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Water Quality Planning Activities in the U.S. Great Lakes Basin -

A Review of State and Areawide Agency Five Year Strategies and Work Programs

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WATER QUALITY PLANNING ACTIVITIES IN THE U.S. GREAT LAKES BASIN -

A Review of State and Areawide Agency Five Year Strategies and Work Programs

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DISCLAIMER

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SUMMARY

The five year strategies and annual work programs developed by state and areawide planning agencies in the basin were reviewed, and studies with particular relevance to Great Lakes issues and problems identified. Generally, study proposals focus on point and nonpoint sources of pollution, residuals and sludge management, toxics, updating land use and population projections, and implementation of water quality studies. Few studies were identified which specifically deal with the Great Lakes. However, many proposed work elements indirectly address Great Lakes problems or provide critical information needed to plan for or manage the Great Lakes. For example, many of the five year strategies, carried out as planned, will be generating information on point and nonpoint inputs to the Great Lakes, as well as their control.

Due to recent changes in priorities and program direction for Section 208 Water Quality Management, some of the programs outlined in both the five year strategies and work programs will no longer be eligible for 208 funding. Generally, highest funding priority in the future will be assigned to programs addressing nonpoint source pollution.

It is important that the results from the regional studies and demonstrations, which have begun or will be completed over the next several years, be utilized in the evolution and maintenance of a management strategy for the Great Lakes.

TABLE OF ACRONYMS

CNYRPDB	Central New York Regional Planning and Development Board
CUPPAD	Central Upper Peninsula Planning and Development Regional Commission
ECMPDR	East Central Michigan Planning and Development Region
EUPRPDC	Eastern Upper Peninsula Regional Planning and Development Commission
FVWQPA	Fox Valley Water Quality Planning Agency
GLS-V	Genesee-Lapeer-Shiawassee Region V Planning and Development Commission
IEPA	Illinois Environmental Protection Agency
MACOG	Michiana Area Council of Governments
MDNR	Michigan Department of Natural Resources
MPCA	Minnesota Pollution Control Agency
NEMCOG	Northeast Michigan Council of Governments
NIPC	Northeast Illinois Planning Commission
NIRPC	Northwest Indiana Regional Planning Commission
NMRPDC	Northwest Michigan Regional Planning and Development Commission
NOACA	Northeast Ohio Areawide Coordinating Agency
NYSDEC	New York State Department of Environmental Conservation
OEPA	Ohio Environmental Protection Agency
Region II	Region II Planning Commission
SEMCOG	Southeast Michigan Council of Governments
SEWRPC	Southeastern Wisconsin Regional Planning Commission
SMPC	Southcentral Michigan Planning Council
SMRPC	Southwestern Michigan Regional Planning Commission
SPCB	Stream Pollution Control Board
TCRPC	Tri-County Regional Planning Commission
TMACOG	Toledo Metropolitan Area Council of Governments
WDNR	Wisconsin Department of Natural Resources
WMRPC	Western Michigan Regional Planning Commission
WMSRDC	West Michigan Shoreline Regional Development Commission
WUPPDR	Western Upper Peninsula Planning and Development Region

CONCLUSIONS

The following studies were identified from five-year strategies and annual work programs to be of particular relevance to the Great Lakes. The abbreviations in parentheses following the work program description refer to the organizations planning to direct the work program.

LAKE SUPERIOR

1. Establishment of a toxic substances monitoring program with fixed stations in the lake (MPCA).

2. Initiation of an industrial wastewater pretreatment program (to include toxic substances) (MPCA & WDNR).

3. Study of nonpoint source impacts on water quality, an analysis of reduction measures and their respective costs, and recommendations for best management practices (BMPs) (MPCA).

4. Survey of toxic contaminants in Great Lakes fish (MDNR).

5. Cost-benefit analysis of best management practices to reduce sediment loads in problem streams (EUPRPDC).

LAKE MICHIGAN

1. Monitoring program for heavy metals in urban runoff and development of detailed plans and costs for pollution abatement in selected communities in the Green Bay region (FVWQPA).

2. Special monitoring studies on the (a) Menominee River, (b) Green Bay urban runoff/urban stormwater and (c) Lake Michigan tributaries; these studies are intended to result in recommendations for corrective action (WDNR).

3. Initiation of an industrial pretreatment program (to include toxic substances) (WDNR).

4. Development of a management strategy for residuals from publicly-owned treatment plants, including recycling and disposal, and monitoring of toxics (WDNR).

5. Water resources investigation of direct drainage areas to Lake Michigan; the effects of runoff on receiving estuaries, harbors, and Lake Michigan proper will be analyzed in regard to water quality, pooling of pollutants, dredging, and recreation (SEWRPC).

6. Examination of the impact of discharges from the Indiana Harbor Ship Canal into Lake Michigan (NIRPC).

7. Study of the feasibility of using thermal infrared imagery to aid in the location of stormwater drains discharging to Lake Michigan (NIPC).

8. Demonstration projects on control of urban stormwater runoff (including detention basins, street cleaning, and the influence of wetlands) (NIPC).

9. Extensive water quality modeling studies of combined sewer overflow events and stormwater in the Lansing area (TCRPC).

10. A municipal sludge management, and an industrial toxic pollutant control program for the State of Indiana (SPCB).

11. Identification and quantification of air emission constituents impacting water quality (MDNR).

12. Survey of toxic contaminants in Great Lakes fish (MDNR).

13. Examination of the impact of power plant discharges on water quality (MDNR).

14. Investigation of the magnitude of the pollution problem caused by combined sewer overflows and urban runoff and means of control (MACOG).

LAKE HURON

1. Identification of urban stormwater runoff, sanitary and combined sewer overflow problems and determination of corrective measures, particularly in the Flint and Saginaw Rivers' watersheds (GLS-V; ECMPDR; NEMCOG).

2. Determination of toxic loading to the Flint River and assessment of types and cost-effectiveness of treatment systems for pollution abatement (GLS-V).

3. A sampling program in selected areas of the basin experiencing extensive agricultural nonpoint source pollution problems to determine sediment, nutrient and toxic problems (GLS-V).

4. Study of cost-effectiveness of selected agricultural "best management practices" (ECMPDR).

5. Monitoring program to determine contamination of sediments in the Flint, Shiawassee, and Tittabawassee Rivers and Saginaw Bay by toxic substances (ECMPDR).

6. A study of PCB/PBB contamination of Pine and Saginaw River sediments (ECMPDR).

7. Study of atmospheric sources of water pollution (GLS-V).

8. Survey of toxic contaminants in Great Lakes fish (MDNR).

LAKE ERIE

1. Analysis of potential for a regional industrial waste clearinghouse (SEMCOG).

2. Workshop on a model program for industrial pretreatment (SEMCOG).

3. Examination of centralized sludge management and reuse, and refuse incineration as an energy source (Region II).

4. A program to monitor the improvements in water quality in southwestern Lake Erie, its estuaries, and rivers (TMACOG).

5. Study of the cost-effectiveness of using a structural or non-structural stormwater management program (TMACOG).

6. Investigation of the benefits of water conservation and the possibility that a water conservation program could forestall the need to expand waste treatment facilities (OEPA).

7. Determination of cost-effective means of wastewater treatment at municipal and industrial facilities, and alternative methods of financing for local governments (OEPA).

8. Analysis of the cost-effectiveness of alternatives for control of stormwater runoff based on modeling techniques to be developed (OEPA).

9. Study of the air quality effects of wastewater treatment projects and an inventory of airborne pollutants in urban stormwater runoff (NOACA).

10. Development of a comprehensive water quality data base which includes Lake Erie nearshore monitoring results (NOACA).

11. Survey of toxic contaminants in Great Lakes fish (MDNR).

LAKE ONTARIO

1. Implementation of pretreatment programs for all municipal systems with industrial inputs (CNYRPB).

2. Review of alternative wastewater disposal options for small urban communities (CNYRPB).

3. Implementation of a combined sewer overflow and urban stormwater runoff program; the program will update information on combined sewer systems, develop specific strategies for waters strongly impacted by urban runoff, and propose a strategy to handle toxic substances from urban runoff (NYSDEC).

4. Development of a toxics management program, in conjunction with EPA, to include: (a) identification of existing problems; (b) monitoring program to assess long-term trends; (c) regulatory program to control manufacture, transport, use and disposal of toxics; and (d) treatment and disposal program (NYSDEC, CNYRPB).

INTRODUCTION

According to Water Quality Management regulations (40 CFR Part 35, Subpart G [1979]), each state must prepare and update annually a five-year strategy for controlling pollution from point and nonpoint sources. The strategy must include a statement of goals; identification of priority water quality problems and estimated costs of activities to control the problems; identification of responsible governmental entities; and a summary of all anticipated funding. The strategy should address the problems, solutions and priorities in certified and approved Water Quality Management plans; problems identified by the state in its problem assessment process; and needs related to problems with management agency performance.

The state must involve areawide "208" agencies in development of the five-year strategy and consider priorities suggested by the agencies. Public participation is also required. U.S. EPA Regional Administrators use the state strategies in their reviews of areawide work programs.

Brief summaries of the five-year strategies prepared by Great Lakes states and areawide agencies which were available at the time of this review follow. Major water pollution problems highlighted in the reports and programs proposed for pollution abatement are discussed. Pollution abatement programs of particular relevance to the Great Lakes are identified. Work elements were summarized by 13 categories of interest: point sources, nonpoint sources, toxics, water quality studies, atmospheric sources, groundwater, land use/population projections, energy, water conservation, wetlands, dredging, residuals and sludge management, and specific Great Lakes studies. Anticipated costs for the proposed work elements are provided.

In some instances (e.g., in the State of Michigan), designated 208 areawide planning agencies prepared individual five-year strategies for input to the overall state report. Summaries of these reports have also been included. Where five-year strategies were unavailable, annual work programs for the state and/or areawide agencies were included to provide some insight into the region's proposed activities.[1]

It should be noted that not all of the activities listed in the five-year strategies and work programs are proposals for 208 funding. A number of the programs specified require another source of funding. Generally, the

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1. Annual work programs are required of states and areawide agencies under 40 CFR Part 35, Subpart G (1979). Work programs are expected to emphasize quantifiable objectives and outputs. For each output, the work program must list cost, source of funds, name of responsible agency/department and certain other information required by regulation. State work programs cover all activities the state will fund with 106 and 208 grants, as well as Clean Lakes (Section 314) grants and 205(g) grants. Areawide work programs cover activities funded under Section 208, unless the state passes through 106, 205(g), or other funds to the agency for specific programs. A separate public participation work program is also required by regulation.

strategies and work programs reviewed focus on point and nonpoint sources of pollution, residuals and sludge management, toxics, updating land use and population projections, and implementation of water quality studies. Energy, water conservation, wetlands and dredging issues are rarely addressed. The significance of atmospheric pollution and groundwater contamination will be the subject of a handful of studies. Although there are few studies specific to the Great Lakes, a number of relevant investigations have been proposed (e.g., toxic substances monitoring program for Saginaw Bay [ECMPDR]).

SUMMARY OF FIVE YEAR STRATEGIES AND WORK PROGRAMS

Summaries of the reports available at the time of this review follow. Report summaries are organized in alphabetical order, by implementing agency.

CENTRAL NEW YORK REGIONAL PLANNING & DEVELOPMENT BOARD
FIVE-YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

The Central New York Regional Planning and Development Board (CNYRPB) has identified the threat of toxic substances pollution as the most serious water quality problem facing the region. Other nonpoint sources such as atmospheric fallout and urban and rural runoff also deserve attention, as control and management efforts are poorly developed. Water quality affected by point sources has been steadily improving over the past decade as pollutant sources have been eliminated and treatment facilities built. However, there are still a number of locations where new and improved facilities are needed. Lake Ontario, the Oswego River, Onondaga Lake, and Cowaselon Creek are all adversely impacted by combined sewer overflows.

Highlights/Great Lakes Concerns

The three primary objectives of the Central New York Regional Planning and Development Board Water Quality Management Program during the continuing programming process will be: (1) the creation or designation of a water quality management agency to coordinate programming in each county; (2) the identification of toxic waste disposal practices that pose a serious threat to ground and surface water quality; and (3) the establishment of an integrated monitoring program to assess the effects of nonpoint sources, residual wastes, urban stormwater, and combined sewer overflows on regional water quality. The Water Quality Management Plan will also assist municipalities in developing pretreatment programs, and coordinate the upgrading of wastewater collection and treatment facilities in the region.

The study is comprehensive in its identification of problem areas and recommendations for handling the region's problems, but full implementation of proposed programs will depend on funding levels in the upcoming years. Several legislative and management unit coordination recommendations are proposed which will aid implementation of its plan, if enacted.

