance of less stringent criteria in favor of other stream protection efforts could be inferred as tolerating a higher risk for the population that uses urban streams for contact recreation.

Issues raised in the previous paragraph should be openly discussed during the process in which the proposed urban plan is developed. A strong counter argument to the one presented above is that public health and safety is better protected by a more realistic acknowledgment of the safety risks stemming from the hydrologic character of urban watersheds and our limited ability to control high bacteria and CBOD levels during and following rain events. The risk to the public is dependent upon exposure to contaminated water or dangerous hydraulic situations. Accordingly, it would seem that an important element of any plan would be an effective program of education and management of contact recreation.

4. How will downstream uses be protected?

Protection of downstream uses, depending on the particular circumstances, could be a significant issue in the preparation of USRPs. For instance, to what extent does a tailored aquatic use goal do its share in helping to meet downstream aquatic use goals? Would a decreased aquatic use goal for an urban tributary stream like Mill Creek impact attainment of aquatic use goals for the Cuyahoga River? Or, what level of impact would a tailored recreational use standard have on future attainment of bacteria criteria in the Cuyahoga?

In some cases the need to protect downstream uses may limit the ability to create new water quality standards to support the proposed USRP. One option may be to consider expansion of the boundaries of the USRP to include other downstream non-attainment areas. Another approach might be to develop a series of short-term goals that move in the direction of restoring desired beneficial uses.

Another significant problem may be the lack of data and other needed information to determine if a proposed USRP would impact attainment of downstream uses. For instance, watershed studies and facilities plan improvements are not likely to be complete for all areas contributing to a downstream problem. Further, the science or models used to answer the question of what would be required for attainment may not be available. Finally, even if the source impacts were quantified, developing a reasonably cost-effective mix of solutions to attain water quality standards may still require a very large effort.

In short, it may not always be possible to fully answer all concerns about the potential impact of standards on downstream uses. Where these questions cannot be answered, the best approach may be to acknowledge the problem as an outstanding issue and a reason for future re-consideration of any site-specific urban standard. However, in as much as site-specific urban standards will be driving positive improvements in urban streams, those improvement processes will be working towards correction of current downstream compliance issues.

5. Is there a danger that interim goals will encourage inefficient projects?

It is possible to envision scenarios in which interim goals drive the construction of facilities that are effective in achieving incremental goals but are not adequate to achieve final goals. For example, a storage facility could be constructed to capture all flows up to a given design storm event. Subsequently, it might be determined that a larger facility was needed to meet ultimate goals.

However, it is typical that engineering decisions for capital-intensive facilities often take into account factors of uncertainty in sizing facilities. In such cases, facilities are often sized to take advantage of price break points. Additionally, consideration of the potential for future expansions can be factored into the design decision process. Additionally, it is important to understand that there is an impact of over-sizing a facility. The additional cost of an oversized facility creates a negative effect on resources available to do other projects that could be more cost effective in protection of the health of the stream.

6. Do we have the scientific knowledge to develop more effective goals and criteria?

Ideally, goal statements (i.e., Use Designations) should be clear and meaningful in defining a future desirable state. Additionally, they should be achievable and constructed to allow measurement of progress towards the goal. Water quality criteria should be scientifically defensible and enforceable while being a good measure of goal attainment.

One fundamental problem in crafting water quality measures is the natural variability in any ecosystem and the lack of knowledge about effective techniques for ecosystem restoration. Ecosystems are dynamic and single sites are always strongly influenced by stochastic processes¹. Further, restoration is not a deterministic process. Multiple outcomes are possible and any potential outcome is a function of probability resulting from interacting with initial conditions and restorative manipulations². Thus, at least in the near-term, restoration efforts hold little promise of resembling native ecosystems.³

¹Christensen, N.L., Bartuska, A.M., Brown, J.H., Carpenter, S., A'Antonio, C., Francis, R., Franklin, J.F., MacMahon, J.A., Noss, R.F., Parsons, D.J., Peterson, C.H., Turner, M.G., and Woodmansee, R.G. 1996. The report of the Ecological Society of America committee on the scientific basis for ecosystem management. *Ecological Applications* 6:665-691.

²U.S. EPA, 1997. Risk Management Research Plan for Ecosystem Restoration in Watersheds. USEPA office of National Risk Management Research Laboratory EPA/600/R-97/078.

³Kentula, M.E. 1994. Wetland ecosystems. Pages 21-23 in Symposium on ecological restoration. U.S. EPA

Obviously, being able to achieve the ideal is far from a reality at this time. However, intuitively, the flexibility to develop site-specific criteria should result in goals that make more sense both in terms of community values and in terms of technical measures of stream restoration. Some ideas for alternative criteria are as follows:

- Adapt existing criteria by making changes in the temporal or spatial application of criteria limits. For instance, sampling might be more or less frequent, samples might be composited over a larger spatial area, or the standard might be based on a new statistical parameter that describes a data set.
- Determine compliance based upon the output of models that estimate improvements as restoration activity progress. The initial attributes of the models and procedures for updating the model could be agreed upon at the time of adoption of water quality standards.
- Create unique narrative standards to describe expected characteristics of the watershed as restoration moves forward.
- Condition the applicability of traditional standards with unique spatial and temporal qualifiers. Minimum default standards may also be appropriate.
- Use a showing of substantial progress towards some standard as the criterion. In effect, this could be a measure of the effectiveness of the local/regional planning and implementation processes. Compliance could be determined based upon a locally developed progress report.
- Use indices or other holistic measures of ecosystem or stream integrity in place of numeric or narrative criteria. Holistic criteria have particular appeal because they focus on direct measurement of ecosystem health -- the ultimate objective of the restoration effort. The focus on the ultimate objective maximizes a community's options to employ the most effective techniques to achieve desired ends. For example, Ohio EPA could develop a new biological metric which is based upon what is achievable in urban areas. As a second example, criteria could call for a particular state of stream morphologic stability. Still, a third approach might be to adopt a sentinel species.

Admittedly, the science to support total ecosystem restoration is still weak. However, it is proposed that in the interim, prototype urban stream plans could go forward with the best available science in setting goals that are meaningful to both the community and regulatory officials. Prototype plans could contain an evaluation component to generate scientific information to assist in answering research questions related to measurement of ecosystem improvements. Collected information will also be helpful in addressing the related problem of high quality streams being degraded by advancing urbanization. In this area there is currently

a lack of quantitative data to help planners understand the impacts of land use decisions or to understand the effectiveness of mitigation techniques.

7. What are the guidelines and constraints under federal law for changing water quality standards?

The Clean Water Act set goals for the nation's waters in Section 101 (a). In particular, Section 101 states the objectives of the Act are to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Section 101 (a) (1) calls for the elimination of pollutants and Section 101 (a) (2) states that it is the national goal that, wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July, 1983.

By regulation 40 CFR Part 131, states are required to establish water quality standards that are composed of use designations for various use categories and water quality criteria that are consistent with the goals of the Act. In the early 1970's, use designations consistent with full attainment of the goals of the Act were by default applied to many of Ohio's streams. Provisions of the Act 131.10 set out processes and limitations for removing (or revising) uses. Uses that are attainable may not be removed. By definition 131.10 (d) at a minimum, uses are deemed attainable if they can be achieved by the imposition of effluent limits required under Sections 310 (b) and 306 of the Act and cost-effective and reasonable best management practices for nonpoint source control. Sections 310 (b) and 306 refer to the requirements to meet technology based effluent limitations and National Standards of Performance.

Section 131.10 (g) provides that states may remove a designated use which is not an existing use, or establish sub-categories of a use if the state can demonstrate that attaining the designated use is not feasible because of certain enumerated factors related to physical conditions. These factors include: intermittent or low flow conditions or water levels; human caused conditions that can not be remedied; dams and other types of hydrologic modifications that can not be remedied; physical conditions such as the lack of a proper habitat features. A showing of substantial and widespread economic and social impacts resulting from efforts to attain the uses is also a reason for changing use designations. As a part of the process to remove or modify a use, states must conduct a Use Attainability Analysis. As established pursuant to Section 131.3 (g), a Use Attainability Analysis is a structured scientific assessment of the factors affecting the attainment of the use.

Earlier, this chapter discussed the link between urbanization and the non-attainability of various water quality criteria. Many urban modifications of land use features are responsible for human caused conditions that cannot feasibly be reversed. One example is the existence of a network of storm sewer systems that has culverted most first order streams. Frequently, urban streams contain a wide variety of dams and other structures that have a dominant affect on the health of the urban stream. For example, culverts frequently interfere with aquatic movement. The high quantity of impervious surfaces, which in effect defines most urban areas, have a dramatic effect on both high and low flow hydrology, which in turn triggers other biotic and abiotic changes. Past poor planning has often allowed urban structures to be built at

the edge of streams, and stream wetland features to be filled for development. These development acts have in the process destroyed habitat that is critical to stream health.

Based upon the foregoing logic, changes under the regulatory provisions of Section 131.10 (g) should be available based upon the physical consequences of urbanization, as opposed to a social/economic test of substantial and widespread economic and social impact resulting from attempts to attain existing uses. At the same time it is obvious that there will remain some burden to show that these urban features are a prime contributor to non- attainment.

By regulation, states are responsible for conducting the Use Attainability Analysis. It would be ideal to engage the state and its resources in conducting the Use Attainability Analysis as a part of the community process of understanding impacts and setting new goals. However, in reality Ohio's resource constraints may not allow the agency to take a lead role in the community effort. And in fact, one of the advantages of the proposed program is that it provides a process for communities to take the leadership role in initiating the goals setting process independent of state priorities. Where communities are required to initiate the processes, the final outcome will be contingent on the Use Attainability Analysis that will be conducted by the state prior to, or as a part of, a rule making process to consider new proposed water quality standards. In this case the technical work done by community should be an aid to the state in its effort to conduct a Use Attainability Analysis.