CNYRPDB FIVE-YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Complete construction of new treatment facilities, renovation of existing plants; and renovation and construction of collection systems.			NO		
Implement effective infiltration/inflow programs to reduce unnecessary water input into collection and treatment works.					
Implement pretreatment programs for all treatment systems with industrial inputs.					
Review alternative wastewater disposal options for small urban communities.					
Analyze streams receiving point source inputs to assess impact of waste loadings.			COSTS		
NONPOINT SOURCES					
Institute BMPs to minimize potential adverse impacts of nonpoint sources.					
Institute BMPs in all major urban areas to adequately control pollutants carried by urban runoff.					
Determine input and impact of nonpoint source pollutants on area waterbodies by a background monitoring program augmented by special studies where indicated.			SPECIFIED		
Continue nonpoint study to relate nutrient concentrations to land uses.					
TOXICS					
Develop, in conjunction with U.S. EPA and NYSDEC, a management program that includes: discovery program to identify existing problems; monitoring program to assess long-term trends; regulatory program to control manufacture, transportation, use, and disposal of toxics; and treatment and disposal program to protect public health.					
WATER QUALITY STUDIES					
Develop a comprehensive water quality monitoring program in cooperation with U.S. EPA, the USGS, NYSDOH and county water quality management agencies.					
Increase ground and surface water quality monitoring around existing and abandoned landfills.					
GROUNDWATER					
See Water Quality Studies above.					

CENTRAL UPPER PENINSULA PLANNING AND DEVELOPMENT REGIONAL COMMISSION
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

Municipal wastewater treatment problems, construction site runoff, and pollution from individual on-site disposal systems are the major water quality issues in this region. Municipal problems include: achieving compliance with effluent limitations at existing plants; providing adequate treatment for small communities currently lacking effective treatment; and rehabilitating sewer and stormwater collection systems at reasonable cost.

The following were noted as minor problems: residual wastes, pollution from agricultural and mining activities (mining is a major activity in the region), urban and industrial stormwater runoff, pollution from silvicultural activities, and hydrologic modifications.

Emphasis is on continuing planning for municipal treatment needs, inland lake management, and individual on-site disposal systems. Although lake water quality is not currently a problem, it will be addressed in view of the development projected to occur in this region. Overall emphasis is on maintaining the high quality of the waters of the region.

Highlights/Great Lakes Concerns

An interesting element of the continuing planning process is the proposed inventory of wastewater rate practices and development of wastewater rate guidelines for municipal systems to promote the operation of systems on a sound financial basis. Two additional studies are planned, one on inland lakes management and another on individual on-site disposal systems.

Atmospheric sources, toxics, energy, wetlands, dredging and specific Great Lakes issues were not addressed.

CUPPAD FIVE-YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Basic continuing planning -	X	X	X	X	X
Review/comment on 201 Plans/NPDES permits.					
Establish a regional priority list.					
Assist in establishing regionalized treatment facilities where economies of scale warrant.					
NONPOINT SOURCES					
Basic continuing planning -	X	X	X	X	X
Will include problem identification and priorities for funding.					
RESIDUALS AND SLUDGE MANAGEMENT					
Marquette Co. Health Dept. study of on-site wastewater disposal systems.	18				
Develop a coordinated approach for the disposal of septage, including the feasibility of a central disposal site(s).					
Develop a detailed data base on system failures, contaminated wells, etc., and correlate with other data, (e.g., soil surveys, bedrock, etc.).					
Determine wastewater disposal practices of lakeshore residents around the Dead River Storage Basin.					
Extend results to two other counties.			44		
WATER QUALITY STUDIES					
Inland Lakes Study and Atlas -	36	40			
Detailed development information bases for at least 50% of the region's lakes.					
Basic continuing planning -	X	X	X	X	X
Will include: review of water quality data in the region to identify problems and trends and identification of locations, parameters and frequency of sampling for additional monitoring stations and sites.					
LAND USE/POPULATION PROJECTIONS	X	X	X	X	X
Population projections were revised in plan update and will be revised through the continuing planning process.					

NOTE: X = no cost specified.

EAST CENTRAL MICHIGAN PLANNING AND DEVELOPMENT REGION
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

Urban nonpoint sources have been shown to significantly worsen Saginaw River water quality following a summer storm event, with standards violated for both dissolved oxygen and bacteriological contamination. Rural nonpoint sources also degrade the water quality. Toxic substances from current and past point and nonpoint sources within the Saginaw River basin have contaminated the rivers. These inplace pollutants will continue to pose a management problem for years to come. Residuals disposal is considered a major problem, yet its effect on water quality has not been monitored. Development of institutional arrangements to provide for plan implementation and to monitor plan compliance is an additional problem.

High priority has been assigned to those significant problems inadequately addressed by existing institutional regulatory mechanisms. The highest priority issues for the next five years are:

Urban nonpoint sources -
primarily storm and combined sewer discharges and sanitary sewer overflows;
Rural nonpoint sources -
primarily on-site domestic wastewater disposal, runoff from agriculturally-managed land, rural stormwater drainage systems;
Toxic substances -
both point and nonpoint sources, and present contamination of sediments, water, and both the aquatic and terrestrial food chains; and
Residuals management -
efficient handling and environmentally safe disposal of sludge and solid waste.

Highlights/Great Lakes Concerns

A unique element of East Central Michigan's five year strategy is the Section 115 (Federal Water Pollution Control Act Amendments of 1972) study of PCB/PBB contamination of the Pine and Saginaw river sediments. Toxic substances control and hazardous waste management are both addressed comprehensively.

Agricultural nonpoint sources of nutrients to Saginaw Bay are a major Great Lakes problem, and the Quanicassee-Sebewaing watershed has been identified as a state priority for Rural Clean Water program funds.

ECMPDR FIVE-YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Pretreatment program needs assessment.			27		
NONPOINT SOURCES					
Urban runoff -					
Combined sewer impact assessment - Wet weather monitoring of Saginaw River and identification of problem areas.				44	
Stormwater monitoring data and assessment of stormwater impact on water quality - Assistance to local governments.					25
Rural runoff -					
Map high priority agricultural problem areas and estimate costs of BMPs.	32				
Document BMP effectiveness.		63			
TOXICS					
Toxic substances monitoring of Flint, Shiawassee and Tittabawassee River sediments (heavy metals, PCBs).	100				
Section 115 study of PCB/PBB contamination of Pine and Saginaw Rivers.	500				
RESIDUALS AND SLUDGE MANAGEMENT					
Assessment of impact on surface and groundwater quality from major residual waste sites.				68	
WATER QUALITY STUDIES					
Regional clearinghouse for water quality data collection and distribution -				22	
See Toxics above.					
See Residuals and Sludge Management above.					
See Nonpoint Sources, "Combined sewer impact assessment", above.					
Stormwater monitoring data and assessment of stormwater impact on water quality.					20

ECMPDR FIVE-YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
LAND USE/POPULATION PROJECTIONS					
Annual update and amendments to the Water Quality Management Plan -					
Review land cover, population and economic projections; incorporate 201 and 208, and review success of plan implementation.	25	20		25	25
Detailed assessment of population projections with necessary revisions. Also, review and amendment of wasteload projections.			82		
GROUNDWATER					
See Residuals and Sludge Management above.					
ATMOSPHERIC SOURCES		X			
Monitoring of effectiveness of certain agricultural management practices will include sampling of sediment and nutrient loss from wind erosion.					
DREDGING					
No specific mention, although Section 115 study will include removal, treatment and management of contaminated sediments.					
SPECIFIC GREAT LAKES STUDIES					
No specific studies, although Saginaw Bay will be included in "Toxic substances monitoring" program above. Also, highest priority issues are directly responsible for the accelerated eutrophication of Saginaw Bay.	X				

NOTE: X = no cost specified.

EASTERN UPPER PENINSULA REGIONAL PLANNING & DEVELOPMENT COMMISSION
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

Four pollutant sources were assigned high regional priority: agricultural runoff to surface waters; sedimentation of surface waters from construction and earth moving activities; discharges from septic systems; and impact of dredging activities on surface waters. Other concerns include landfill seepage and soil eroison.

Highlights/Great Lakes Concerns

Areas of emphasis are narrowly defined, but not well funded (due to the sparse population of the region). No specific Great Lakes studies are proposed.

EUPRDC FIVE-YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Implement 201 programs in St. Ignace, Mackinac Island, Clark Township, and Sault Ste. Marie.		1	2	8	5
Assure that all industrial dischargers are covered with NPDES permits and permit conditions adhered to.					
NONPOINT SOURCES					
Assess BMPs for cost/benefit. Reduce sediment loads by 25% in problem streams. Reduce runoff of animal wastes to surface waters.				5	
Reduce sediment loads from construction and earth-moving activities by 25% in problem areas.					
Emphasize County Health Department enforcement program for siting of on-site disposal systems. Investigate advantages of managing on-site disposal systems for certain rural portions of the region.					5
Identify acceptable solid waste landfill sites; provide technical assistance to local units of government to design, analyze and assess various sites and methods of disposal.		5	10	5	
Inventory closed industrial dumps.		1			
Evaluate impact of stormwater runoff from Kincheloe Air Force Base as part of reuse plan for base.			5		
TOXICS					
Remove or cap the tannery dump site on the St. Mary's River.					
WATER QUALITY STUDIES					
Conduct a detailed analysis of Kinross Lake watershed and appropriate development control; expand to some of the larger inland lakes in FY '81.		14	8		
LAND USE/POPULATION PROJECTIONS					
Update population and economic projections.					

FOX VALLEY WATER QUALITY PLANNING AGENCY
WATER QUALITY MANAGEMENT DETAILED WORK PROGRAM
FY 79

Major Problems/Program Emphasis

Discharges from municipal treatment plants and pulp and paper mills were identified as major point sources of pollution. Urban runoff and rural runoff, primarily from intensive agricultural activities and rural construction, were identified as significant sources of pollution. Urban runoff problems were not studied in detail in development of the initial 208 plan but will be addressed during FY 79.

Fox Valley's proposed 208 activities are based on the State of Wisconsin's five year strategy and are consistent with the state's priorities. Program emphasis is focused on means of achieving a 50% reduction in phosphorus loadings to the region's surface waters. Completion of waste load allocations, urban runoff controls, detailed subwatershed plans for landowners, inventory and analysis of existing and projected sludge production, feasibility studies in marsh and wetlands maintenance and reclamation for water quality benefits, in-lake management studies, and continuation of water quality monitoring are near-term priorities.

Highlights/Great Lakes Concerns

Special consideration is given to review and development of waste load allocations, including those for small streams. Wetlands are addressed through a marsh and wetlands study. First-level state priorities include a groundwater study and a determination of reasonable costs which might be imposed on a municipality for advanced wastewater treatment. Other state activities include development of water quality objectives for lakes and possible promulgation of new standards to meet the objectives.

Lower level state five year priorities (contingent upon funding) are:

- a determination of the types and the extent of various toxic discharges;
- further efforts to coordinate the state and federal programs for dredge and fill materials;
- study of the impact of discharges on wetlands and the effects the wetlands have on water quality;
- evaluation of the need for and effect of laws and regulations dealing with source reductions (i.e., phosphorus bans, water conservation).

FVWQPA DETAILED WORK PROGRAM

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000) 79
POINT SOURCES	
Waste load allocations - For affected industries and municipalities discharging to the lower Fox River.	
Planning needs - Facilities plan review, reserve capacity, sewer service area implementation, preparation of necessary elements for facilities plans.	NO
NONPOINT SOURCES	
Urban runoff - Urban nonpoint source plan - Detailed plans and costs for selected communities generalized for the entire region. Monitoring of heavy metals will be needed.	COSTS
Rural runoff - Development of detailed subwatershed implementation plans for priority watersheds.	
TOXICS	
Development of urban nonpoint source plan. Includes monitoring of heavy metals.	SPECIFIED
RESIDUALS & SLUDGE MANAGEMENT	
Sludge planning - Inventory and analysis of existing and projected sludge production by point source dischargers.	
WATER QUALITY STUDIES	
Water quality monitoring - Wet weather data.	
Lake studies - Further study into the phosphorus/sediment exchange rate, water quality standards, rough fish removal for water quality benefits and other in-lake management techniques. Lake monitoring to gauge the effects of nonpoint source control efforts.	

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000) 80
WETLANDS	
Marsh and wetlands study - With the U.S. FWS and others. Feasibility studies in marsh and wetlands maintenance and reclamation for water quality benefits (Winnebago Pool Lakes area in particular).	NO COSTS SPECIFIED
SPECIFIC GREAT LAKES STUDIES	
See Water Quality Studies, "Lake studies" above.	

GENESEE-LAPEER-SHIAWASSEE REGION V
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

Since vast quantities of hazardous materials are used, transported and disposed of in the region, toxics were identified as a primary concern. Urban nonpoint source pollution of the Flint River is a major problem. Several agricultural problem areas have also been identified. Resolution of use conflicts at the Holloway Reservoir and determination of cost/benefits of site development versus costs of water quality protection are also stressed. These problems, in addition to public education and coordination of management activities, are the focus of GLS-V's Five Year Strategy.

Highlights/Great Lakes Concerns

The strategy focuses on specific problems which are to be studied comprehensively. Results of each study will be integrated. For example, toxic pollutants will be identified in the urban and agricultural nonpoint source studies as well as in the special toxics study.

Primary emphasis is placed on nonpoint source problems because point source problems "...are slowly but surely being corrected." The urban study will calculate pollutant loads from stormsewer discharges as well as from river bottom scour sources. The agricultural study is about a year ahead of similar agency programs, addressing pesticides as well as cropland and animal waste runoff. The Land Use study will determine the most cost-effective regional development in view of requirements for water pollution control.

GLS-V includes a study of atmospheric sources of water pollution in its proposed strategy. Additionally, the Holloway Reservoir study will assess nearby wetlands to determine their role in and effect on the reservoir ecosystem.

The water quality programs planned for the region -- urban and agricultural nonpoint sources, toxic materials, and atmospheric sources -- will address Saginaw Bay water quality -- a significant Great Lakes concern.

Overall, the strategy is clearly defined, with the emphasis on comprehensive analysis of the most serious problems.

GLS-V FIVE-YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Facility plan input and review.			35		
NONPOINT SOURCES					
Urban runoff -					
Urban nonpoint source study -			175		
Inventory land use with respect to stormsewer drainage areas.	X				
Identify unit loads and flows, including toxics.		X			
Identify river impact (wet weather sampling).		X			
Deduct bottom scour sources.		X			
Determine type and cost-effectiveness of treatment systems.			X		
Implement BMPs (over 50% of funding for this).			X		
Provide input to DNR on waste load allocations for the Flint River.			X		
Rural runoff -					
Agricultural nonpoint source study -					
Set up Rural Clean Water program.		X			
Provide RCW Program guidance, coordination and monitoring.			X		
Update model.			X		
Sample problem areas for sediment, nutrients and toxic residuals (including an inventory of toxic pesticides).				X	
Inventory toxics.				X	
Provide a map and report on PA 116 and its various spatial locations along with an inventory of farmlands.	X				
Study, expand data on animal density and problem areas.		X			
TOXICS					
Toxics study (financing through local and industrial funds with federal match) -		80			
Inventory toxic materials and disposal systems (industrial survey) and pretreatment needs.	X				
Analyze industrial data, compare magnitude with respect to other sources of toxics.		X			
Analyze feasibility of a private, cooperative waste materials reuse clearinghouse.	X				

GLS-V FIVE-YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
TOXICS (cont'd.)					
Urban nonpoint source study, and		--X--			
Agricultural nonpoint source study -				--X--	
Will both inventory related toxics (See above).					
Holloway Reservoir study -			--X--		
Determination of toxic loads.					
RESIDUALS AND SLUDGE MANAGEMENT					
Toxics study -	--X--				
Will include an inventory of disposal of toxic materials.					
WATER QUALITY STUDIES					
Holloway Reservoir study -	------	--150	----------		
Inventory/analyze future plans and existing investments in both recreational uses and water treatment plants.	--X--				
Determine cost-effectiveness of using the reservoir for recreation or for flow augmentation.		--X--			
Determine impact of agricultural nonpoint sources and municipal point sources on reservoir water quality through:					
nutrient and toxic sampling;			--X--		
determining the mass balance of nutrients and toxics over a year.			-X-		
Inventory and study surrounding wetlands to determine their role and effect on the reservoir ecosystem.				--X--	
Water Quality Studies are elements of the following specific studies:					
Nonpoint Sources, "Urban nonpoint source study",		---X----			
"Agricultural nonpoint source study",				----X-----	
Atmospheric Sources.			------	--X------	
LAND USE/POPULATION PROJECTIONS					
Land use study -				--75------	
Develop model for determining spatial cost-effectiveness of site development as it relates to water quality costs and facilities.				--X--	
Determine data needs sources, collect relevant data after literature review, identify parameter and likely sources for each parameter.					--X--

GLS-V FIVE-YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
LAND USE/POPULATION PROJECTIONS (cont'd.)					
Analyze data -					-X-
Conduct cost-effectiveness comparison of serviced and unserviced areas for equivalent increases in population.					
Determine population upper limit for unserviced areas and for wastewater treatment facilities on the Flint River at low and high flows.					
Modify regional land use plan.					-X-
Urban nonpoint study -	--X--				
See Nonpoint Sources, "Land use inventory", above.					
ATMOSPHERIC SOURCES					
Impact of atmospheric sources of pollution on water quality.			------	150-	-----
WETLANDS					
See Water Quality Studies, "Holloway Reservoir study", above.				--X--	
DREDGING					
No specific study. However, inplace pollutants will be addressed in Nonpoint Sources, "Urban nonpoint source study".		---X--			
SPECIFIC GREAT LAKES STUDIES					
None, but urban, agricultural, toxics and Holloway studies will all address Saginaw Bay (Great Lakes nearshore effects).					

NOTE: X = no cost specified.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

The following issues have been identified as requiring significant attention over the planning period: facilities planning, urban stormwater problems, agricultural nonpoint sources, lake water quality protection and restoration, and groundwater sources of pollution.

The initial 208 planning program provided an examination of the urban stormwater problems in eight metropolitan areas. Since the controls identified to reduce pollution problems were too expensive, additional studies are needed to assess the effectiveness of less expensive measures, as well as to examine the problems in other urban areas.

Soil erosion and sedimentation were identified as the major sources of agricultural nonpoint source pollution in the initial 208 studies. Other problems include fertilizers and pesticides tied to soil erosion and small feedlots.

Since Illinois presently has little chemical or physical lake data, 208 efforts will include a major data collection effort so that adequate problem assessments can be made. Groundwater data will be compiled and computerized so that problem assessments may be initiated.

Highlights/Great Lakes Concerns

A comprehensive monitoring program will be initiated in three agricultural watersheds to assess the impact of best management practices on nonpoint source pollution. The study is budgeted for the five year period at over $300,000 per year.

Although the funding accounts for only a small fraction of the proposed budget (0.5%), studies on atmospheric sources of pollution and their effect on water quality will be important for the Great Lakes.

The program is comprehensive and the individual studies are well defined. The funding levels for the industrial wastes/toxics programs (one percent of the total budget) and the air/water quality studies (0.5%) seem inadequate when compared to the magnitude of the programs designed to clean up and restore inland lakes (10%).

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Update water quality standards.		-------1,250------			
Facilities planning.		---------500------			
NONPOINT SOURCES					
Urban stormwater studies -		-------2,500------			
Examine effects of urban runoff; include sediment analyses, biological inventories, toxicity tests.	125	125	125		
Determine effectivness of optimized street-sweeping program (extensive monitoring in one urban area).	40	40	40	80	80
Develop stormwater plan taking combined sewers into account.			70	60	
Study relative impact of various pollution sources in a basin with complex water quality problems. Use to determine BMPs for various categories of pollution sources.				120	120
Agricultural sources -		-------3,750-------			
Monitor three project areas after installing land treatment and other BMPs.	317	328	329	329	329
Establish metal pesticide container recycling demonstration program.				140	90
Atmospheric sources -		------125---------			
Identify pollutants of water quality concern and inventory sources.	10				
Analyze air sampling data for possible use in water quality problem assessment (peak concentration, seasonal trends, chemical composition).	7	25	25		
Impact of air emissions upon water quality; quantify changes in water quality due to deposition of air emissions.	20				
Initiate improved sampling of air/water quality.		15			
TOXICS		---------250-------			
Inventory industrial dischargers.	25		15		
Monitor selected waterways to supplement limited data base for toxics.		35	15	15	
Assess impact of toxic materials on public health.		15			

ILLINOIS EPA FIVE-YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
GROUNDWATER		-------2,500------			
Inventory: waste and hazardous chemical storage sites, resource extraction sites, public water supply wells, abandoned wells, over pumpage areas.		200			
Study oil field brine migration through soils.		25			
Study groundwater contamination susceptibility by man-made toxic materials.		25			
Determine groundwater contribution to surface water, where background concentrations in groundwater are throught to be a source of surface water degradation.		25	75		
Effects of industrialization on groundwater quality.	60				
Determine areas suitable for disposal of wastes.		25	30		
Effects of land disposal on groundwater quality.		50			

INDIANA STREAM POLLUTION CONTROL BOARD
FIVE-YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

The state has prioritized 20 problem areas in the five year plan. Top priority is given to municipal point sources; industrial and semi-public dischargers; nonpoint sources, especially from agriculture, on-lot disposal, animal feedlots, combined sewer overflow events, and urban stormwater runoff; and waste sludge disposal.

Water Quality Management plans are also being developed for the nondesignated 208 areas of the state. Work elements for these plans include working maps of the planning areas, water quality assessment, land use and population forecasts, nonpoint source assessment, point source load allocations, and residual waste control needs.

Highlights/Great Lakes Concerns

No specific Great Lakes studies are proposed, although a master computer data bank containing all Indiana Stream Pollution Control Board and Department of Natural Resources data will be compiled for future use.

Ample funds appear to be available to address pollution problems from combined sewer overflows. This will be particularly important in the highly urbanized and industrialized northwestern area of the state, which for the most part is in the Lake Michigan watershed.

INDIANA SPCB FIVE YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Municipal point sources - Investigate and update municipal needs survey; work toward upgrading all primary treatment facilities in the state; wasteload allocation studies; implement primary project list.	1,474	1,544	1,559	1,623	1,496
Semi-public dischargers - Review plans for new facilities, prepare appropriate NPDES permits; inspect all dischargers.	65	72	78	86	94
NONPOINT SOURCES					
Agricultural - Establish and monitor BMPs.	4,645	1,125	4,550	4,550	4,550
On-lot disposal - Study alternative disposal practices; assist county health programs to implement alternative disposal systems; identify areas of septic tank pollution.					
Animal feedlots - Control and minimize pollution through improved management techniques and practices.	60	80	100	125	125
Combined sewer overflow - Step 1,2,3 grants for sewer system rehabilitation and combined sewer overflow projects.	29,096	8,348	53,138	57,756	60,552
Urban storm runoff - Determine impact of typical municipal system in storm event.			100		
Mining nonpoint source - Identify streams impacted by mine drainage; assess alternative control mechanisms.	587	665	1,207	756	869
Silvicultural nonpoint source - Assess problem areas and evaluate BMPs as applied to silvicultural activities.	150	200	150	150	150
Landfill leachate - Maintain and expand groundwater monitoring program; phase out geologically poor sites and open dumps; enforce operational quality standards.	718	650	600	700	700

INDIANA SPCB FIVE YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
RESIDUALS AND SLUDGE MANAGEMENT					
Resource Conservation and Recovery Act (RCRA)- Develop hazardous waste program; inventory municipal sludge; impacts of disposal; develop municipal sewage treatment plan and industrial sludge control program.	672	908	1,080	1,240	3,470
TOXICS					
Develop toxic pollutant control program associated with industrial pollutants.	874	924	873	873	
GROUNDWATER					
See Nonpoint Sources, "Landfill leachate", above.					

MICHIANA AREA COUNCIL OF GOVERNMENTS
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

Four areas were identified as "weak" in the Michiana Area Council of Government's (MACOG's) existing water quality plan: nonpoint source evaluation, combined sewer overflow problems, groundwater management, and assessment of water quality standards. Projects have been designed to address these areas and to be completed in a one year period.

MACOG's ongoing plan implementation program will address the following water quality problem areas: municipal and semi-public point source discharges; urban stormwater runoff; animal feedlots; and dredged spoil disposal.

Highlights/Great Lakes Concerns

The final plan will suggest management solutions to eliminate, or at least reduce, the impact of pollution problems in the region. However, the strength of the overall management scheme and its successful implementation will be almost entirely dependent upon the voluntary cooperation of the 103 management agencies designated by MACOG. No specific Great Lakes studies were proposed.

MACOG FIVE YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Municipal point source discharges - Complete facilities; coordinate 208/201 review; technical assistance to communities.	12,344	33,069	7,899	78	5,719
Semi-public discharges - Upgrade facilities; review permits.	8	57	7	8	9
NONPOINT SOURCES					
Monitor and assess the impact of nonpoint source pollution -					
Agricultural nonpoint source - Produce erosion potential data.	10	5	5	6	6
Construction nonpoint source.	10	5	5	6	6
Landfill leachate - Groundwater management program.	9	5	5	5	6
On-lot disposal - county program.	75	79	83	87	95
Animal feedlots.	4	5	5	5	6
Urban storm runoff - Develop master drainage plans; monitoring evaluation and connection of pollutant sources.	--	427	427	427	62
Combined sewer overflow - Evaluate problems, devise abatement needs; municipal programs funded through EPA 201 construction grants.		50	69,263	69,263	69,263
RESIDUALS AND SLUDGE MANAGEMENT					
Waste sludge disposal/reuse - Monitor sludge disposal practices; establish permit system for sludge disposal.	10	25	5	5	6
GROUNDWATER					
See Nonpoint Sources, "Landfill leachate", above.					
DREDGING					
Coordinate through nonpoint source evaluation.	4	5	5	5	6

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 80-84

Major Problems/Program Emphasis

Potential pollution sources were assigned priorities by considering: type of pollutant involved (potential relative harm), severity of pollutant problem, geographic or time extent of problem, and whether adequate controls for the pollution source are in place. Areas of greatest concern (high priority) include the following: toxic and hazardous materials disposal; industrial discharges to surface waters, ground waters, and municipal treatment systems; impacts from solid waste disposal; spills to land and to surface and ground waters; and fallout to land and surface waters from air emissions.