8. How does the proposed urban streams program differ from obtaining a variance under existing regulations?

The proposed program has a number of similarities with an approach that would seek a variance to the water quality standards. In fact, under Ohio regulations, the valid reasons for obtaining a permanent revision to water quality standards where designated uses have not been attained are the same as those under which a variance may be sought. However, the variance carries the implicit agreement that the ultimate goal is the standard to which the variance is sought. In contrast, the proposed urban stream program envisions a more substantial public involvement process in setting alternative goals that are intended to be translated into water quality standards.

Under Ohio rules, several reasons are given as valid for seeking a change or lowering of designated uses when the existing use cannot be met. These include hydrologic modifications, human-caused conditions that cannot be remedied and physical conditions related to the natural features of the water body. A fundamental premise behind the proposed urban stream program is that certain patterns or densities of urbanization will qualify under a combination of the available options.

Another substantial difference is found in the intent of the Urban Stream Restoration program to affect fundamental change in the health of a stream by attacking the full range of variables that affect stream health. In this process, the program may attempt to shift resources from traditional pollution abatement efforts to alternative approaches such as stream restoration and stream protection. Finally, as discussed above, the proposed program may have equal applicability for a community's desire to develop a program that provides for attainment of goals above those established by current water quality standards.

9. What are some possible approaches to achieve regulatory flexibility in water quality standard formats, and in setting schedules for attainment of standards?

The proposed model of community involvement should in fact be an aid to the creation of goals or use designations that are more meaningful to the community and more protective of the total resource. The key to making goals meaningful to the community is substantially involving it in the creation of the goals. Given this somewhat non-conventional approach, we should expect that tailored use designations would take on a variety of non-conventional forms.

One objective of the proposed urban stream program is to provide flexibility to communities to consider a wide range of options in the creation of USRP's. The inflexible, traditional enforcement process works against this objective. For instance, creating a new bacteria standard that would be more precise could result in the immediate identification of violations of the new water quality standards. This determination could trigger enforcement actions against the very communities who are working to develop new ways to protect public health. Additionally, once a compliance program is set into place under a regulatory framework, the focus is likely to be on reporting and completion with little regard for adjustment of the program to meet new information or understanding of the environmental needs.

A second problem is that an effective restoration strategy would seem to call for a broad spectrum of incremental improvement initiatives in areas that make up an ecosystem (i.e., biotic, abiotic, historical, & societal factors). Thus, restoration activity may be happening on many fronts. Appropriate tracking mechanisms and the time scale to see results may vary widely.

An approach used by Ohio EPA in developing a site-specific standard for the Cuyahoga River Ship Channel provides one possible model for working around these dilemma⁴. The ship channel standard specifically identifies that a phased TMDL approach will be used to attain compliance. The standard also specifically recognizes the necessity to look for innovative ways to achieve compliance with the standard, including elements not specifically related to pollution abatement. Action towards compliance can include studies and prototype experiments. Certain critical NPDES limits are actually set by the Water Quality Standard.

A second tool in setting standards may be to establish a progressive set of achievable criteria. For instance it may be possible to identify changes in runoff hydrology resulting from a proposed series of storm water management projects, or changes in habitat scoring indices that are expected to result from restoration activities. Additionally, it seems that criteria could call out expectations or give credit for putting natural stream features into permanent protection. Obviously, crediting these kinds of effort would be both extremely important and at the same time defy traditional thinking about compliance requirements related to attaining water quality standards.

⁴OAC 3745-1-26 Cuyahoga River

10. Under what conditions should the Urban Streams Restoration Plan approach be encouraged? When would the approach not be recommended?

A principal objective of the proposed urban planning program is to obtain a community perspective in setting non-traditional goals for urban watersheds. Accordingly, an urban stream program may offer a preferred approach whenever community participation is highly valued and innovation in standard setting is a desired outcome. While the primary focus of discussion in this chapter has been on creating new approaches where designated uses have not been obtained, the process should be equally applicable to the situation where a community desires to set a standard which is more protective than what is currently in place.

One of the potential disadvantages of the process is the time and effort to undertake the process that has been outlined. Further, it may not be advisable to undertake an intensive public goal-setting process aimed at setting innovative standards without an adequate database to define stream problems or without a fair understanding of the difficulties of obtaining compliance with minimum requirements.

IV. Implementation of the Proposed Urban Stream Program

The area's WQMP recognizes and encourages development of urban stream restoration plans that would include tailored urban standards. Adoption of an urban stream restoration plan would be considered based upon the merits of an individual proposal. Additionally, incorporation of Strategies 8-1 and 8-2 in the area's Clean Water Plan, and subsequent certification by the State, will create additional impetus for Ohio EPA to initiate water quality standard rule-making on urban stream issues. Urban stream restoration plans crafted under this CWP would identify specific stream objectives for enhancement. Typically, these goals would be approached in an incremental fashion and re-evaluated at the end of a specified planning period. A second objective is to strengthen the capacity of the local community to develop and implement measures for stream improvements and to help communities realize the full benefit of urban streams as a defining feature of their community.

Analysis of the problems associated with the protection and restoration of urban streams suggest that new models are needed to solve a wide spread problem. A new approach, which shifts some responsibility for decision making to the community level, has been proposed. It is recommended that the policies and recommendations that follow be pursued as an alternate approach for achieving urban stream quality.

Strategy 7-1: The NEFCO General Policy Board endorses the urban stream restoration plan concept presented in this chapter as an alternative means of improving the water quality for urban streams in Northeast Ohio which are not currently attaining water quality standards.

Strategy 7-2: The NEFCO General Policy Board authorizes under its ongoing planning process (See Chapter 10) an urban stream protection planning committee to encourage and guide the development of urban stream restoration plans, including the development of urban standards which would support these plans. The committee is charged with the following:

- \$ Develop suggested processes for review and adoption of Urban Stream Protection Plans by the designated planning agency.**
- \$ Help watershed areas identify the basic data needed to prepare USRPs. Facilitate discussions among watershed communities that wish to consider the development of urban watershed plans.**
- \$ Develop recommended guidelines for minimum practices in the management of urban streams.**
- \$ Conduct discussions with Ohio EPA to develop the appropriate process, if needed, for further state rulemaking to recognize specific urban standards as part of the state's overall water quality management plan.**
- \$ Provide reviews and comments upon specific proposals for urban watershed plans/and water quality measures which are proposed for adoption.**
- \$ Identify ways that areawide regional planning processes can support the goals identified by a particular urban stream plan.**
- \$ Collect data relative to the cost effectiveness of restoration and protection practices used with an urban stream plan.**
- \$ Evaluate the effectiveness of the USRP experience in furthering the protection of urban streams.**
- \$ Make recommendations for revisions to the 208 plan concerning the use of USRPs.**

Strategy 7-3: The NEFCO General Policy Board recognizes the need for, and acknowledges intent to encourage research on the effectiveness of protection and restoration techniques in urban settings.

Recommendation 7-1: Ohio EPA is requested to evaluate the urban stream restoration plan program presented in this chapter of the CWP.

Recommendation 7-2: Ohio EPA is encouraged to participate in research/study efforts to provide practical information relative to cost and effectiveness of protection and mitigation techniques towards improving biological metrics for urban streams and in the evaluation of alternative biological criteria or other types of standards to assist communities in setting goals for urban streams.

Recommendation 7-3: Ohio EPA is encouraged to be involved in the development of USRPs in an advisory and consulting role. Further, Ohio EPA is encouraged to participate in the local planning process to review plans and to evaluate rule making

actions in a timeframe which facilitates public involvement and protects the momentum of community planning processes described in this chapter.

Chapter 8

Watershed Planning Approaches in Northeast Ohio

This chapter discusses current voluntary approaches to watershed planning in Northeast Ohio and makes recommendations for enhancing the role of voluntary watershed planning efforts within the region. It includes a profile of Northeast Ohio’s major watershed planning organizations. In addition, subwatershed groups (i.e. Little Cuyahoga River, Yellow Creek, Tinkers Creek, Pond Brook, Big Creek, West Creek, Doan Brook etc.) have or are being organized.

Introduction

Over the past decade a number of organized watershed planning groups have emerged in the Cuyahoga River basin in the NEFCO CWP Lake Erie basin planning area. These include the Cuyahoga River Remedial Action Plan (RAP) Coordinating Committee, established in 1988;¹ the Upper Cuyahoga River Task Force organized in the early 1990s, and the Middle Cuyahoga River Stakeholders committee, organized in 1999. These groups have been organized under different auspices, for different purposes, and approach watershed planning and management issues differently. Taken together the emergence of these groups constitutes a significant and valuable regional planning resource for advancing coordinated approaches to watershed issues by public management agencies and other stakeholder groups, and for building public awareness and responsibility for water quality.

Watersheds and subwatersheds are becoming recognized as a new form of community or “neighborhood” around which citizens and public agencies can organize to address environmental problems.

This Clean Water Plan recognizes the importance of Northeast Ohio’s watershed groups, and recommends actions to sustain and enhance their varying roles.

Recommendation 8-1: Local, county and state water quality management agencies are encouraged to participate in and support the major watershed and subwatersheds planning groups currently existing in the area. These major watershed groups are the Cuyahoga River Remedial Action Plan Coordinating Committee, the Middle Cuyahoga River Stakeholders, the Upper Cuyahoga River Task

¹The Cuyahoga River RAP Coordinating Committee was established by Ohio EPA with community input to respond to provisions of the Great Lakes Water Quality Agreement which called for the development of a Remedial Action Plan to restore 14 beneficial uses in each of the Areas of Concern in the Great Lakes basin. The Great Lakes Water Quality Agreement also called for the establishment of Lakewide Management Plans (LaMPs) for each of the Great Lakes for the purpose restoring beneficial uses in each lake. A Lake Erie LaMP was formed in 1993.

Force, Black River Remedial Action Plan, Chagrin River Watershed Partners, and Grand River Partners. Subwatershed groups are listed above.