Highlights/Great Lakes Concerns

Several upcoming studies are directly related to the Great Lakes environment. A Great Lakes Environmental Contamination Survey will be conducted to analyze toxic contaminants in Great Lakes fish. Biological surveys will be conducted to determine the impact of wastewater discharges on surface waters. The impact of power plant discharges on water quality will be identified and quantified. Selected problem areas will be investigated for toxic pollutants in lake sediments.

The program developed by the Michigan DNR is both well-defined and comprehensive. It includes Great Lakes', inland lakes', and rivers' water quality concerns. Summaries of regional planning agencies' five-year plans are included in the document.

MDNR FIVE YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000) 79	80	81	82	83
POINT SOURCES					
Industrial wastewater discharges to surface waters - Achieve adequate reduction of pollutants from industrial wastewater discharges to maintain the biological integrity of waters and provide for recreation by 1983. Includes discharge permits, effluent limits, facility inspections, wastewater surveys, biological surveys, enforcement.	2,063	2,327	2,690	4,346	4,651
Industrial discharges to groundwater - Includes inventory of lagoons, pits, ponds; monitoring capabilities; hydrogeologic surveys; facility inspections; programs for remedial action; enforcement.	969	1,023	1,234	1,334	1,460
Discharge from municipal treatment facilities - Reduce phosphorus discharges; prevent discharge of toxics at harmful concentrations; upgrade wastewater treatment plants not complying with EPA levels; improve technical ability of treatment facility operators; evaluate lab facilities; survey dischargers; other programs.	4,306	4,771	5,595	5,845	6,300
Industrial discharges to municipal treatment systems - Implement an industrial pretreatment program by 1983.	1,096	1,196	1,288	1,615	1,728
Discharge from mineral and hydrocarbon well activities - Enforce regulations; monitoring; assume primacy for underground injection control.	1,957	2,638	2,948	3,289	3,663
NONPOINT SOURCES					
Combined sewer overflows - Develop departmental strategy to correct combined sewer overflows in 1981.	28	45	6	6	7
Stormwater runoff from industrial sites - Prioritize sites where runoff impacts surface waters by 1981; require stormwater management plans.	184	194	156	155	125

MDNR FIVE YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000) 79	80	81	82	83
NONPOINT SOURCES (cont'd.)					
Urban stormwater runoff - Study impacts and develop strategy for control.	49	52	72	8	8
Sedimentation from construction activities - Implement statewide erosion control program.	177	187	207	215	230
Agricultural runoff - Provide statewide strategy for control of nonpoint source pollution from agriculture.	47	17	125	133	142
Runoff and leaching from mining operations - Enforcement of mine reclamation rules; vegetation research; amend legislation.	183	269	211	240	274
TOXICS					
Impacts of improper disposal of toxic wastes - Assist in completing a hazardous waste management plan; aid in facility siting; review plans for hazardous waste facilities; implement manifest system; license facility to operate; use cleanup fund for emergencies; enforcement; provide technical assistance; conduct Great Lakes Environmental Contaminants Survey; develop data base containing information on rates of degradation of various hazardous wastes by physical, chemical, biological processes.	2,632	2,412	2,253	2,353	2,439
Construct a state-owned hazardous materials disposal facility.	66,730				
Spills to land, surface and ground waters - Implement improved spill prevention and response program; propose new legislation to provide improved transportation and storage controls of hazardous wastes.	877	1,052	1,088	1,166	1,258
Toxic pollutants in stream and lake sediments - Investigate problem areas; conduct water quality sampling and analysis; initiate cleanup if necessary.	279	297	340	310	332

MDNR FIVE YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
RESIDUALS AND SLUDGE MANAGEMENT					
Pollutant impacts of solid waste disposal - Inventory and surveillance of open dumps; initiate remedial action where necessary; monitor ground water; institute construction permit program.	1,687	1,333	1,466	1,584	1,695
Impacts from industrial sludge disposal sites - Identify and correct existing problem sites; conduct hydrogeologic studies.	332	324	361	362	389
WATER QUALITY STUDIES					
Ambient water quality monitoring; biological monitoring; evaluate pollution control efforts; lab analysis; data processing.	1,569	1,710	1,892	2,025	2,167
Construct new laboratory facility - increase analytical capability for toxic materials.	710	6,525	490	533	576
GROUNDWATER					
See Point Sources and Toxics above.					
ATMOSPHERIC SOURCES					
Fallout to land and surface waters from air emissions - Identify and quantify emission constituents impacting water quality.	139	174	153	158	169
DREDGING					
Impact of dredging activities on surface waters - Provide funds for state program management of Fed. 404 Program and State Act 346; establish permit process; emphasize control of toxic hazards.	845	993	1,087	1,168	1,257

MINNESOTA POLLUTION CONTROL AGENCY
DETAILED WORK PROGRAM FOR WATER QUALITY MANAGEMENT[1]
FY 1980

Major Problems/Program Emphasis

The major activities developed for the Minnesota plan correspond closely to the functional sections of the Division of Water Quality. Current emphasis continues to be focused on problems resulting from point sources of pollution. Nonpoint sources and control of toxic substances will be given higher priority over the next five years. Increased emphasis will be given to assuming principal responsibility in the state for implementation of the Clean Water Act of 1977.

Highlights/Great Lakes Concerns

The state's water pollution control efforts through the NPDES permit program will focus on control of toxic discharges. Pretreatment and toxic control programs were developed by the state during FY 1979. All municipal sewage treatment facilities with industrial contributor problems are required to begin developing their own pretreatment programs.

The water quality objectives established in the Great Lakes Water Quality Agreement of 1978 for Lake Superior waters will be reviewed and evaluated. If the objectives are more restrictive than the recommendations by the Water Quality Standards Development Workgroup, they may be recommended for adoption.

A toxic substances monitoring program will be established, with three National Fixed Stations (NFS) to be located in the Lake Superior basin. Monthly samples of water quality parameters, yearly biological samples, and yearly sediment and whole fish samples for toxic substances analysis will be collected. Resulting data will be entered in STORET.

The program's strength is that it focuses agency resources on a few problem areas, especially those related to point sources (permit program, compliance and enforcement, and facilities construction). Overall program expenditures are presented here, but there is no breakdown for specific projects.

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1. Minnesota's Five Year Strategy will be contained in the State Water Quality Management Plan as the management framework. The Water Quality Management Plan was unavailable at the time of this review.

MPCA DETAILED WORK PROGRAM

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000) 80
POINT SOURCES	
Administer facilities construction grant program -	
Step 2 projects with innovative/alternative technology.	400
Step 3 projects.	4,700
Provide technical/training assistance to municipalities.	
NONPOINT SOURCES	X
Implement nonpoint source management programs to reduce nonpoint source pollution to the greatest extent possible.	
Develop data base to support implementation of management programs.	
Priority areas:	
Agriculture - develop 5 yr. small watershed project to assess impact of agricultural runoff.	
Urban runoff - develop monitoring and analysis program for urban runoff.	
Mining - develop monitoring program; determine water quality impact of mining leachate; evaluate effectiveness of management practices.	
WATER QUALITY STUDIES	
Establish water quality monitoring program.	X
Water assessment: develop new water quality management classification system; assess all waters receiving point source discharges.	
Regulation development: revise effluent standards.	
TOXICS	X
Establish toxic substances monitoring program.	

NOTE: X = no cost specified.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT

Major Problems/Program Emphasis

EPA and the State of New York have evaluated activities in the state which cause serious water quality problems, and have agreed that six are statewide priorities: industrial discharges, municipal discharges, combined sewer overflows, urban storm runoff, residual wastes, and man-made modifications to waterways. Particular attention will be focused on control of toxic substances from the above sources.

Highlights/Great Lakes Concerns

No specific Great Lakes studies are mentioned in the summary report. A copy of the detailed five year strategy was not available at the time of this review.

Increased emphasis will be placed on a more holistic approach to the municipal waste treatment facility planning process. This includes coordination, during the project development phase, with environmental protection needs, pretreatment and water conservation strategies, and use of innovative and alternative technologies.

Control of toxic substances is emphasized for each pollution source addressed in the report. Proposed methods of achieving adequate control of toxics include: increased funding for research, strict permitting and monitoring programs and industrial pretreatment of influent.

A comprehensive residuals management plan has been prepared for legislative approval. Provisions will be made for the management of residual waste operations by local governments. Funds will be sought to construct processing plants, and markets will be developed for the sale of recovered materials.

Based on information in the five year agreement summary, New York's plan appears very comprehensive. The agreement assumes that the level of public funding available to New York for water quality management will not only continue, but increase, particularly to develop and implement new program elements.

NYSDEC FIVE-YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Industrial discharges and toxics -					
Identify industries discharging the high priority pollutants as established by EPA.					NO
Expand research activities on toxic substances.					
Expand data gathering activities through the statewide industrial chemical survey.					
Give priority to toxic substance control in state permit and monitoring programs.					
Develop a comprehensive state pretreatment strategy.					
Municipal waste treatment -					
Refine state's 20 year projected wastewater treatment needs in communities throughout the state.					
NONPOINT SOURCES					
Combined sewer overflows -					COSTS
Develop a strategy to deal with combined sewer overflows.					
Identify combined sewer systems where improvements are most urgently needed.					
Investigate alternative sollutions, including BMPs which can reduce the amount of dangerous pollutants entering the sewer system after a rain event.					
Urban storm runoff -					
Develop comprehensive strategy to deal with these problems including both structural and nonstructural BMPs.					
Utilize work being done under the Statewide 208 Urban Runoff Study to identify and map problem areas and to quantify the effects of this source type relative to other sources.					
Other nonpoint sources -					
Utilize federal grant program to assist rural land users in installing BMPs for nonpoint source pollution control.					SPECIFIED
Develop management program and coordinate with other state agencies - initial focus in areas of agriculture, forestry, mining, and construction.					
Continue statewide assessment of magnitude and geographic extent of nonpoint problems.					
RESIDUALS AND SLUDGE MANAGEMENT					
Implement resource recovery program now being developed.					
Coordinate groundwater information collected by several agencies to find out amount and type of groundwater contamination in the vicinity of disposal sites.					
Monitor disposal sites regularly.					
GROUNDWATER					
See Residuals and Sludge Management above.					

NORTHEAST ILLINOIS PLANNING COMMISSION
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

Pollution from nonpoint sources was identified as the major water quality concern, with further study proposed in the areas of urban stormwater problems, agricultural runoff and soil erosion, and groundwater contamination of streams. Citizens have expressed a strong desire for inland lake water quality protection and restoration for recreational purposes. Public participation, information and education is emphasized. Slow facilities planning, costs of new facilities, and the unwillingness of communities to work together for solutions to sewage problems are major concerns.

Highlights/Great Lakes Concerns

The Lake Michigan coastline is to be studied after a rain event using infrared imagery. By analyzing water temperature differentials revealed by the imagery, the various points of entry of stormwaters draining into the lake can be identified. Field investigation will identify exact locations, size of conduits, tributary areas, and other information needed to quantify the yearly volumes contributed at each point.

Other programs will include updated inventories of wastewater systems; demonstration projects utilizing detention basins, wetlands, and street cleaning to alleviate urban stormwater runoff; and monitoring toxics, pesticide use, and heavy metals.

The study is well-organized, with needs and objectives clearly defined. It appears to be well-funded for the five year period.

NIPC FIVE YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Project and permit reviews - Review 201 facilities plans and NPDES permits. Related reviews by county-wide water quality committees and management agencies.	20	22	24	26	28
Completion and reexamination of 201 facilities plans - Review facilities plans/consistency with assumptions in 208 plan.	35	27	20	15	15
Update inventory of wastewater systems - Public and private, agricultural and industrial.		10	11	12	13
NONPOINT SOURCES					
Urban stormwater runoff studies - Summarize washoff data collected by MSDGC; complete Lake Michigan-South Basin Plan; develop guidelines and directions on urban stormwater for county water quality committees; draft model ordinances for stormwater detention and erosion and sedimentation control for land disturbance activities; demonstration projects-detention basins, street cleaning, wetlands, performance zoning, etc.; cost/benefit analysis of BMPs for control of urban stormwater pollutants; handbook on street salting; use of remote sensing to identify points of entry draining into Lake Michigan.	450		25		
Pilot demonstration projects on agricultural pollution control - Develop materials balance, use that to identify source control strategies; evaluate BMPs; establish priorities for implementation of BMPs.	38	50	50	50	50
Extension of soil erosion studies - Lake Michigan watersheds will not be studied at this point, but model developed may be useful in other basins.	27	25	10		
TOXICS					
Study toxics, pesticides, heavy metals - Cooperate with IEPA on toxic index; toxic monitoring; recycling demonstration program; pesticide use survey; locating hazardous wastes storage site.		NO FUNDING SOUGHT			
Waste oil collection, recycling, and reuse program - Provide guidance for the enactment of local recycling programs.			20	5	

NIPC FIVE YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
RESIDUALS AND SLUDGE MANAGEMENT					
Preparation of septage disposal plan - Positive and negative aspects of septage disposal options; identify disposal areas.	30	10			
Complete residuals disposal plan - Plan for disposal of sludge generated at water treatment and wastewater plants.				150	
WATER QUALITY STUDIES					
Develop and implement prototype water quality monitoring program - Coordinate data collection from various agencies.	25				
Ongoing water quality monitoring program.	25	30	35	40	45
Model recalibration - Resolve uncertainties in initial modeling work; update with data collected in monitoring program on basin-by-basin basis.	50	55	60	130	140
Develop refined stream classifications - Supplement initial planning program information to classify reaches for functional uses.		25			
Evaluation of future water quality conditions against emerging new stream classification and water quality standards.		25			
Study interfaces between water quality and flooding, dams, hydrologic modification and water supply.		20			
Test several basins - Apply model to assess costs incurred in meeting all water quality standards.		50	50		
Verify water quality model - Two years new data from monitoring.			25		
Study impact of flood plains on water quality.			20		
Study nutrient cycle - Results will be used to more accurately predict the conditions that cause algal blooms.		35			
LAND USE/POPULATION PROJECTIONS					
Update population forecasts - Develop subregional forecasts of population, employment, land use, waste loads, and flows.	8		15		25
ENERGY					
Energy needs of water quality management systems - Determine total energy tradeoffs among various treatment processes; energy savings through different operating procedures.		35			

NIPC FIVE YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
WATER CONSERVATION					
Water conservation and reuse - Research opportunities for conservation and reuse; impact of programs on design and efficiency of wastewater treatment plant.	6	30			
WETLANDS					
See Nonpoint Sources, "Urban stormwater runoff studies", above.					
SPECIFIC GREAT LAKES STUDIES					
See Nonpoint Sources, "Using remote sensing to identify points of entry of stormwaters draining into Lake Michigan", above.					

NORTHEAST MICHIGAN COUNCIL OF GOVERNMENTS
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

The Northeast Michigan Council of Governments (NEMCOG) assigned high regional priority to three pollutant sources: surface runoff from agricultural and other land use activities; discharges from septic systems; and toxics in lake and stream sediments. Other concerns include urban stormwater runoff, discharges from combined sewer overflows, and pollutant impacts from solid waste disposal.

Highlights/Great Lakes Concerns

There are no projects specifically concerned with any of the Great Lakes.

Funding seems inadequate for studies which cover an area as large as the NEMCOG region. The Michigan DNR questions the high priority rating given to toxic sediments in this region. They also feel several activities under "Industrial wastewater and commercial discharge to groundwater" may duplicate activities carried out by the state.

NEMCOG FIVE-YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Review new facilities planning documents; review municipal expansions for conformance with management plan.		5	5	4	4
Industrial wastewater and commercial discharges to groundwater - survey small industries for discharge volumes and treatment types.		6	1		
Identify existing or potential problem areas.		6	10	4	
Correct problems and monitor corrective efforts.		1	2	2	2
NONPOINT SOURCES					
Identify agricultural runoff problem areas; undertake monitoring and sampling program.		6	20	10	3
Identify urban stormwater runoff problems and establish corrective measures.		5	8	8	8
Identify combined sewer overflow problems and establish corrective measures.		5	5	6	2
Identify, inventory and monitor old and existing landfill sites; design strategies to correct problem sources.		15	15	15	
Prioritize nonpoint source problems in the region; determine location, source of problems; implement corrective strategies.		15	15	10	8
TOXICS					
Identify toxics problems and take corrective action.		6	6	3	
GROUNDWATER					
See Point Sources above.					
WETLANDS					
Promote sound management and wise use of wetlands.		4	4	4	4

NORTHEAST OHIO AREAWIDE COORDINATING AGENCY
FIVE-YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

Small (less than 25,000 gallons/day) package plant discharges are identified as significant sources of pollution because they are often not properly maintained or are inoperative. In addition, about half of the 140,000 Northeast Ohio Areawide Coordinating Agency (NOACA) home sewage systems are failing. Other significant problems include industrial hazardous wastes and pollution from rural runoff. In nearly all cases, existing data is inadequate and the extent and nature of problems need to be fully defined. In particular, urban stormwater runoff problems need to be identified.

Based on projected expenditures, major emphasis appears to be on problem identification, evaluation of BMPs, and development of an abatement program for urban stormwater systems; development and maintenance of a comprehensive water quality data base; public participation programs; wastewater treatment facilities planning; and finally, residuals management, especially municipal sludge and industrial hazardous wastes.

Highlights/Great Lakes Concerns

The following work elements are of special interest: determination of air quality effects of wastewater treatment projects and related development; identification of airborne pollutants in urban stormwater runoff; development of small (less that 25,000 gallons/day) package plant policies; development of a comprehensive water quality data base that includes Lake Erie nearshore monitoring and siting of disposal operations for industrial hazardous wastes. The rural runoff control program has been coordinated with the Lake Erie Wastewater Management Study.

NOACA's Five Year Strategy is well defined and organized. Each work element is defined by issue/problem, program objectives, scope of work, coordination with other programs, federal/state policy assumptions, costs and year of implementation.

NOACA FIVE-YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Planning for wastewater treatment facilities needs - 201/208 coordination, facility planning assistance, and planning for small communities.	70	85	85	85	85
Air quality effects of wastewater treatment projects and related development.	53	38	30	30	30
Package plant (less than 25,000 gallons/day) policy development.	28	8	8	8	8
NONPOINT SOURCES					
Urban stormwater systems -					
Problem identification.	250	250			
BMP evaluation.			300	50	
Review river basin level control plans and implementation programs.	20	10			
Develop abatement program.		10	30		
Developing area stormwater systems -					
Provide technical assistance, education, and water quality information to county and local governments.	68	68	68	23	23
Rural systems (especially sedimentation from agricultural activities) -					
Problem identification/prioritization.	60				
Identification of BMPs and formulation of management plans.		30			
Implementation of BMPs and management plans.			30		
Technical information and monitoring.			30	30	30
TOXICS					
Industrial hazardous wastes -					
Sewered site disposal (costs financed primarily through RCRA, OEPA, or private facility operator).					
Chemical landfill research and development -	X				
Siting selection and development of secured landfill.	X	X	X		
Provide technical support in site and waste characterization to estimate long-term stabilities and leaching properties.	X	X	X		
Establish monitoring wells and surface water sampling stations.	X	X	X	X	X
Waste oil control program.	110	110	5		
Waste generation information and related programs (for details see Residuals and Sludge Management).					

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
RESIDUALS AND SLUDGE MANAGEMENT					
Sewage treatment plant residuals program -					
Cost-effective methods -					
Sludge treatment and disposal analyses.	10	10			
Technology transfer and land application demonstration projects.	150	150			
Industrial hazardous wastes program - including site disposal and waste oil (See Toxics).					
Waste generation information and related programs -	65	40	20	10	10
List haulers/disposers for Lake Erie drainage basin, inventory wastes and disposal location.					
Inventory drinking water plant sludge, sites and projections and recommend proper disposal.					
Work with pretreatment agencies to determine residuals generated from pretreatment controls and assure proper disposal.					
Home sewage systems control program -					
Technical assistance in establishing county control programs.	14	14			
Technical assistance in identifying nature and extent of potential problem areas.	14	14			
Assist management agencies in devising implementable strategies.		14	14	14	14
WATER QUALITY STUDIES					
Basic technical program -					
Water quality data base development -					
Update/expand "Analysis of Stream Habitats" (fish census) program to develop biological baseline.	25	30	35	20	20
Determine hydrologic characteristics of major area rivers.	25	25	15	5	5
Identify instream sedimentation drainage areas and sources.	20	10	10	5	5
Update "Precipitation Data and Analysis" on a 5 year basis.					10
Inventory aquatic plant life.		15	15	5	
Develop computerized areawide water quality data base.	10	10	15	15	25
Special investigations -					
Section 314 Trophic Lakes Assessment.	25	25	25	25	25
Analyze and refine Lake Erie Nearshore Monitoring Program.		15	15		
Perform water quality index for Cuyahoga Valley National Recreation Area.	10	10	10		

NOACA FIVE-YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
LAND USE/POPULATION PROJECTIONS					
Demographic and land use update -					
Review and modify assumptions for projections.	25	25	25	25	25
Provide input to population model and operate model.	5	5	5	5	5
Update areawide land use inventory.	10				
Rural land cover survey update -			10		
Triannual, with SCS: (Element of water quality data base development program).					
ATMOSPHERIC SOURCES					
Airborne pollutant loads in stormwater runoff.	X	X			
See also Point Sources, "Air quality effects of wastewater treatment projects and related development."					
ENERGY					
See "Waste oil control program" under Toxics.					
WETLANDS					
Technical assistance to local governments -					
(See "Developing area stormwater systems" under Nonpoint Sources).					
Water quality review and maintenance programs -	X	X	X	X	X
Identify critical water resource areas in need of preservation.					
SPECIFIC GREAT LAKES STUDIES					
Analyze and refine Lake Erie Nearshore Monitoring Program -					
(See Water Quality Studies, "Special investigations").					

NOTE: X = no cost specified.

NORTHWEST INDIANA REGIONAL PLANNING COMMISSION
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

Three main problem areas were identified: point source waste management, nonpoint urban runoff, and nonpoint rural runoff. High priority is given to the Grand Calumet, Little Calumet, Kankakee, and Cedar Creek watersheds for point source management. The Grand Calumet and Little Calumet will also be analyzed in detail for nonpoint urban problems. Monitoring and assessment of water quality/quantity conditions will be continued to keep waste load allocations reflective of current conditions.

Highlights/Great Lakes Concerns

The only specific Great Lakes study involves an assessment of the impact of the Indiana Harbor Ship Canal (IHSC) discharges on Lake Michigan. After Lake Michigan, the IHSC is the most important waterway in northwest Indiana due to the complex of industries utilizing this waterway for discharge. Its low flow makes it difficult to maintain high water quality.

The Northwest Indiana Regional Planning Commission (NIRPC) realizes that a viable management/planning process is a prerequisite to any substantial technical progress. As a result, they have focused their technical studies on one major problem area (point source waste management) and have allocated significant funding (34%) over the five year period to the management/planning process, including public participation and education.

NIRPC FIVE YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Wastewater monitoring -	16	20	20	20	20
Facilities monitoring - locations, sizes of sanitary, combined and storm sewers; wastewater treatment plants; sludge treatment and disposal facilities.					
Water quality monitoring - maintenance of files on water quality, permit limitations, effluent characteristics, nonpoint sources, flow conditions and lake water quality.					
Grand Calumet River waste load allocation -		506			
Replace waste load allocation completed in 1974. Update inventory of dischargers. Determine future waste flows. Calibrate and verify computer model. Assess impact of Indiana Harbor Ship Canal discharges on Lake Michigan.					
Little Calumet River waste load allocation study -	256				
Water quality sampling (wet and dry weather). Calibrate computer model.					
Kankakee River Basin/Cedar Creek Watershed -		15			
Waste load allocation study.					
NONPOINT SOURCES					
Nonpoint rural runoff analysis -	50	60			
Develop rural runoff study to evaluate impacts of land use types on receiving streams. Develop load reduction study in order to generate control measures necessary for improved water quality. Develop computer data base.					
Urban runoff analysis -					
Grand Calumet river basin -			124		
Develop load reduction study to evaluate impacts of urban runoff and combined sewers on receiving streams. Evaluate environmental benefits from combined sewer abatement projects for Hammond, E. Chicago, and Gary.					
LAND USE/POPULATION PROJECTIONS					
General development monitoring -	X	X	X	X	X
Review annually and refine, as necessary, land use forcasts.					
Prepare up-to-date air photo coverage of region.		X			
Land use inventory update.			X		
Review annually and refine, as necessary, population forecasts.	X	X	X	X	X
Assess 1980 census data.			X		

NOTE: X = no cost specified

NORTHWEST MICHIGAN REGIONAL PLANNING AND DEVELOPMENT COMMISSION
FIVE-YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

The primary focus of the five-year strategy for the clean water program is inland lakes management. This is considered to be "one of the region's top water quality concerns." Also addressed are groundwater contamination and urban-suburban stormwater discharge.

Groundwater contamination is a priority because 90% of the population receives water from groundwater aquifers. Nitrate contamination, oil drilling and disposal of oils and solvents were listed as significant contributors to groundwater contamination.

Urban-suburban stormwater discharges into streams and lakes is a source of sediments, nutrients, oxygen-consuming materials and other deleterious elements. These discharges pose problems to public beaches. Grand Traverse Bay has received significant discharges of bacteria and nutrients.