Recommendation 8-2: While no specific organizational model is endorsed, the following principles are encouraged for organizing watershed planning groups:

- a) watershed planning groups should foster broad stakeholder involvement including local, county, regional, state and federal jurisdictions, and businesses and community organizations with a stake in the river; and utilize stakeholders in goal-setting for the watershed.
- b) watershed planning groups should pursue a community based approach that relies on the leadership and technical support of local public management agencies;
- c) watershed planning groups should emphasize voluntary coordination of management strategies to complement the regulatory programs of local and state agencies;
- d) watershed planning groups should emphasize public education, awareness and involvement programs to more fully engage the public in an understanding of watershed issues; and
- e) watershed planning groups should facilitate voluntary technical collaboration among local and state agencies in efforts to address watershed issues and support implementation of water quality measures by local management agencies.

Recommendation 8-3: Ohio EPA and ODNR are encouraged to actively consult with watershed groups on the design, funding and implementation of watershed and nonpoint source projects proposed for a watershed.

Recommendation 8-4: The State of Ohio should provide base funding to support watershed planning groups that satisfy the criteria of public accountability, local government/agency involvement, technical competence, sustainability, and adequate public involvement.

Discussion

Water quality problems transcend the boundaries of political jurisdictions. Management responsibilities of water quality agencies are often functionally compartmentalized with local governments focusing on sewers and point source discharge issues, health departments focusing on on-site systems and associated water quality and public health problems, municipalities and counties are concerned with storm water issues and other nonpoint source problems, and so on.

A watershed approach is critical to an adequate assessment of water quality problems leading to greater awareness of the priority problems to be addressed. The implementation of management solutions through watershed cooperation holds the promise of much more effective, efficient solutions as well. It can be a catalyst for better coordination and innovative strategies by existing management agencies.

Nonpoint source problems can only be understood and effectively addressed on a watershed basis. A watershed focus is indispensable to identifying the nonpoint factors impacting streams. Nonpoint

solutions must also take into consideration actions at the landowner and household level. A watershed planning group provides a focal point for mobilizing action at this level. It can facilitate the substantial cooperation needed to implement solutions.

Watershed approaches are not mandated in the State of Ohio and would seem to be complicated by the State Constitution's allocation of primary land management responsibility to local units of government. In the near term new legislation to establish watershed management authorities is unlikely. However, as the Northeast Ohio experience attests, much can be accomplished with voluntary watershed and subwatershed associations, and these should be encouraged.

APPENDIX 8-1 EXAMPLES OF MAJOR WATERSHED GROUPS IN NORTHEAST OHIO

The following is a sample of major watershed groups in Northeast Ohio. Please contact NEFCO for additional details and new groups.

A. Cuyahoga River Remedial Action Plan (RAP) Coordinating Committee

Watershed area: Cuyahoga River below the Ohio Edison Dam in Akron at River Mile 45 and the near shore area of Lake Erie between Edgewater Beach and Euclid Beach.

Legal authority or basis: Community planning committee appointed by the Ohio EPA Director.

Charge or mission: To plan for and promote the restoration of beneficial uses in the Cuyahoga River Area of Concern as spelled out in the Great Lakes Water Quality Agreement.

Constituent members: Thirty-seven stakeholder organizations including local public agencies, river dependent or impacting businesses, community and environmental organizations, and state and federal agencies have been appointed by the Ohio EPA to form a Cuyahoga River RAP Coordinating Committee (CCC).

Resources-staff and funding base: a non-profit organization, the Cuyahoga River Community Planning Organization (CRCPO), which is funded with foundation grants, public grants, and member contributions provides primary staff and is augmented by assigned staff from Ohio EPA and NOACA, and volunteered contributed efforts of Coordinating Committee member organizations.

Organization or operating procedures: the Coordinating Committee has operated since 1988. It meets five to six times annually. Its chair is appointed directly by the Ohio EPA Director to serve as an impartial consensus builder. Its work plan, most recently updated in 2003 spells out work goals and an organizational structure to achieve those goals. A number of subcommittees, technical advisory groups and work groups have been established, including a Steering Committee which also meets five to six times annually whose members also serve as the Board of Directors of the CRCPO.

Watershed Planning Functions:

Planning or planning coordination	Yes	
Regulatory or implementation responsibility	No	
Technical assistance	Yes	
Research or implementation demonstrations	Yes	
Public involvement	Yes	
Government advisory role		Yes
Monitoring	No	

Major accomplishments include the completion of a Stage One Report Addressing Impairments to Beneficial Uses and Sources and Causes in the Cuyahoga River Area of Concern. The Cuyahoga River RAP has completed a number of implementation activities, research studies, community awareness and education programs, and has fostered a number of partnerships with stakeholder organizations to promote river restoration. These are detailed in “Program Strategies 1999-2003 of the Cuyahoga River RAP Coordinating Committee” (March 25, 1999), Stage I update Spring 2002.

Key contacts: Secretary, Cuyahoga River RAP Coordinating Committee
Northeast Ohio Areawide Coordinating Agency
1299 Superior Avenue
Cleveland, Ohio 44114

CRCPO Executive Director
1299 Superior Avenue
Cleveland, Ohio 44114

Cuyahoga River RAP Coordinator
Ohio EPA Northeast District Office
Twinsburg, Ohio 44087-1969

B. Upper Cuyahoga River Watershed Task Force

Watershed Area: 131,200 acres

Legal authority or basis: None - Participation is Voluntary

Charge or mission: The purpose of the group is to facilitate the exchange of information regarding ways and means to ameliorate water quality problems in the Upper Cuyahoga.

Constituent members: State and local agencies, individuals, soil and water conservation districts, conservation groups, and local elected officials.

Resources-staff and funding base: None

Organization or operating procedures: ODNR and City of Akron coordinate quarterly meetings.

Watershed Planning Functions:

Planning or planning coordination	Yes
Regulatory or implementation responsibility	No
Technical assistance	Yes
Research or implementation demonstrations	Yes
Public involvement	Yes
Advisory	Yes
Monitoring	No

Major accomplishments: Facilitated meetings and symposia regarding water quality problems. Also facilitated roadside drainage best management practices demonstrative projects by constituent members.

Key contact: Chairperson
City of Akron
Public Utilities Bureau
Water Supply Division
1570 Ravenna Road
Kent, OH 44240

Secretary
Portage County Park District
449 S. Meridian St.
Ravenna, OH 44266

C. Middle Cuyahoga River Stakeholders

Watershed Area: 3,169 acres

Legal authority or basis: None - Participation is Voluntary

Charge or mission: The purpose of the group is to facilitate the exchange of information regarding ways and means to ameliorate water quality problems in the Middle Cuyahoga.

Constituent members: State and local agencies, individuals, soil and water conservation districts, conservation groups, and local elected officials.

Resources-staff and funding base: None

Organization or operating procedures: NEFCO coordinates meetings as needed but generally twice yearly.

Watershed Planning Functions:

Planning or planning coordination	Yes
Regulatory or implementation responsibility	No
Technical assistance	Yes
Research or implementation demonstrations	No
Public involvement	Yes
Advisory	Yes
Monitoring	No

Major accomplishments: Facilitated TMDL discussion on the Middle Cuyahoga.

Key contact: Executive Director
Northeast Ohio Four County Regional Planning
and Development Organization
180 East South Street
Akron, OH 44311

Chapter 9

Management Agency and Community Involvement

This chapter discusses the involvement of local jurisdictions and the general public in development of this plan. It addresses the role of the joint task force established by NOACA and NEFCO to participate in and oversee plan development, and the formation of work groups formed to address various aspects of the plan. It summarizes the two rounds of public meetings held to discuss with the general public the plan's development. Finally it summarizes the public review and comment period held during October/November 2002 to review the draft Clean Water Plan. Involvement of local jurisdictions and the general public have been crucial elements in the plan development process.

Northeast Ohio 208 Plan Update Task Force

NOACA and NEFCO formed the Northeast Ohio 208 Plan Update Task Force in September 1996 to assist in plan development. The Task Force included local management agency representatives from the seven counties involved in the plan update. The Task Force was co-chaired by Erwin Odeal, Executive Director of the Northeast Ohio Regional Sewer District and a member of the NOACA Board and David Crandell, Manager of the City of Akron's Public Utilities Bureau.

Various kinds of local governments and agencies were represented on the Task Force, including mayors, county commissioners, sewer agencies, county health departments, planning agencies, park districts, and soil and water conservation agencies. The Task Force also included representatives from state and federal environmental agencies and local watershed groups. The charge given to the Task Force was to:

- a) advise NOACA and NEFCO staff on the plan update development;
- b) review and comment on all reports prepared during the planning process;
- c) serve as co-convenor of public meetings held during the planning process; and
- d) recommend actions to be considered by the NOACA and NEFCO Boards on the draft Plan.

The Task Force met every three months beginning in November 1996 and throughout 1997 and 1998, and more frequently in 1999. During this time, members discussed and debated plan development issues, participated on several work groups formed to formulate strategies for incorporation in the plan, reviewed and commented on draft documents and reports, and assisted in public meetings held. In December 1998, the Task Force approved an outline for the plan update document and subsequently began the review of draft chapters. Table 9-1 lists the Task Force members. Documentation of Task Force activities is available from NEFCO.

Work Groups

The Task Force established three work groups to assist in plan development. It formed a home sewage management strategies work group consisting of county health department officials from the seven counties involved in the plan update, Ohio EPA and the Ohio Department of Health. This group met a number of times over an eighteen month period to formulate the recommendations and strategies that form the core of Chapter 4. Documentation of this work group's activities is available from NEFCO.

Also formed was a critical areas identification work group which was charged with identifying water resources in the region warranting enhanced protection under the 208 Plan. This work group also met several times early in the planning process, and produced a series of reports and maps which became the foundation for the resources identified for protection in Chapter 6. Documentation of this work group's activities is available from NEFCO.