Highlights/Great Lakes Concerns

The strategy inventories a comprehensive list of potential nonpoint sources of pollution, unlike most plans which target only very specific problems. Included are extractive site runoff, forestry activities, and dredge/fill activities, in addition to the more common urban stormwater and agricultural runoff problems. The Great Lakes are primarily addressed in terms of land use effects on Grand Traverse Bay, although no special study of the Bay is planned. The lakes are also addressed through studies of vessel discharge, dredging, and filling. Toxic substances control, wetlands preservation and energy issues are not highlighted.

The proposed work program is well organized and includes schedules and annual costs for each element throughout the five-year period. Although the anticipated products are identified, they are written in general terms. Quantified objectives are not included for measuring overall success of the strategy.

NMRPDC FIVE YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Point source discharge problem identification and management strategies.					6
NONPOINT SOURCES					
Urban-suburban stormwater problem identification and management strategies.	14				
Construction activities problem identification and management strategies.			8		
Agricultural activities problem identification and management strategies.				4	
Extractive sites problem identification and management strategies.				4	
Forestry activities problem identification and management strategies.				4	
Vessel discharges problem identification and management strategies.					6
Solid waste sites problem identification and management strategies.		12			
Groundwater pollution problem identification and management strategies.	14				
RESIDUALS AND SLUDGE MANAGEMENT					
Municipal and septic tank sludge problem identification and management strategies.			12		
WATER QUALITY STUDIES					
Inland lakes management and water quality monitoring coordination.	8	10	10	10	10
Stream water quality monitoring coordination.	1	3	5	5	5
Groundwater monitoring coordination.	1	3	5	5	5
GROUNDWATER					
See Nonpoint Sources and Water Quality Studies above.					
DREDGING					
Dredge and fill activities problem identification and management strategies.			8		
SPECIFIC GREAT LAKES STUDIES					
See Nonpoint Sources, "Vessel discharges", and Dredging above.					

OHIO ENVIRONMENTAL PROTECTION AGENCY
WATER QUALITY MANAGEMENT DETAILED WORK PROGRAM
FY 79-80

Major Problems/Program Emphasis

The main problem areas to be addressed include municipal and industrial point source needs and regulatory programs; nonpoint source control, including urban and industrial stormwater control; residual waste control needs; and controlling the discharge and placement of dredged or fill material. Land use inventories, demographic and economic data and projections, and waste load allocations will also be developed.

Highlights/Great Lakes Concerns

A work element of interest in the municipal point source program involves investigating the benefits of water conservation and determining if a water conservation program could forestall or eliminate the need to expand waste treatment facilities. Water supply and conservation strategies recommended by the Great Lakes Basin Commission's draft Great Lakes Basin Plan will be considered for inclusion in Water Quality Management basin reports.

A biological monitoring program to assess water quality conditions is being developed. Representative fish species groups will be established and water quality standards will be based on these groupings on a stream segment-by-segment basis. No specific Great Lakes projects are mentioned.

The program appears comprehensive and well defined, except for the lack of any specific toxics or hazardous waste program. However, the problem area may be addressed under another branch of the Ohio state government. Funding for the agricultural component of the nonpoint source work element ($76,000) seems inadequate for the two year period.

OHIO EPA - DETAILED WORK PROGRAM

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000) 79	80
POINT SOURCES		
Establish guidelines for programs; update information on type and number of industries discharging to sanitary sewers; assist municipalities.	151	
Analyze effect of municipal and industrial water use on waste flows to sewage treatment plants and water supply withdrawal on stream flow. Determine how water conservation measures might change these effects.	23	
Determine impact of water conservation alternatives for small communities which might forestall sewage treatment plant enlargement and/or decrease waste loads to sewage treatment plants.	39	
Inventory 201 facilities plans; identify areas for facilities planning; integrate 208 and 201 planning at the basin level.	165	
Combined sewer overflows: inventory; cost-effectiveness of remedies; make recommendations for combined sewer overflows.	192	
Determine most cost-effective means of abating water pollution from municipal and industrial wastewater systems; analyze alternative financing methods for local governments.	43	
NONPOINT SOURCES		
Urban and industrial stormwater: develop statewide data base and modeling techniques to assess water quality impact of runoff; cost-effectiveness analysis of alternatives for control; recommend control techniques.	237	
Develop an ongoing mechanism for an agricultural liaison to work with the various agricultural agencies and organizations throughout the planning process.	45	
Identify existing and/or potential nonpoint source pollution areas; establish intensive monitoring programs; identify and prioritize possible watersheds for intensive study; calibrate nonpoint source model for Ohio.	165	
Analyze cost-effectiveness of agricultural BMPs; recommend best BMP for each basin planning area; develop management alternatives for implementing agricultural component of State Water Quality Management Plan.	76	
Construction activity: establish programs to control soil erosion resulting from construction activities in priority counties.	15	
On-lot disposal: assess water quality problems associated with on-lot systems; recommend alternatives.	38	
Mining: establish drainage monitoring program to prioritize future reclamation projects; implement intensive analysis of biological and chemical impacts for selected stream segments.	116	

OHIO EPA - DETAILED WORK PROGRAM (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000) 79	80
RESIDUALS AND SLUDGE MANAGEMENT		
Develop procedure for projecting and surveying the amounts and constituents of residuals which result from air and water pollution abatement systems.	13	
WATER QUALITY STUDIES		
Collect and summarize water quality information for each basin.	110	
Prepare and apply a dynamic water quality planning model projecting loads for all state stream segments.	27	
Initiate biological monitoring program to assess water quality conditions and effectiveness of efforts to control point and nonpoint sources of pollution; establish representative fish species groups upon which to base water quality standards on a segment-by-segment basis.	142	
Produce cohesive stream network file for all streams, dischargers, water supply intakes, stream physical data, monitoring information, and other special features.	25	
Develop waste load allocations for all water quality limited segments.	672	
LAND USE/POPULATION PROJECTIONS		
Revise and refine all inputs to Ohio's land based data system (PEMSO) including land use, sewer service areas, population, and housing.	X	X
DREDGING		
Identify problems of current permit programs; design regulatory program for state; establish BMPs as applied to dredge or fill operations.	29	

NOTE: X = no cost specified.

REGION II PLANNING COMMISSION
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

Pollution from solid waste disposal sites and agricultural lands were identified as potentially significant problems. The location of specific problem areas has not yet been determined. Based on program strategies and expenditures, other major areas of concern include inland lakes management, sewage sludge disposal and stormwater control.

Highlights/Great Lakes Concerns

Region II places great emphasis on residuals management. Three elements are specifically involved: on-site and alternative wastewater treatment systems; sewage sludge strategies; and solid waste needs and alternatives. Energy issues are addressed under the solid waste project. Wetlands are a major concern in the environmental areas strategy. Water supply/water quality relationships will be addressed under the agricultural study. Irrigation systems that draw substantially from streams (particularly the Grand and St. Joseph Rivers) will be identified and their impact on water quality evaluated.

Point sources (except for alternatives to conventional facilities), atmospheric sources, dredging, and specific Great Lakes problems are not addressed.

Although brief and low-cost, the five-year strategy is well defined. The Work Program for FY 1979 is particularly descriptive, identifying objectives, procedures and results.

REGION II PLANNING COMMISSION
FIVE YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
NONPOINT SOURCES					
Urban runoff -					
Stormwater control needs -	2	3	2	54	2
Includes detailed feasibility studies for the construction of sediment catch basins and development of the most cost-effective control package.					
Rural runoff -					
Agriculturally related water pollution -					
Identify problem areas, water quality impacts and extent, assess effectiveness of BMPs.	3				
Apply remedial measures to critical areas and continue evaluating effectiveness of BMPs.		3	2	2	2
RESIDUALS AND SLUDGE MANAGEMENT					
On-site and alternative wastewater management -	5	3	4	4	2
Includes examination of alternative and innovative waste treatment systems, especially for use in sensitive areas, and technical assistance.					
Sewage sludge strategies -					
Feasibility study for centralizing lab facilities.	15				
Implement feasible alternatives for lab centralization.		7	54	2	2
Study centralized sludge management and reuse (RCRA).					
Initiate efforts to study and establish alternative disinfection techniques.					
Solid waste treatment needs and development of alternative strategies -					
Coordinate groundwater quality monitoring with MDNR at old and current dumps and landfills.	3				
Provide alternative remedial measures to problem areas.					
Explore refuse incineration as energy source (RCRA).	X				
Develop regional management schemes to protect water quality. .		3	2	2	2
WATER QUALITY STUDIES					
Lake management -					
Problem investigation, self-monitoring, and continuation of historic sampling.	3				
Continue compilation of data to prioritize lakes for future study and develop specific management recommendations. Determine feasibility of low flow augmentation.		178	7	6	4

REGION II PLANNING COMMISSION
FIVE YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
LAND USE/POPULATION PROJECTIONS					
Local and technical assistance -	8	8	7	8	4
Prepare an accurate property-by-property definition of basin boundaries.					
Inventory and assess major land uses affecting water quality, and evaluate the impacts of land use changes on public sewerage facilities and non-structural control needs.					
Review and revise population and employment projections as necessary and analyze impacts on Water Quality Management Plan.					
ENERGY					
Solid waste treatment needs study -					
Explore the incineration of refuse to generate energy sources (under RCRA).	X				
WETLANDS					
Environmental areas -	2	2	2	2	2
Provide technical assistance to local governments.					
Assist MDNR in identifying wetland types and mapping for the National Inventory of Wetlands.					
Maintain inventory of environmental conditions and constraints.					

NOTE: X = no cost specified.

SOUTHCENTRAL MICHIGAN PLANNING COUNCIL
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

Urban stormwater runoff from the region's three major cities (Kalamazoo, Battle Creek and Portage) is identified as a significant source of pollution. Runoff from the smaller cities might also be significant. A study of urban stormwater controls for the major cities is the largest single expenditure of funds.

The work program also emphasizes the prevalence of rural problems. Alternatives to conventional wastewater treatment facilities, management of small plants and studies of inland lakes and environmentally sensitive areas were given prime consideration.

Highlights/Great Lakes Concerns

As mentioned above, a major focus of the strategy is rural issues and problems, including identification of wetlands. An urban stormwater control project will be funded entirely by the three major cities being studied. The inland lakes management program will continue through 1983, whereas the other programs may only last a year or two.

Great Lakes pollution from atmospheric sources, energy and dredging issues are not addressed. Residuals and sludge management do not appear to be a major problem here, unlike the situation in other urbanized areas.

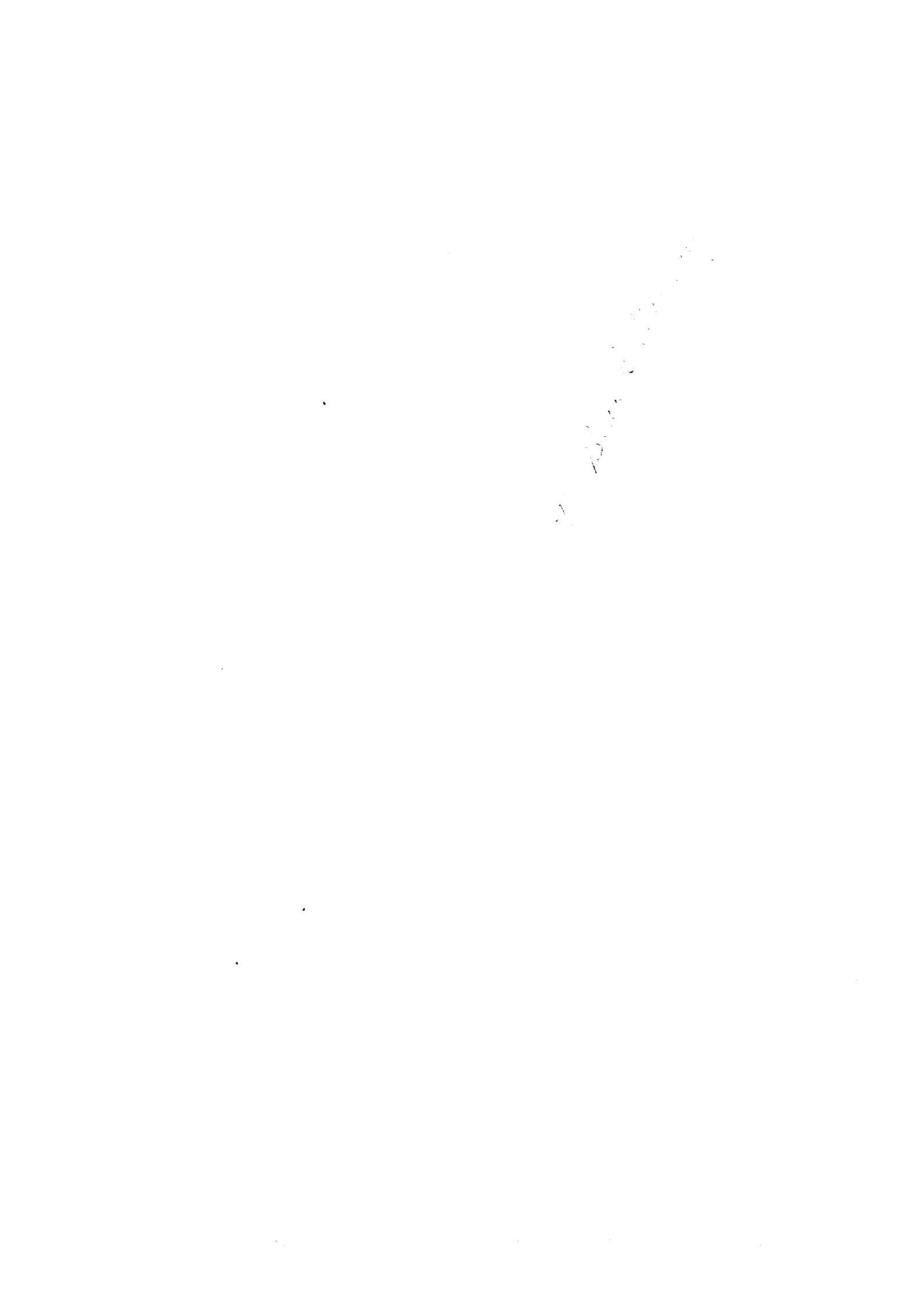
SMPC FIVE YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Grant management and plan update -	X	X	X	X	X
Treatment plant survey.	2				
Plan update.					
Includes industrial point sources survey.	X				
Advise local health officials of locations of documented coliform problems; sample and determine sources.		2			
Cooperative management and analysis study of small waste treatment plants.			6		
Examine alternative and innovative waste treatment systems for use in lake and stream areas.			16	12	
List stormwater, sewage and industrial discharge points. (See Nonpoint Sources, "Urban stormwater".)	X				
NONPOINT SOURCES					
Urban runoff -					
Urban stormwater - Computations, using existing data, of estimated loadings and a list of stormwater, sewage, and industrial discharge points.	5				
Major city (Battle Creek, Kalamazoo and Portage) stormwater control projects -					
Identify and prioritize major sources and validate STORM estimates.		44			
Determine extent of water quality problems occuring from discharges of human and animal wastes to drainage systems.					20
Rural runoff -					
Identify and prioritize nonpoint source problems in rural areas and plan for management.				10	10
Nonpoint source monitoring -					
List priority sampling locations, estimate costs and schedule implementation of controls on agricultural nonpoint sources of toxics and nutrients.	10				
Nonpoint source implementation needs -					
To be included in plan update.	X				