Finally, the Task Force formed a protective mechanisms work group to assist in the identification of management tools and strategies to enhance the protection of regionally important water resources in the region. This work group met a number of times over a twelve month period and produced a report which formed the basis for recommendations in Chapters 5 and 6. Documentation of this work group's activities is available from NEFCO.

Public Meetings During Plan Development Phase

NOACA and NEFCO held two rounds of public meetings during the development of this document. In the summer of 1997 seven meetings were held, one in each of the seven counties involved in the plan update to introduce the project to the community, discuss goals of the planning process, present information on existing water quality conditions, and discuss the public's comments and concerns about the planning process.

A second round of public meetings was held in the summer of 1999. Five meetings were held in watersheds throughout the planning area. The purpose of these meetings was to report progress on the plan's development before plan alternatives were completed. Presentations were given in four areas of the plan's development: wastewater planning, home sewage management, nonpoint source control, and the protection of regionally important water resources. The public was given the opportunity to comment on issues presented. The results of both rounds of public meetings were shared with the Task Force and have formed the development of this plan. Documentation of this activity is available from NEFCO. In addition, during the course of plan development, NOACA and NEFCO staff attended a number of meetings with groups in the area to discuss the Plan.

Public Review of Draft Plan

NEFCO convened public meetings on October 30, November 6, and November 20 to review the Draft Clean Water Plan (CWP). The purpose of these meetings was to obtain opinion from the public about the elements of the CWP. Distribution of the plan was accomplished prior to and during the 60 day public review period. The draft plan was posted on the Summit County information web site and printed copies were placed on reserve in several local libraries. The public meetings, scheduled as conveniently as possible to provide opportunity for citizens to attend, were held at 2:00 p.m. and 6:30 p.m. at locations in Summit County and Portage County. Opinions and

comments from the public meetings were compiled and reviewed by the NEFCO Environmental Resources Technical Advisory Committee (ERTAC) 208 CWP Subcommittee and were used to make revisions to the Draft CWP. Appendix 9-1 contains a summary of the response to major comments.

Table 9-1
Northeast Ohio 208 Water Quality Management Plan
Development Task Force Roster
(as of November, 1999)

Voting Members:

Cuyahoga County: Hunter Morrison, City of Cleveland Planning Director
Paul Alsenas, Cuyahoga County Planning Director
Tim Horgan, Cuyahoga County Board of Health
Erwin Odeal, NEORSO Executive Director
Hon. Jerry Hruby, Cuyahoga County Mayor

Geauga County: Neil Hofstetter, Geauga County Commissioner
Dave Dietrich, Geauga County Planning Director
Bob Weisdack, Geauga County Board of Health

Lake County: Hon. Mildred Teuscher, Lake County Commissioner
Darrell Webster, Lake County Planning Director
Frank Kellogg, Lake County General Health District
Hon. Daniel DiLiberto, Lake County Mayor

Lorain County: Hon. Betty Blair, Lorain County Commissioner
James Boddy, Lorain County General Health District
Hon. Joseph Koziura, Lorain County Mayor
Hon. Vincent Urbin, Lorain County Mayor

Medina County: Hon. Steve Hambley, Medina County Commissioner
Bruce Freeman, Medina County Planning Director
Ken Hotz, Medina County Sanitary Engineer

Portage County: Hon. Christopher Smeiles, Portage County Commissioner
Harold Huff, Portage County Water Resources Department
Lynne Erickson, Portage County Regional Planning Director
DuWayne Porter, Portage County Health Department

Summit County: Warren Woolford, City of Akron Planning Director
David Crandell, City of Akron Public Utilities Manager
Robert Corlett, Department of Development, Summit County
Boyd Marsh, Health Commissioner, Summit County
Ed Shondel, Environmental Services, Summit County
Susan Truby, City of Cuyahoga Falls

Non-Voting Ex-Officio Members:

Cuyahoga River Remedial Action Plan	Ed Rybka, RAP Chair
Black River Remedial Action Plan	Ken Pearce, RAP Chair
Chagrin River Watershed Partners	Tom Denbow, Director
Grand River Partners	Charles Ashcroft
Cleveland Metro Parks	Steve Coles
Ohio Environmental Protection Agency	Bill Skowronski, Keith Riley
Ohio Department of Natural Resources	Steve Roloson
United States Environmental Protection Agency	Rich Winklehofer, Harlin Hirt
USDA/Natural Resources Conservation Service	Jim Storer
Cuyahoga Valley National Park	John Debo

APPENDIX 9-1

Response to Major Comments Summary

Appendix 9-1 Response to Major Comments Summary

The following responds to major comments received on the draft NEFCO Clean Water Plan (CWP).

1. Comment:

What guide should be used to determine sewer feasibility?

Response:

The reader is referred to the local sewer agency for guidance. Sewer feasibility is a factor of environmental and economic conditions. The CWP can provide insight into existing sewer areas and areas where sewers are planned.

2. Comment:

An article in the February 12, 2002 Akron Beacon Journal said that the Draft Plan document has been approved. Is that accurate?

Response:

The article was not accurate. The draft plan was not approved. Mini-updates of portions of some facilities planning areas (FPA) have been accomplished. To facilitate the permit processing for individual dischargers, portions of the CWP were updated and endorsed by NEFCO. The updates used guidance articulated in the CWP. These mini-updates are what the writer of the article was most likely referring to, not the Plan approval.

3. Comment:

Will the Ohio River Basin CWP be a separate report?

Response:

The effort to update the Ohio River Basin CWP is a separate phase of the Plan update. The products of this effort will ultimately be combined with the Lake Erie CWP into a comprehensive document. The Lake Erie CWP will be used as a template for the Ohio River Basin. This will enhance the cohesiveness of the CWP by maintaining consistency with the chapters. NEFCO will complete components of the Ohio River Basin CWP as funding permits.

4. Comment:

Should a sample description of the prescriptions for the JEDD areas be included in the Executive Summary?

Response:

NEFCO acknowledges the comment and will add text to the Executive Summary.

5. Comment:

Discussion is lacking in the Executive Summary about semi-public sewage disposal systems.

Response:

A brief summary of wastewater management from semipublic wastewater treatment was added to the Executive Summary.

6. Comment:

Should a summary of Storm Water Phase II regulations be included in the Executive Summary?

Response:

NEFCO acknowledges the comment and added a brief summary of the Storm Water Phase II regulations.

7. Comment:

Who were the Home Sewage System Recommendations written for and who will implement them?

Response:

The home sewage recommendations were written by a Task Force of local health departments in the NOACA and NEFCO regions. Their recommendations were written for the county and other local health departments, and will be implemented by them as funding permits.

8. Comment:

There is a glaring omission of a current water quality data baseline in the CWP.

Response:

NEFCO felt it was redundant to duplicate what is available in numerous Ohio EPA water quality documents. The 305(b) and TMDL reports are referenced in the CWP and are available from the Ohio EPA District office.

9. Comment:

The stream rankings illustrated on Figure 2-1 should be revised to reflect the current data.

Response:

NEFCO acknowledges that the date is not the most current available information. Text was added to clarify that the figure is using a data analysis process that is no longer applied to streams. It is only good for comparing the relative health of streams in 1996. For more current data the reader is referred to Ohio EPA Water Quality documents. This figure could be updated in a future CWP update.

10. Comment:

Why are there differences on the employment totals on Tables 2-4 and 2-2?

Response:

The differences between the two sets of figures are due to the definitions of the categories. Total Labor Force represents the number of people that are working or seeking work. Employment by Industry are those working in all industries in a specific region or county.

11. Comment:

Has the Ohio Governor’s January 12, 1998 guidance for wastewater pollution loading been applied to the NEFCO region 201s?

Response:

The 1981 CWP listed designated management agencies (DMAs) for facilities planning. The DMAs included municipalities, counties, and sanitary sewer districts authorized under Ohio law to perform these functions. The January 12, 1998 Governor’s letter has been discussed by the ERTAC 208 Review committee and there was no consensus to include it in the CWP. The Lead agencies have been provided the opportunity to revise their wastewater prescriptions for each facilities planning area. NEFCO will make the revisions to the FPAs according to instructions from the lead agencies.

12. Comment:

NEFCO should encourage resolution of differences in the proposed prescriptions for the unincorporated areas in the Kent Facilities Plan.

Response:

NEFCO has encouraged the City of Kent and Portage County to resolve their differences for the unincorporated areas in the Kent Facilities Plan. The CWP review meetings have also served to identify issues and solutions to FPA differences for communities in the Lake Erie basin.

13. Comment:

Is Suffield Township (or part of it) in the Akron FPA?

Response:

The Clean Water Plan shows that a portion of Suffield Township is in the Akron FPA.

14. Comment:

Wording for prescriptions that address failing home sewage treatment systems (HSTSs) (formerly referred to as home sewage disposal systems (HSDS)) should be clarified. The following is suggested.

“Failing HSTSs serving single-family homes shall be abandoned and the home connected to sanitary sewer service in accordance with OAC 3701-29-02(M) unless sewer service is not accessible, in which case the HSTS must be repaired to meet the standards found within OAC 3701-29.”

Response:

The suggested text does promote consistency. Discussion at the review meetings seems to agree that the existing text does encourage replacement of failing HSTSs with a working system if sewer is not available. NEFCO will encourage communities to use the suggested text if they desire to revise their wastewater prescriptions.

15. Comment:

The definition of a Primary DMA should be expanded to include ownership of all or part of the sewers within their jurisdiction.

Response:

The definition of a Primary DMA, established early on in the CWP update study, was the county or municipality that owns or operates the central wastewater treatment plant. The Secondary DMA owns and maintains the sewers. Very often the Primary and Secondary DMA are the same. The lead agencies felt it was necessary to make this distinction.

16. Comment:

The color pink should be added to the FPA maps to represent areas that will remain unsewered.

Response:

Discussion by the review committee indicated that the additional color was not needed. Early drafts of the FPA maps had used the color pink for the unsewered areas. As the maps evolved the use of the color became obsolete as the areas became represented by another color.

17. Comment:

Cooperation is recommended between the Portage SWCD, RPC, Park District, Land Trust, and local jurisdictions to implement the recommendations of Chapter 5 (Management of Nonpoint Source Pollution and Storm Water Runoff).

Response:

NEFCO acknowledges and agrees that cooperation is the most efficient manner to address nonpoint source pollution and storm water. It is mutually beneficial for all stakeholders in the Cuyahoga River basin to cooperate in the effort to achieve water quality standards.

18. Comment:

Combined sewer overflows and sanitary sewer overflows are considered to be nonpoint source pollution and should be discussed in Chapter 5.

Response:

The classification of Sanitary Sewer Overflows and Combined Sewer Overflows as point sources is documented in 40CFR122, section 122.26. Chapter 5 is primarily focused on non-point source pollution. Older references (e.g. 1996 Ohio Water Resources Inventory) by Ohio EPA do lump the CSOs and SSOs as nonpoint source pollution impairment sources. This report considers them as point sources, in agreement with the current regulations.

19. Comment:

According to the Ohio EPA, the Middle Cuyahoga begins at the Munroe Falls Dam. Table 5.1 needs to be revised.

Response:

Ohio EPA (1999) describes the Middle Cuyahoga as extending from the Lake Rockwell Dam to the Little Cuyahoga confluence. In some Ohio EPA water quality reports the Little Cuyahoga is included in the Middle Cuyahoga section of the Cuyahoga River. It would be inappropriate for NEFCO to revise a Table from an Ohio EPA report.

20. Comment:

Headwaters and high quality wetlands of the major watersheds should be added to the discussion in Chapter 6.

Response:

NEFCO agrees that headwaters and wetlands are important to the quality of downstream segments. The lack of funding precluded their inclusion in this update. Early in the CWP Update the identification of wetlands was intended to be part of the update but were found to be too extensive and costly to analyze as part of the current document. NEFCO hopes that in future CWP updates headwaters and wetland resources could be addressed.

21. Comment:

Breakneck Creek should be included as a groundwater recharge area for the City of Kent's wellfield.

Response:

NEFCO acknowledges the importance of these recharge areas. The lack of funding prevented a detailed discussion on these recharge areas other than to address them in a generalized manner. Communities, with the assistance of the Ohio EPA, will need to prepare Source Water Assessment Plans for the protection of the recharge areas. Hopefully in future CWP updates, NEFCO could more adequately document the existence of these plans as part of its regional plan to protect water resources.

22. Comment:

More emphasis is needed on urban stream restoration.

Response:

The CWP presents a discussion (Chapter 7) about identifying realistic urban restoration strategies. The intent is to develop a logical strategy to maximize the available financial resources for higher priority streams.

23. Comment:

Additional public input is needed for the CWP update.

Response:

NEFCO made numerous public and media announcements in an effort to generate public participation. Four public meetings were convened, two (afternoon and evening) in each county. An additional public meeting was convened to further solicit public input. Public meetings were also held during the development of the Plan.

24. Comment:

The definition of Publicly-Owned Treatment Works (POTW) needs to be more explicit.

Response:

The definition of a POTW was revised to be consistent with the Clean Water Act, Section 212.

Chapter 10

Ongoing Areawide Water Quality Management Planning

This chapter describes, in turn, NEFCO’s organizational structure for administering the areawide water quality management plan (208 Plan), its water quality planning functions, and agency policies for sustaining the ongoing planning process.

I. Organizational Structure of Areawide Management Planning

Northeast Ohio Four County Regional Planning and Development Organization (NEFCO)

Ultimate responsibility for 208 Plan administration in the NEFCO 208 Planning area is vested in the NEFCO General Policy Board which has been so designated by the Governor of Ohio. The NEFCO Board is comprised of 42 elected and public officials, and private appointees who represent the counties, cities, villages, townships and key regional agencies within the four-county area. The chief of the Ohio EPA’s Northeast Ohio District Office is a non-voting ex-officio member of the Board. Representation on the NEFCO General Policy Board is described in its Bylaws.

The Bylaws provides for the agency’s Environmental Resources Technical Advisory Committee (ERTAC) as a standing committee of the Board. The ERTAC was created with the following objectives:

- To serve as an information clearinghouse for environmental issues, proposed and final regulations, and grants.
- To serve as a forum for the discussion of regional environmental problems e.g. septage spreading, storm water management, and wetlands.
- To develop policies, actions and recommendations pertaining to the identified problems for General Policy Board consideration.
- To provide guidance to the NEFCO staff in the development and progress of products from its environmental work program, as well as technical reviews of completed products, which are then submitted to the NEFCO General Policy Board for consideration.

The composition of the ERTAC is described in the committee’s Bylaws. The committee membership includes representatives from the County Commissioners or County Executive, cities, county planning agencies, city and county health departments, sanitary engineers/ environmental service directors, the Ohio EPA central and regional offices, the Ohio Department of Natural Resources, and soil and water conservation districts.

II. Water Quality Planning Functions

The NEFCO Board provides many functions for water quality management planning. These functions are consistent with state and federal regulations and help to guide development of the organization's work program. As such, NEFCO:

- a) Maintains the Section 208 Continuing Planning Process for the planning area in cooperation with the Ohio Environmental Protection Agency and coordinates planning with adjacent regions sharing common watersheds.
- b) Serves as a regional policy forum for the identification, discussion and resolution of water quality management planning issues confronting local communities and "Designated Management Agencies" i.e., agencies designated to perform water quality management functions under the 208 Plan.
- c) Coordinates water quality information sharing among "Designated Management Agencies" and reports regional water quality trends and conditions.
- d) Assists "Designated Management Agencies" in planning and program development in cooperation with federal and state agencies. These plans and programs address public wastewater treatment, home sewage, package plants, storm water permits, nonpoint source management (such as storm water management and sediment control programs in urban areas and erosion control practices in rural areas), groundwater protection, wetlands, and other water quality strategies.
- e) Periodically updates plan elements addressing wastewater treatment management, home sewage, and nonpoint source controls.
- f) Plans and coordinates, in cooperation with the Ohio Environmental Protection Agency, and "Designated Management Agencies" water quality management planning in watersheds subject to remedial action plans. RAPs are plans to restore and protect water quality required by the Great Lakes Water Quality Agreement.
- g) Conducts limited field investigations of water quality conditions in cooperation with Ohio Environmental Protection Agency and "Designated Management Agencies".
- h) Assists "Designated Management Agencies" in identifying funds to carry out water quality management needs.
- i) Seeks to build public awareness of water quality management issues through public education and communications, and
- j) Advocates the interests of the region, and NEFCO's members in particular, in support of water quality management goals for Northeast Ohio.

III. Ongoing Planning Policies for this Water Quality Management Plan Update

The following policies describe functions needed to administer and sustain the 208 Plan on a continuing basis. Staff and financial support will be needed to sustain ongoing planning activities. With the adoption of this plan update, the NEFCO General Policy Board affirms its intention to sustain this plan.

A. Wastewater Management Planning Support

Policy 10-1: The areawide planning agency will review applications for state revolving funds for wastewater treatment and advise the applicant agency and Ohio EPA on the consistency of such applications with the 208 Plan.

Policy 10-2: In consultation with Ohio EPA, the areawide planning agency will review permits to install for new or expanded wastewater treatment facilities for consistency with the 208 Plan.

Policy 10-3: The areawide planning agency will obtain review and comment through the Intergovernmental Review (IGR) process and forward results to appropriate agencies upon federal grant applications with potential water quality impacts.

Policy 10-4: The areawide planning agency will assist in the resolution of conflicts between management agencies concerning primacy for wastewater treatment management and facility planning. This would extend to conflicts between facility planning areas with respect to coordination of sewer planning. Means such as the following would be utilized:

- (a) serve as a third party, listening to all sides of a dispute concerning water quality management planning functions; and
- (b) establish an ad hoc fact-finding committee which would also recommend courses of action to appropriate officials.

Policy 10-5: The areawide planning agency will periodically update population projections and inventory land uses to guide ongoing facility planning efforts.

Policy 10-6: The areawide planning agency will maintain and update as necessary base maps of facility planning areas.

Policy 10-7: The areawide planning agency will consider new facility planning areas in response to requests from designated management agencies.

B. Management of Home Sewage Disposal Systems

Policy 10-8: The areawide planning agency will sponsor periodic forums of area local health departments to assess progress in plan implementation.

Policy 10-9: The areawide planning agency will provide planning support for the preparation of septage disposal management plans.

C. Nonpoint Source and Storm Water Management

Policy 10-10: The areawide planning agency will periodically review and update nonpoint source and storm water management model legislation.

D. Protection of Regionally Important Water Resources

Policy 10-11: The areawide planning agency will coordinate local proposals for assimilative capacity set asides.

Policy 10-12: The areawide planning agency will periodically review and update regionally important water resource listings.

Policy 10-13: The areawide planning agency will maintain and update as necessary base maps of regionally important resource areas.

E. Watershed Planning Groups

Policy 10-14: The areawide planning agency will support and assist in the coordination of watershed level planning activities.

F. Urban Streams Restoration Planning

Policy 10-15: The areawide planning agency will provide planning support for the urban streams restoration planning process, if funding is available.

G. Administrative Planning Support

Policy 10-16: The areawide planning agency will periodically assess and report to appropriate authorities financial needs for area water quality management and planning.

Policy 10-17: The areawide planning agency will maintain liaison with and provide limited technical assistance to other water quality related programs operating or with the potential to operate in the planning area.

Policy 10-18: The areawide planning agency will monitor progress in implementation of the plan and periodically report progress to the Ohio EPA.

Policy 10-19: The areawide planning agency will review and comment on proposed changes to water quality standards for area bodies of water.

Policy 10-20: The areawide planning agency will assist local governments and other local water quality management agencies in their efforts to implement recommendations of this plan.

Policy 10-21: The areawide planning agency will recommend certification or decertification of management agencies to the Ohio EPA.