SMPC FIVE YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
TOXICS					
Nonpoint source monitoring - Will emphasize toxic substances and nutrients.	X				
RESIDUALS AND SLUDGE MANAGEMENT					
Plan update (treatment plant survey) - Will include information for each treatment plant on residual waste disposal.	X	X	X	X	X
See Point Sources for other related work on alternative waste treatment systems.					
WATER QUALITY STUDIES					
Nonpoint source monitoring - (See Toxics above)	X				
Assistance to lakes -					
Map land use, soil type and surface water for each lake and watershed studied.	3				
Conduct detailed studies of high priority lakes to prioritize probable pollution sources.		2	2	2	2
Environmentally sensitive areas - (See Wetlands below).					
LAND USE/POPULATION PROJECTIONS					
Assistance to lakes - (See Water Quality Studies above).					
Plan update - Will include adjustments in population projections.	X	X	X	X	X
WETLANDS					
Conduct a study of environmentally sensitive areas and wetlands, identifying them and determining their impact.		13			
Develop model rules, ordinances for their protection and promote adoption.			6		

NOTE: X = no cost specified.



SOUTHEAST MICHIGAN COUNCIL OF GOVERNMENTS
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

The high priority items of the Southeast Michigan Council of Governments' (SEMCOG's) strategy are municipal wastewater treatment plants, industrial discharges, combined sewer overflows, toxic substances control/hazardous wastes management, sludge and residuals disposal and stormwater runoff. Major emphasis is placed on toxic substances control/hazardous wastes management issues and, to a lesser degree, residuals disposal.

Highlights/Great Lakes Concerns

Pollution from street-salting and identification of sensitive salting areas are both addressed by SEMCOG. Other Great Lakes "208" agencies have not given much attention to this problem. Pesticides, chloride and dust control analyses and wetlands protection programs are also addressed. There are no proposed programs specific to the Great Lakes.

SEMCOG FIVE YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Economic analysis of water pollution control measures.	33				
Revise sewer service map.	22		30		22
Environmental needs overview (air/water/land).		12			
Raingage network.	24	24	24	24	24
Update 201 Plan.					15
NONPOINT SOURCES					
Land use impacts study.	25				
Urban runoff -					
Develop urban stormwater guidelines.	26				
Fringe area planning.	16	8			
Identify urban stormwater problem areas.		6			
Develop salt application guidelines.		7			
Identify sensitive salting areas.		5			
Rural runoff -					
Establish agricultural critical areas.	17				
Develop criteria - specific agricultural problem areas.		3			
Compile pesticides data.		1			
Identify specific agricultural problem areas.			9	9	
Evaluate voluntary agricultural program.			3		
Assess county codes vis-a-vis State Revised Code.				12	
Chloride and dust control analysis.				9	
TOXICS					
Industrial waste clearinghouse analysis.	17				
Workshop - industrial pretreatment - model program - small agencies.		25			
Compile pesticides data (See Nonpoint Sources, "Rural runoff").					
Chloride and dust control analysis (See Nonpoint Sources, "Rural runoff").					
RESIDUALS AND SLUDGE MANAGEMENT					
Industrial waste clearinghouse analysis (See Toxics above).					
Develop septic system constraints.	10	10	10	10	
Workshop -industrial pretreatment - model program - small agencies (See Toxics above).					

SEMCOG FIVE YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
RESIDUALS AND SLUDGE MANAGEMENT (cont'd.)					
Develop backup strategies.		40			
Coordinate compost demonstration project.		5			
Septage disposal program.		21			
Criteria for reviewing regulations on landfills.		4			
Evaluate specific districts for septic system management.		12			
Identification of landfill problem areas - continuing.		3	3	3	3
WATER QUALITY STUDIES					
Integrate water quality data base.	29				
Integrate water quality standards for nonpoint sources into Water Quality Management Plan.		4			
Water quality sampling - specific site.		46	134	134	134
Water quality data base - development and dissemination.		10	10	10	10
LAND USE/POPULATION PROJECTIONS					
Update 208 Plan.	41	20		15	
Census impact.			40		
Update 201 Plan (See Point Sources above).					
ATMOSPHERIC SOURCES					
Environmental needs overview (air/water/land) - (See Point Sources above).					
WETLANDS					
Wetlands protection.	16				

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
WATER QUALITY MANAGEMENT DETAILED WORK PROGRAM
FY 79-81

Major Problems/Program Emphasis

There are numerous work elements proposed under the Southeastern Wisconsin Regional Planning Commission's (SEWRPC's) work program. Point source and nonpoint source pollution are major water quality concerns. A coastal management planning program has been established. Urban storm water management is addressed under the regional flood control and drainage program.

Highlights/Great Lakes Concerns

A comprehensive water resources investigation of direct drainage areas to Lake Michigan is proposed for FY 1981. Effects of runoff on receiving estuaries, harbors, and Lake Michigan proper (in regard to water quality, pooling of pollutants, dredging, and recreation) will be analyzed. Analytical techniques for water resource analysis in estuaries, harbors, and the nearshore zone will be applied as part of the planning process.

The Southeastern Wisconsin Regional Planning Commission will assist local units of government within the coastal management area in the identification of geographic areas of management concern. Utilizing coastal management funds, SEWRPC will also aid in identification of coastal management projects for local implementation.

Coordination will continue between the Great Lakes Basin Commission and SEWRPC to assure cognizance of technical findings in water resources problems and to avoid redundancy in data collection.

The 208 program is well defined, but is not a high priority program for SEWRPC. This is evidenced by the 1979 and 1980 funding levels which put it below transportation planning, community assistance planning and land use planning. Current work programs list only the funding levels through FY 1981. A five year plan was not available.

SEWRPC DETAILED WORK PROGRAM

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
General environmental resources surveillance and monitoring - Monitor water quality and streamflow data (among other projects).	73	77	80		
Analyze changes in industrial and municipal waste dischargers; separate and combined sewer overflow elimination; sanitary sewerage development; pollution control expenditures.	19	20	21		
Assistance for local adoption and implementation of plan.	22	14	10		
NONPOINT SOURCES					
Provide information on degree of plan implementation; analyze: changes in land use development, land management practices installed to control both urban and diffuse pollution sources; relative level of use of fertilizer and pestides; use of erosion controls and construction activities; woodland and wetland management.	17	17	18		
Model implementation plans (provide assistance to local management agencies for nonpoint source control). Site specific identification of problems, alternative means of control, technical support.	36	21	22		
Evaluate nonpoint source control effects - Review and evaluate effectiveness of nonpoint source control practices installed in region.	9	9	10		
Urban stormwater pollutant loads control study - Demonstrate feasibility and effectiveness of urban stormwater pollution controls.	108	108	108		
TOXICS					
Water quality planning for point source pollution controls: Toxic and hazardous pollutants - Inventories and extent of hazardous waste pollution; sources; forecasts of future quantities; legal, institutional, financial factors affecting management.	28	39	10		
Nonpoint source toxic and hazardous substances - Inventory nonpoint sources and effects, especially urban runoff, solid waste disposal sites, and auto salvage yards.	28	39	10		

SEWRPC DETAILED WORK PROGRAM (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
LAND USE/POPULATION PROJECTIONS					
Update data base of land use.	75	75	31		
Monitor land use development changes (1963-Present).	50	70	29		
Continuing research - Population size, distribution, characteristics.	18	19	37		
ATMOSPHERIC SOURCES					
Line source emissions, area source emissions, and point source emissions - Inventory and monitor progress toward regional and state goals (3 studies).	58	62	65		
SPECIFIC GREAT LAKES STUDIES					
Water resources planning techniques study - Investigate techniques for water resources analysis in Lake Michigan coastal areas.	17				
Lake Michigan estuary and direct drainage area subwatersheds comprehensive plan - Conduct a comprehensive water resources investigation of the direct drainage areas to Lake Michigan in the region.			329	329	329
Coastal management program coordination.	29	41	44	47	50

SOUTHWESTERN MICHIGAN REGIONAL PLANNING COMMISSION
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

Major issues and problems to be addressed over the next five years are: inland lakes water quality; agricultural nonpoint pollution; overall water quality management coordination; public information and involvement; groundwater contamination and depletion; urban stormwater runoff; wetlands protection; construction site runoff; surface drainage systems; and on-site sewage disposal systems.

Continuing planning, identification of nonpoint sources, and inland lakes will be addressed in FY 1979.

Highlights/Great Lakes Concerns

Inland lakes water quality is addressed in great detail. Wetlands protection is included in the strategy as well as the problem of groundwater depletion from agricultural withdrawals. The Great Lakes are not specifically addressed in any program.

The report clearly identifies issues/problems and objectives for each issue/problem. Within the FY 79 work description is found the methodology, previous related work, participants, schedule, expected products and program accomplishments and costs/funding. Unfortunately, FY 80-83 work descriptions are very general and do not include a breakdown of tasks by year, or projected costs by work element.

SMRPC FIVE YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Review 201 Plans and NPDES permits.	9	X	X	X	X
NONPOINT SOURCES					
Urban and rural runoff -					
Select 4 watersheds (3 rural and 1 urban), identify suspected nonpoint sources and sampling locations.	.5				
Conduct sampling of the watersheds.	8				
Assess nonpoint source effect on water quality.	2				
Urban stormwater runoff -				X	X
Identify problem areas and provide information to local units of government.					
Agricultural nonpoint pollution -		X	X	X	X
Develop educational programs to address specific problem areas.					
Soil and sediment erosion control -				X	X
Evaluate effectiveness of PA 347.					
Map surface drainage systems.					X
TOXICS		X	X		
No specific mention, although groundwater contamination will be studied.					
RESIDUALS AND SLUDGE MANAGEMENT					
On-site sewage disposal -					X
Study and analyze alternative maintenance systems.					
Groundwater contamination and depletion.		X	X		
WATER QUALITY STUDIES					
Identify nonpoint sources of pollution -					
Sampling of the 4 selected watersheds (See Nonpoint Sources above).					
Inland lakes -					
Map 72 lake watersheds and land use.	6				
Investigate existence of additional lake water quality data and assemble all existing data on 72 inland lakes/watersheds.	2				
Evaluate 72 lakes/watersheds and make general planning and management recommendations for each lake/watershed.	8				
Determine which lakes need more data and sample 24 lakes.	17				

SMRPC FIVE YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
WATER QUALITY STUDIES (cont'd.)					
Of 24 lakes determine which 12 require most detailed sampling.	21				
Sampling, watershed analysis and planning and management recommendations will be developed for the remaining lakes in excess of 50 acres.		X	X	X	
Groundwater contamination and depletion - Survey resources, identify problem areas and develop solutions.		X	X		
LAND USE/POPULATION PROJECTIONS					
Plan update - No specific mention of projection revisions.	8	X	X	X	X
Inland lakes - Map 72 lake watersheds and land use within those watersheds on USGS topographic (1" = 1,000') maps (See Water Quality Studies, "Inland lakes", above).					
GROUNDWATER					
Groundwater contamination and depletion - Survey resources, identify problem areas and develop solutions.		X	X		
WETLANDS				X	X
Develop model ordinances and educate public, local government on protection.					