Policy 10-22: If funding is available, the areawide planning agency will periodically update its 208 Plan and submit the Plan for certification by the State of Ohio

Policy 10-23: The areawide planning agency will provide an opportunity for public participation in plan development discussions.

Policy 10-24: The areawide planning agency will provide staff to coordinate plan administration activities.

Chapter 11

Process for Local Approval and State Certification of the Plan

This chapter discusses the process for local approval and state certification of the areawide 208 Plan. It also addresses the coordination of the Areawide Plan with the State's continuing planning process.

I. Plan Development and Certification Procedures

Updating the areawide CWP is a collaborative process involving local jurisdictions, the areawide agency, the Ohio EPA and the USEPA. Once the plan has been approved locally, it is submitted to the Ohio EPA and to the Governor for certification and to the USEPA for approval. Procedures for doing this are spelled out in the Ohio EPA's Continuing Planning Process document.¹ This document outlines two phases of 208 Plan development: (a) a plan development phase and (b) a plan certification phase. It sets forth criteria to be met in plan development and an annual timetable for plan certification. The Ohio EPA's role is to assess whether plan development criteria have been met and to administer the annual plan certification process.

A. PLAN DEVELOPMENT

Ohio EPA has established three general requirements for 208 Plan development: technical adequacy; local government involvement; and public involvement. The plan will be determined technically adequate if it reflects current management needs, reflects current technical information, conforms with legal requirements and documents implementation steps. The test for local government involvement includes (1) local government involvement in plan development, (2) open meetings, (3) formal requirements for transmitting the plan to affected local jurisdictions, and (4) sufficient time for local government review.

To meet the requirements of public involvement, the planning agencies are encouraged to engage the public at three stages of the plan development process: (1) at the outset of plan development, (2) prior to the selection of plan alternatives, and (3) once the plan has been drafted but not finally approved by the areawide agency's General Policy Board (GPB).

¹Ohio EPA, Continuing Planning Process: Appendix 5 Process for State Certification of Water Quality Management Plans/Draft (June 30, 1998)

B. PLAN CERTIFICATION

The timetable for plan certification is as follows:

- a) the draft plan is submitted for concurrent 60 day review by Ohio EPA, affected local jurisdictions and the general public.
- b) the areawide agency has up to 60 days to revise the draft plan in light of comments received during the 60 day review period;
- c) the areawide agency GPB approves the final plan;
- d) the final plan is submitted to Ohio EPA, which conducts a public hearing within 60 days; and
- e) the plan is submitted to the Governor for certification.

After the plan has been certified by the Governor, it is submitted to USEPA for approval.

II. Coordination with the Ohio EPA Continuing Planning Process

Overall coordination of programs under the Clean Water Act is the responsibility of Ohio EPA. An overview of Ohio EPA's Clean Water Act Programs is provided in its Continuing Planning Process document.² These programs include water quality standards setting, water quality assessments, the issues of NPDES permits to control discharges, assistance in financing wastewater management facilities, enforcement and water quality monitoring activities. Total maximum daily loads (TMDL) is one important tool required by the Clean Water Act and employed by Ohio EPA to quantitatively assess a stream's water quality and allocate allowable pollutant loads among sources along the stream. TMDLs must be developed for water bodies impaired by point sources and/or nonpoint sources. Based upon this work, the Ohio EPA issues NPDES permits to control discharges to streams, rivers and lakes. Ohio EPA is required to periodically publish a TMDL development schedule for Ohio's water quality limited streams.³ The Ohio EPA is also responsible for administering nonpoint source control assessment and management programs and 208 water quality management plans in areas of the State not designated to areawide planning agencies.

Each year the Ohio EPA updates the State's Water Quality Management Plan which incorporates plan updates for both designated and undesignated areas of the State. Further details on these water quality programs are provided in the Continuing Planning Process document.

Ohio EPA produces a number of reports that document its implementation of Clean Water Act programs. These include the biennial 305(b) report, technical support studies which document biological and water quality assessments of Ohio's streams on a five-year cycle and a statewide assessment of nonpoint source pollution (see Chapter 2 above for a discussion of this information).

²Ohio EPA, "Continuing Planning Process (Draft)", 1998.

³Ohio EPA's current TMDL development schedule can be accessed online at <http://www.chagrin.epa.state.oh.us/>

In 1999, the Ohio EPA committed to an accelerated program of TMDL studies, which will address both point source and nonpoint contributing sources.

The schedule for implementing this program in Northeast Ohio is available at the Ohio EPA website listed below.

GLOSSARY

Anti-Degradation Policy - As part of its water quality standards program, each state must establish an antidegradation policy consistent with 40 C.F.R. 131.12. Minimum requirements for an antidegradation policy are (1) existing in-stream water uses must be maintained and protected; (2) where the quality of a water body exceeds that are necessary to support propagation of fish and recreation, that quality of water must be maintained and protected unless the state finds, after full public participation, that allowing lower water quality is necessary to accommodate important economic or social development in the area where the waters are located (existing uses still must be fully protected); and 3) where high-quality waters constitute an outstanding national resource, such as waters in national or state parks, that water quality shall be maintained and protected. Ohio EPA adopted new antidegradation regulations in 1996.

Area of Concern (AOC) - Areas (identified by the International Joint Commission, the binational body charged with overseeing implementation of the Great Lakes Water Quality Agreement) with such significant pollution that they are a potential or existing threat to the Great Lakes (see **Remedial Action Plan**).

Areawide Planning Agency - A regional agency designated by a governor as a representative organization which includes but is not limited to, members selected from elected officials of local governments or their designees; and has planning jurisdiction in a designated area.

Areawide Water Quality Management Plan - See **Section 208 Plan**

Assimilative Capacity - The capacity of a natural body of water to receive: (1) waste waters, without deleterious effects; (2) toxic materials, without damage to aquatic life or humans consuming the water; and (3) biological oxygen demand, within prescribed dissolved oxygen limits.

Best Available Demonstrated Control Technology - A wastewater treatment method capable of meeting the effluent limitations.

Best Management Practices (BMP) - Management practices (such as nutrient management) or structural practices (such as terraces) designed to reduce the quantities of pollutants, such as sediment, nitrogen, phosphorous, and animal wastes washed by rain and snow melt from land into nearby receiving waters, such as lakes, creeks, streams, rivers, estuaries and ground water.

Best or Better Regional Management Practices (BRMPs) - A series of recommended regional management practices for the approval, installation, management and evaluation of home sewage treatment systems (HSTS), and with input from OEPA, semi-public sewage disposal systems (SPDSs) as development for this 208 Update by representatives of the health agencies in the seven county Northeast Ohio area.

Best Science - Refers to minimum regulatory standards as set by current State and Federal regulations.

Bio-criteria - Water quality monitoring criteria based upon the ambient sampling of resident biological organisms to assess biological integrity. Biological, chemical and physical elements are considered. Other synonyms: in stream biological sampling, biosurveillance, biosurvey.

Bioengineering - The design and implementation of stream restoration techniques to enable a stream corridor to recover dynamic equilibrium and function at a self-sustaining level. These techniques include use of natural vegetative materials to stabilize stream banks.

Carbonaceous Biological Oxygen Demand (CBOD) - Organic materials which consume oxygen for biochemical degradation.

Clean Water 208 Plan Study Area - The area designated by the governor to be NEFCO's responsibility for 208 water quality management planning which includes portions of Portage, Stark and Summit Counties that are within the Lake Erie Drainage Basin; and the balance of those counties and Wayne County in the Ohio River Basin.

Clean Water Act (CWA) - Technically this should be cited as Public Law 92-500. "Federal Water Pollution Control Act Amendments of 1972." The Act established a 1983 goal of fishable and swimmable waters and a 1985 goal of elimination of pollutant discharges into navigable waters. Amendments to the Act were made in 1977, 1981, and 1987.

Clean Water Plan (CWP) - The water quality management plan or section 208 plan prepared by NEFCO to protect its region's water quality by addressing issues of planned sewer expansions, better management of home sewage systems, controlling nonpoint source pollution, and the identification and protection of the region's important water resources. The study area of the current update of the CWP is the Lake Erie Basin areas of Portage, Stark, and Summit Counties.

Coldwater Habitat (CWH) - This use designation is intended for waters which support assemblages of cold water organisms and/or those which are stocked with salmonids with the intent of providing a put-and-take fishery on a year round basis which is further sanctioned by the Ohio DNR, Division of Wildlife; this use designation should not be confused with the Seasonal Salmonid Habitat (SSH) use which applies to the Lake Erie tributaries that support periodic "runs" of salmonids during the spring, summer, and/or fall.

Combined Sewer Overflow - Combined sewers are sewers designed to convey both sanitary wastes and storm water runoff in the same pipes; a combined sewer overflow is the location where storm water and municipal wastes are discharged to streams during rainfall events when the increased amount of flow cannot be carried by the sewer system to the waste water treatment plant.

Conservation Easement - An easement is an agreement, usually permanent, that transfers one or more of a landowners property rights to another party. In a conservation easement a property owner transfers the right to develop or consume that property and its resources to a public or non-profit entity which commits to conserving it in perpetuity.

Conservation Design - A form of development design that concentrates land disturbances in certain areas to limit its impact on natural habitat.

Construction Site Erosion and Sediment Control Programs - These are local programs designed to control the erosion and transport of sediment to streams from development sites by planning for and implementing best management practices.

Continuing Planning Process (CPP) - A document prepared by the state in response to requirements of the Clean Water Act whose purpose is to define how the state, in Ohio the Ohio EPA, is implementing Section 303(e) of the CWA, which requires a description of the State process for preparing water quality management plans. The CPP provides a comprehensive overview of CWA program.

Cooperative Economic Development Agreement (CEDA) - The legislative authority of one or more municipal corporations, by ordinance or resolution, and the board of township trustees of one or more townships, by resolution, may enter into a cooperative economic development agreement under this section (ORC' 701.07).

Designated Management Agency (DMA) - See **Management Agency**.

Designated Planning Agency - See **Areawide Planning Agency**.

Environmental Resources Technical Advisory Committee (ERTAC) - NEFCO formed the Environmental Resources Technical Advisory Committee (ERTAC) in FY1995, as a replacement for the Water Quality Management Committee. The ERTAC was created to provide a forum for local government involvement in water quality management and water quality planning. The Committee reviews and provides input on Clean Water Plan (CWP) work elements and discusses water quality management issues including proposed and final federal and state regulations, permits, findings and orders, and environmental grant programs.

Exceptional Warmwater Habitat (EWH) - This use designation is reserved for waters which support “unusual and exceptional” assemblages of aquatic organisms which are characterized by a high diversity of species, particularly those which are highly intolerant and/or rare, threatened, endangered, or special status (i.e. declining species); this use designation represents a protection goal for water resource management efforts dealing with Ohio’s best water resources.

Facilities Planning Area (FPA) - A discrete geographical planning area of sufficient scope to allow for an analysis of various alternatives for the treatment and disposal of wastewater.

Farmland Preservation - Refers to land use and zoning measures, tax incentives and other public policies designed to facilitate the retention of agricultural land for agricultural production, particular adjoining urban areas.

Flood Plain - A watercourse and the areas adjoining a watercourse which periodically will be covered by flood waters.

Great Lakes Water Quality Agreement (GLWQA) - A treaty between the United States and Canada first established in 1972 which established goals and bi-national institutional arrangements for restoring and preserving the water quality of the Great Lakes.

Home Sewage Disposal System (HSDS) - Devices for the treatment and disposal of domestic wastewater, usually from a single household. Now referred to as Home Sewage Treatment System (HSTS).

Home Sewage Treatment System (HSTS) - Devices for the treatment and disposal of domestic wastewater, usually from a single household.

Hydrologic and Hydraulic Modeling - Computer-assisted method of predicting the amount and timing of stream flow in a stream channel given different levels of precipitation and alternative land use scenarios.

Infill Development - Refers to land use and zoning measures, tax incentives and other public policies designed to facilitate the utilization of undeveloped urban land particularly where public investments in infrastructure exist to support that development.

Joint Economic Development District (JEDD) - A fixed territorial division established by neighboring communities to allow establishment of sewer and water facilities in exchange for a sharing of tax revenues.

Land Conservancy Programs - A Land Conservancy or Trust is a non-profit organization established to protect land for its natural, recreational, scenic, historical, or agricultural value. This is accomplished through first-hand involvement in land management by: a) Accepting donations of land; b) Accepting donations of conservation easements; c) Purchase of **conservation easements**; d) Purchase of land; and e) Actual on-site monitoring of land to protect its use. Land Conservancies work closely with local government agencies, planning groups, other conservation organizations. They may focus their efforts in a local area, regional area, a particular type of resource, or a specific protection project. Resources protected may be forests, prairie grasslands, marshes, ranch land, scenic vistas, cultural landscapes, historic sites, or hiking trails. They depend on volunteer leadership and support, even if they have a professional staff. They bring together a wide range of people within a community such as: naturalists, planners, farmers, hunters, landowners, community leaders, developers, and other interested parties.

Lead Agency - See **Management Agency**

Limited Resource Water (LRW) - This use designation applies to small streams (usually less than a three square mile drainage area) and other water courses which have been irretrievably altered to the extent that no appreciable assemblage of aquatic life can be supported; such waterways generally include small streams in extensively urbanized areas, those which lie in watersheds with extensive drainage modifications, those which completely lack water on a recurring basis (i.e. true ephemeral streams), or other irretrievably altered waterways.

Linked-Deposit Program - The objective of this Ohio EPA administered program is to use Water Pollution Control Loan Fund monies (see **State Revolving Loan Fund**) to invest in local lending institutions which are linked to low interest rate loans to individuals who seek to implement approved nonpoint source management practices. Loans are issued directly by local banks to individual landowners to cover the cost of approved practices. The loan rate is reduced by three per cent from market conditions by the lending institution. Ohio EPA, in turn, agrees to accept an interest rate which is three per cent less than market rates interest on its deposit. Many agricultural practices including crop production and animal waste management practices, on-site wastewater treatment system upgrades, and storm water management controls are currently eligible. Ohio EPA continues to expand the list of eligible projects for controlling nonpoint source pollution. The program requires the completion of a watershed management plan that identifies needed nonpoint source controls and provides for targeted implementation. These plans are usually developed by the Soil and Water Conservation Districts in the watershed in concert with the County Agricultural and Cooperative Extension Agents.

Management Agency - An existing or newly created local, regional, or state agency or political subdivision designated by the governor, in consultation with the regional planning agency and affected local governments, as having adequate authority to carry out specific water quality programs and responsibilities.

Metes and Bounds - The boundaries or limits of a tract of land established by reference to natural or artificial monuments along it, such as a stream, ditch, fence, or road. This is distinguished from boundaries established by beginning at a fixed starting point and running there from by stated compass course and stated distances.

Metropolitan Planning Organization (MPO) - The designation under the federal transportation act of a regional agency whose responsibilities are to develop and administer long range multi-modal transportation plans for a metropolitan area. NOACA is the MPO for Cuyahoga, Geauga, Lake, Lorain and Medina Counties. AMATS is the MPO for Summit and Portage Counties.

Modified Warmwater Habitat (MWH) - This use applies to streams and rivers which have been subjected to extensive, maintained, and essentially permanent hydro modifications such that the biocriteria for the WWH use are not attainable and where the activities have been sanctioned and permitted by state and federal law; the representative aquatic assemblages are generally composed of species which are tolerant to low dissolved oxygen, silt, nutrient, enrichment, and poor quality habitat.

National Pollutant Discharge Elimination System (NPDES) Permit - Established by the Clean Water Act of 1972, the program imposes effluent limitations and monitoring requirements on point source dischargers, which may include municipal, private and industrial sources. The NPDES permits may contain compliance schedules to ensure construction of facilities needed to achieve the required effluent limitations.

Nature Works Grants - State grants administered by ODNR for parks, stream banking and boating facilities. The stream banking program is administered through the Division of Soil and Water for riparian zone protection.

Nonpoint Source Pollution - Water pollution that results from a variety of human land use practices, such as agriculture, surface mines, forestry, home wastewater treatment systems, construction sites, and urban yards and roadways. As a result, nonpoint source pollution is controllable by implementing land management practices that protect water quality and economic, social and political interests. These practices are often referred to as best management practices.

Nonresidential Land Use - This is a global term used in the Clean Water Plan to refer to land uses that are generally not used as homes. These categories include governmental offices and services, institutions, commercial, industrial, and park lands.

Ohio Lake Erie Protection Fund - A fund established in 1990 by the Ohio General Assembly by enactment of Substitute House Bill 804. The intended use of these funds is to award grants that will help the State of Ohio protect and enhance Lake Erie through the support of research, monitoring, demonstration and education projects.

Ohio Water Quality Standards (Ohio WQS) - The rules set forth in Chapter 3745-1 of the Ohio Administrative Code establish stream use designations and water quality criteria (scientifically derived ambient concentrations developed by the state) that are protective of the surface waters of the state.

Part 503 Sewage Sludge Regulations - Federal regulations that focus on the ultimate use or disposal of sewage sludge generated during the treatment of domestic sewage in a treatment works, addressing such practices as the land application, the distribution and marketing of sludge by products, sludge-only incinerators, and the disposal of sludge in sludge-only landfills.

Phase I of the NPDES Storm Water Permits Program - Rules promulgated by USEPA, which required municipalities or jurisdictions in urban areas with populations of 100,000 or more served by separate storm water sewers, to implement a series of storm water management programs to control polluted runoff from separate storm sewer systems.

Phase II of the NPDES Storm Water Permits Program - Rules promulgated by USEPA which require municipalities in urban areas with populations of 50,000 and above, areas with populations of 1,000 per square mile, and municipalities outside urban areas with populations greater than 10,000, to implement a series of storm water management programs to control polluted runoff from separate storm sewer systems.

Point Source Pollution - Any discernable, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or can be discharged.

Primary Designated Management Agency (Primary DMA) - A county or municipality that owns and operates a central wastewater treatment plant (WWTP) and at a minimum has the capacity to comply with Section 208 of the CWA and to refuse wastewater from any municipality or subdivision thereof which does not comply with the provision of the Clean Water Plan.

Publicly-Owned Treatment Works (POTW) - Publicly-owned facilities to treat sanitary and combined sewerage in accordance with requirements of an NPDES permit.

Regionally Important Water Resources - Water resources for which sufficient information exists to allow for the development of management recommendations and strategies by this plan. These include surface drinking water supplies, groundwater drinking supplies, and unique regional waters.

Remedial Action Plans (RAP) - Established by the Great Lakes Critical Programs Act of 1990 with the goal of addressing coordinated cleanup and control of phosphorous and eutrophication of the Great Lakes. The International Joint Commission, a binational organization of the U.S. and Canada, identified 43 **areas of concern** in the Great Lakes Basin. These areas were targeted for grassroots community cleanup projects. In Ohio, there are ongoing RAPs on the Ashtabula, Cuyahoga, Black and Maumee rivers. These projects have been extremely successful and are sustained by local involvement.

Riparian Buffer - A riparian buffer refers to a “green corridor” along the banks of a river or stream that separates water bodies from developed land uses and is intended to provide protection from the harmful impacts of such uses on water quality.

Riparian Zone - An ecological term that refers to the habitat adjacent to a river or stream that functions to support and enhance aquatic and terrestrial communities who are dependent on the river or stream.

Sanitary Sewer Overflow (SSO) - A sanitary sewer overflow is the location where municipal wastes are discharged to streams when the increased amount of flow cannot be carried by the sanitary sewer system to the wastewater treatment plant or where collection system failures occur.

Satellite Jurisdiction - An autonomous planning area which lies physically beyond the political jurisdiction boundaries of the DMA responsible for wastewater planning. It may be represented by an incorporated political unit e.g. city or village or sewer district.

Secondary Designated Management Agency (Secondary DMA) - A DMA or 6119/9117 township and sewer districts that uses a primary DMA’s WWTP and has responsibility for building, operating and maintaining of sewers under their jurisdiction, facilities planning and plan amendments requests within the boundaries of its sewer district; subject to oversight and agreement with a primary DMA.

Section 201 - Section 201 of the Federal Water Pollution Control Act (a.k.a. Clean Water Act) provided for waste treatment management plans and practices for the application of the best practicable waste treatment technology before discharge into receiving waters, including reclaiming and recycling of water, and confined disposal of pollutants. To the extent possible, waste treatment management was to be done on an areawide basis.

Section 208 Plan - Section 208 of the Clean Water Act (CWA) requires that water quality management plans (WQMP) be prepared by states and designated areawide agencies. While Ohio EPA is the lead agency in administering the CWA, six areawide water quality planning agencies, including NEFCO, are designated by the state to develop WQMPs for their respective regions. The focus of the WQMP is to plan for the management of future water quality by local public jurisdictions and agencies.

Section 208 Plan Consistency Review - A procedure whereby plans for future wastewater treatment facilities are determined to be consistent with the areawide water quality management plan. Potential issues include facilities planning area boundary coordination and population projections employed.

Section 401 Certification - A state (Ohio EPA) certification required by the Clean Water Act for any activity which discharges dredged or fill materials into the waters, including wetlands, of the United States whereby the State identifies that water quality standards will not be violated by the subject activity. A Section 404 Permit from the United States Army Corps of Engineers (Corps) is also required for these activities. If the Ohio EPA does not issue a 401 permit, the Corps may not issue a 404 permit. There are a number of activities involving “de minimis” (negligible) discharges which are covered by general permits.

Section 404 Permit - See “Section 401 Certification”.

Section 319 Nonpoint Source Demonstration Grants - The CWA requires each state to develop a nonpoint source state management program, which includes identification of best management practices; and provide technical assistance to the public and other agencies. A limited amount of federal funding is available for nonpoint source pollution control projects. Applications are first reviewed by Ohio EPA and then forwarded to U.S. EPA for final review and approval.

Section 305(b) Report - A biennial water quality report is required of each state by the CWA. The report, which is also referred to as the Water Resource Inventory, evaluates the water quality of all navigable waters of the state, and identifies which water bodies are meeting use attainments as defined by the state’s water quality standards. The 305(b) report is a summary of monitoring information collected from technical support documents and other monitoring information.

Semi-Public Sewage Disposal System (SPSDS) - A discharge disposal system which treats the sanitary sewage discharged from publicly and privately owned buildings or places of assemblage, entertainment, recreation, education, correction, hospitalization, housing, or employment, but does not include a disposal system which treats sewage in amounts of more

than twenty-five thousand (25,000) gallons per day; a disposal system for the treatment of sewage from single-family, two-family, or three-family dwellings; or a disposal system for the treatment of industrial waste.

Sentinel species - Species of animal, bird or reptile used as an ecosystem indicator of toxic effects.

Septage Disposal Plan - A comprehensive plan for the final disposal of septage which is the waste material pumped from individual home sewage disposal systems.

Sewershed - The area drained by sewers.

State Revolving Fund Loan - This is a program established by the 1987 amendments to the Clean Water Act which provides for low interest loans for improvements to publicly owned wastewater treatment and conveyance facilities. A portion of these loans are also available to support certain best management practices for control of nonpoint sources of pollution.

Storm Water Runoff - Includes snow melt runoff, water runoff from storms and surface runoff and drainage.

Storm Water Management Ordinances - These are local programs designed to control the quantity and rate of runoff from developed or developing sites.

Stream-banking Programs - A method of preserving stream banks through the implementation of a strategy of targeted land acquisition and conservation easements.

Stream Morphology - Physical characteristics of a stream channel including size, shape, flow patterns, and the like.

Total Maximum Daily Loads (TMDL) - A TMDL is the amount of pollutant that can be assimilated by a water body without a violation of a water quality standards, and includes wasteload allocations for point sources, load allocations for nonpoint sources, and a margin of safety.

Unique Regional Waters - A term (created by NEFCO) that refers to a series of stream segments that have unique or special characteristics, and are ecologically or recreationally significant. These can include wild, scenic, and recreational rivers, publicly-owned lakes and reservoirs, and surface waters that lie in National, State, or metropolitan park systems, wetlands, wildlife refuge areas, and preserves.

Urban Stream Restoration Plan - A term of art developed for the NOACA and NEFCO 208 plans that refers to a strategy for developing community goals and implementing programs in heavily impacted urban streams determined by the 208 planning process to warrant additional protective measures to be implemented by local governments.

Use Attainability Analysis - A “Use Attainability Analysis” considers all pertinent biological, chemical, and physical attributes of a water body to determine the uses that can be reasonably attained by that body when all applicable laws and regulations are met by entities that discharge pollutants to the body. See **Water Quality Use Designations**.

Warmwater Habitat (WWH) - This use designation defines the “typical” warmwater assemblage of aquatic organisms for Ohio rivers and streams; this use designation represents the principal restoration target for the majority of water resource management efforts in Ohio.

Wastewater Treatment Facility - Facilities designed to remove disease causing organisms and other pollutants from wastewater before its release back to the environment.

Water Quality Management Plan - See **Section 208 Plan**.

Water Quality Use Designations - The designation of surface waters and specification of a set of water quality standards for the purpose of protecting their use. Generally, water use classification includes: public water supply; recreation; warm water habitat; propagation of fish and other aquatic life; agricultural use and industrial use. Use designations are defined in Ohio Administrative Code (OAC) rule 3745-1-07. Water bodies are assigned use designations in OAC rules 3745-1-08 to 3745-1-32. Those rules specifically list water bodies and their assigned use designations that have been determined as appropriate after being analyzed by Ohio EPA according to approved methods.

Watershed - The area drained by a river or stream.

Watershed Stewardship Programs - Refers to programs aimed at building homeowner and community involvement in stream monitoring, protection and/or restoration activities.

Watershed Trading - strategy of shifting pollution reduction responsibilities between contributing sources of pollution within a watershed.

Wellhead Protection - A program to prevent contamination of the ground water used for public drinking water. A wellhead protection plan consists of three steps: (1) determining the area contributing water to a public well or wellfield; (2) inventorying the potential pollution sources in the wellhead protection area; and (3) developing a management strategy to prevent, detect, and remediate ground water contamination. Now referred to by the Ohio EPA and USEPA as the Source Water Assessment and Protection program.

LIST OF ACRONYMS

ADT - Average Daily Traffic
AMATS - Akron Metropolitan Area Transportation Study
BIE - Biological Integrity Equivalents
BMP - Best Management Practice
BRMP - Best or Better Regional Management Practice
CBOD - Carbonaceous Biologic Oxygen Demand
CEDA - Cooperative Economic Development Agreement
CCC - Cuyahoga River RAP Coordinating Committee
CPP - Continuing Planning Process
CRCPO - Cuyahoga River Community Planning Organization
CSO - Combined Sewer Overflow
CVI - Cuyahoga Valley Interceptor
CVNP - Cuyahoga Valley National Park
CWA - Clean Water Act
CWH - Coldwater Habitat
CWP - Clean Water Plan
DEFA - Ohio EPA Division of Environmental and Financial Assistance
DMA - Designated Management Agency
EAC - NOACA Environmental Advisory Committee
ERTAC - NEFCO Environmental Resources Technical Advisory Committee
EWH - Exceptional Warmwater Habitat
FPA - Facilities Planning Area
GIS - Geographic Information Systems
GLWQA - Great Lakes Water Quality Agreement
HSDS - Home Sewage Disposal System
HSTS - Home Sewage Treatment System
IGR - Intergovernmental Review
JEDD - Joint Economic Development District
JCARR - Joint Committee or Agency Rule Review
LHD - Local Health District
LRW - Limited Resource Water
MPO - Metropolitan Planning Organization
MS4s - Municipal Separate Storm Sewer Systems
MWH - Modified Warmwater Habitat
NEDO/OEPA - Northeast District Office of Ohio EPA
NEFCO - Northeast Ohio Four County Regional Planning and Development Organization
NEOLB - Northeast Ohio Lake Erie Basin
NEORS - Northeast Ohio Regional Sewer District
NOACA - Northeast Ohio Areawide Coordinating Agency
NPDES - National Pollutant Discharge Elimination System
NRCS - Natural Resources Conservation Services
NRMRL - National Risk Management Research Laboratory
O&M - Operational and Maintenance Programs
OAC - Ohio Administrative Code
OAG - Office of Ohio Attorney General
ODH - Ohio Department of Health
ODNR - Ohio Department of Natural Resources

ODOT - Ohio Department of Transportation
OEPA or Ohio EPA - Ohio Environmental Protection Agency
ORC - Ohio Revised Code
ODOD-OSR - Ohio Department of Development-Office of Strategic Research
OWDA - Ohio Water Development Authority
POTW - Publicly-Owned Treatment Works for Wastewater
PTI - Permit to Install
RAP - Remedial Action Plan
RC&D - Resource Conservation and Development Council
SPSDS - Semi-Public Sewage Disposal System
SRF - State Revolving Fund
SSO - Sanitary Sewer Overflow
SWCD - Soil and Water Conservation District
TMDL - Total Maximum Daily Load
TRAC - Transportation Review Advisory Commission
USDA - United States Department of Agriculture
USEPA - United States Environmental Protection Agency
USRP - Urban Streams Restoration Plan
VHT - Vehicle Hours Traveled
VMT - Vehicle Miles Traveled
WPCLF - Water Pollution Control Loan Fund
WQMP - Water Quality Management Plan
WQPSD - Water Quality Permit Support Document
WQS - Water Quality Standards
WWH - Warmwater Habitat
WWTP - Wastewater Treatment Plant

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