NOTE: X = no cost specified.

TOLEDO METROPOLITAN AREA COUNCIL OF GOVERNMENTS
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

The Toledo Metropolitan Area Council of Governments (TMACOG) has identified agricultural runoff as the most important water quality management problem affecting the region. Urban runoff and stormwater management are also crucial problem areas. Best management practices have been identified but performance criteria and planning guidelines must be developed. Control of toxics and heavy metals through industrial pretreatment has been identified as having a strong bearing on sludge disposal alternatives to be generated for the region.

Highlights/Great Lakes Concerns

One of the major program objectives is the establishment of an effective program for monitoring the improvement of water quality in Lake Erie, its estuaries, and rivers in the TMACOG region. Data produced by the Corps of Engineers, the Toledo Pollution Control Agency, USGS, universities, 305(b) reports, and other sources will be analyzed to maintain an up-to-date record of water quality. An Annual Problem Assessment summarizing the results of the monitoring effort will be published.

A program to control the discharge or placement of dredged material from the Maumee Bay and River is proposed. Some of the objectives are: to ensure containment of polluted sediment within a mass of dredged materials; to minimize the impairment of water circulation; to protect existing wildlife habitat; and to reduce shore erosion by placement of dredge sites to absorb impact of wave energy.

The objectives and work elements of the program are well defined and well organized. The strategy appears workable, although no dollar figures are given for the work elements.

TMACOG FIVE-YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Develop projections of industrial waste loads.		X			
With Ohio EPA, develop maximum daily loads and point source waste load allocations for streams in region.			X	X	
Develop wastewater treatment needs and priorities for areas not covered by ongoing facilities plans.	X				
Develop alternative wastewater treatment schemes (treatment discharge and reuse and land application).		X			
Analyze industrial processes for compatibility with municipal treatment systems.				X	X
Provide process-specific industrial pretreatment requirements.			X		
NONPOINT SOURCES					
Develop county programs and specific activities to implement BMPs.	X	X	X	X	
Identify and map sheet erosion areas, and site specific areas for BMPs.			X	X	
Assess ability of existing data base to be used with modeling routines to predict combined sewer overflow problems for selected planning areas.	X	X			
Determine cost-effectiveness of using structural or non-structural stormwater management programs.		X			
Assess stormwater system needs for 20 yr. period.			X	X	
TOXICS					
Study quantity and constituents of municipal sludge to identify hazardous residuals.		X			
Study quantity and constituents of industrial sludge to identify hazardous residuals.		X			
WATER QUALITY STUDIES					
Analyze annual updates of 305(b) reports and other periodic studies in order to establish and maintain a continuing record of water quality in the region.	X	X	X	X	X
Develop a monitoring program to track progress on phosphorus reductions in stream segment planning areas.	X				
Impact assessment: establish existing conditions (water quality, flora/fauna, character of effluents); predict future effects - relate effluent or action to changes in receiving water quality, change in water quality to aquatic species, change in water quality to economic and social considerations.					

TMACOG FIVE-YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
LAND USE/POPULATION PROJECTIONS					
Analyze land use projections to determine effects of growth and development on water quality.			X	X	
Adjust population projections as necessary to conform to BEA statewide projections for the year 2000.		X	X		
DREDGING					
Perform environmental assessment of dredge sites and fill materials.	X	X	X	X	
Assess current state (404) permit program; include impact of programs for winter navigation, channel deepening on 404 program; compile inventory of vital areas (wetlands, beaches, spawning beds, estuaries, etc.) to assist in future site selection.		X			
Assess potential BMPs and costs.		X			

NOTE: X = no cost specified.

TRI-COUNTY REGIONAL PLANNING COMMISSION
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

Common pollutant sources identified in the region include urban stormwater discharges, combined sewer overflows, and open storm drains. Agricultural runoff and land/subsurface disposal of solid wastes are potentially the most significant nonpoint sources of pollution. In addition, certain lakes have been overenriched and groundwater problems may be significant.

Work programs are listed by priority for funding. High priority is given to near-term tasks geared toward setting up the process for implementation, revising the plan, and incorporating water quality policies into other agencies' programs. Greatest technical expenditures will be for the water quality modeling study, development of recommendations for abatement of groundwater pollution, the urban area wastewater sludge disposal study, and water quality sampling.

Highlights/Great Lakes Concerns

The program places much emphasis on water quality studies -- monitoring, sampling, and modeling. The Great Lakes, energy, wetlands and dredging are not specifically addressed.

TCRPC FIVE YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Point source discharges report.		2	1	1	1
201 facility plan.		1	1	1	1
STORET data retrieval system - Includes instream wastewater treatment plant discharge data.		7			
NONPOINT SOURCES					
Urban runoff -					
Water quality modeling study - Combined sewers and stormwater runoff in Lansing and E. Lansing.	307	322	309		
Streetsweeping problem determination study - For selected communities, includes cost-effectiveness.		45			
Nonpoint source assessment - Both urban and rural.	22	16			
Litter control programs.		5			
Rural runoff -					
Agricultural and livestock regulatory program -					
Coordinate groups in problem identification.	5				
Draft regulatory program.		5			
Finalize regulatory program for implementation.			6		
Nonpoint source assessment - (See above under "Urban runoff").					
TOXICS					
See Water Quality Studies, "Water quality sampling", below.					
RESIDUALS AND SLUDGE MANAGEMENT					
Private sewage disposal maintenance systems - Technical assistance in problem identification and implementing methods of correction.	5	3			
Landfill corrections - Onsite investigations.	20	4	4	4	5
Urban area wastewater sludge disposal study - To determine alternatives for Lansing area.	88				
	5				

TCRPC FIVE YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
WATER QUALITY STUDIES					
Water quality sampling - Includes urban and agricultural/livestock runoff, microbiological sampling, tributary monitoring, instream monitoring of background levels, benthic oxygen and bottom deposit studies in streams, test studies to monitor for pesticides, heavy metals and toxics.	63	9	10	10	11
Groundwater recommendations - Soil borings at high potency sites and groundwater recharge area depiction will be conducted.	28 20	16			
GROUNDWATER					
See Water Quality Studies, "Groundwater recommendations", above.					
ATMOSPHERIC SOURCES					
No specific study. However, air quality programs will be coordinated.					

WESTERN MICHIGAN REGIONAL PLANNING COMMISSION
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

Significant problem areas include: insufficient data on water quality problems, cumulative effects of three wastewater treatment plants in the Grand Rapids metro area, accumulation of heavy metals in the bottom sediments of the Grand River from industrial (primarily metal plating) discharges, documented on-site waste disposal systems problems, erosion/ sedimentation, unknown but potentially significant pollution from closed dumps and potential overenrichment of inland lakes. The five year strategy emphasizes the resolution of these major problems.

Highlights/Great Lakes Concerns

A metal plating wastes study and pilot studies of on-site waste disposal and closed dumps are projects with regionwide application. The Great Lakes, atmospheric sources, energy, wetlands and dredging are not specifically addressed.

The plan includes a detailed section on projects for FY 79-80 but is less specific for FY 81-83. Program success will be somewhat difficult to assess because the objectives are not written in quantifiable terms.

WMRPC FIVE YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Plan update.	X	X	X	X	X
Metro sewerage policy.					
NONPOINT SOURCES					
Urban runoff -					
Urban stormwater study.			10	100	100
Rural runoff -					
Agricultural nonpoint source study - inventory and priorities.	8				
TOXICS					
Metal plating wastes study.	X	13	20	25	
RESIDUALS AND SLUDGE MANAGEMENT					
On-site disposal system study -					
One county pilot.	5	15			
Regionwide.			10	10	
Closed dump study -					
One county pilot (dropped from funding).	(4)	5			
Regionwide.			10	10	
WATER QUALITY STUDIES					
Plan update -	X	X	X	X	X
Will include inventory of water quality, flow conditions, problems, sampling needs, inland lake monitoring, modeling.					
Reeds Lake -	4				
Will develop land use control plan that addresses quantity/quality of runoff associated with development options.					
Inland lakes study.		15	20	25	25
LAND USE/POPULATION PROJECTIONS					
Plan update -	X	X	X	X	X
Will include land use inventory and 5 year land use review assessment.					

NOTE: X = no cost specified.

WESTERN UPPER PENINSULA PLANNING AND DEVELOPMENT REGION
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 79-83

Major Problems/Program Emphasis

The major sources of pollution identified were municipal discharges, streambank erosion and sedimentation, solid waste disposal, and iron and copper mining. Preservation of inland lake water quality is strongly emphasized, along with development of baseline water quality data for surface and groundwater resources. Because the region is largely rural and undeveloped, program goals are based upon preservation of high quality waters and education of local governments in program implementation.

Highlights/Great Lakes Concerns

Coordination with other state and federal programs and agencies (such as "208" planning agencies and the Great Lakes Basin Commission) is encouraged in the agency's plan. Although the Great Lakes are not specifically addressed in the work elements, they are identified as an issue.

Because of the region's character, much emphasis is placed on streambank erosion and sedimentation from forested areas, and pollution from mining operations.

Atmospheric sources of pollution, urban runoff, toxics, energy, wetlands and dredging issues are not included in the strategy.

The work program strategy is brief and not very well defined. Tasks are listed in order of priority. The years of implementation of specific tasks are included, however outputs are described in general terms. Costs are not included, except for the projected total of $50,000 per year.

WUPPDR FIVE YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
201 Plan review	X	X	X	X	X
NONPOINT SOURCES					
Rural runoff -					
Assess streambank erosion and sedimentation control costs based on geologic, climatic and/or hydraulic classification.	X	X	X		
Develop water quality data on iron ore mining in the Goebic Range.			X	X	X
Monitor Torch Lake tailing sands.				X	X
Develop water quality data for all copper mines in Keweenaw Peninsula to determine effect on groundwater.				X	X
Soil survey.		X	X	X	X
RESIDUALS AND SLUDGE MANAGEMENT					
See Water Quality Studies below - After groundwater monitoring data is analyzed, develop alternative disposal sites.	X	X			
See Nonpoint Sources above for monitoring of Torch Lake tailing sands.				X	X
WATER QUALITY STUDIES					
Establish baseline water quality data for aquifers which might be polluted by open dumps/landfills (with MDNR Resource Recovery Division).	X	X			
Inland lakes -					
Develop relevant data for lakes greater than 50 and less than 100 acres.	X	X	X	X	
Establish baseline water quality data (application of remote sensing).	X	X			
For inland lakes greater than 100 acres with greater than 10% developed shoreline, establish baseline water quality data.		X	X		
For inland lakes greater than 50 and less than 100 acres with greater than 10% developed shoreline, establish baseline water quality data.			X	X	
Develop depth map and flow patterns for lakes greater than 50 acres.		X	X	X	X
Determine amount of pollution (development) each lake can sustain before water quality is affected.		X	X	X	X
Also, see Nonpoint Sources above.	X	X	X	X	X

WUPPDR FIVE YEAR STRATEGY (cont'd.)

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83

LAND USE/POPULATION PROJECTIONS

Population projections were revised in FY 78 for EPA element approval.

GROUNDWATER

See Water Quality Studies and Nonpoint Sources above.

NOTE: X = no cost specified.

WEST MICHIGAN SHORELINE REGIONAL DEVELOPMENT COMMISSION
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 1979-1983

Major Problems/Program Emphasis

The West Michigan Shoreline Regional Development Commission (WMSRDC) has identified the following as high priority issues in the region: stormwater runoff to surface waters, toxic pollutants in lake and stream sediments, industrial discharges, and agricultural practices contributing to nonpoint source pollution.

Highlights/Great Lakes Concerns

No studies specific to the Great Lakes are mentioned. The Michigan Department of Natural Resources (MDNR), in reviewing the five year strategy, noted that the proposed lake surveys may duplicate surveys to be conducted by the state under Section 314 of the Clean Water Act. Regional activity related to those surveys must be coordinated with the Land Resource Programs Division of MDNR in order to receive consideration for Section 208 funding.

WMSRDC FIVE YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR (COST $1,000)				
	79	80	81	82	83
POINT SOURCES					
Develop federal, state, and municipal regulations to control industrial discharges to surface water, groundwater, municipal treatment systems, and storm drains.		NO COSTS SPECIFIED			
NONPOINT SOURCES					
Stormwater runoff - reduce pollutant loadings to urban storm drains by 25% per year.					
Mona Lake, Lake Macatawa, Rush Creek, Hart Lake urban stormwater studies.	59	57	98	46	
Agricultural runoff - develop measures to control water quality degradation from agricultural practices.					
Water quality surveys: Macatawa River, Rush Creek, Crockery Creek, Pere Marquette.	12	25			
Assess water quality of rural drains: Ottawa and Oceana Counties.		69	25		
Refine rural runoff model.			35		
TOXICS					
Toxic pollutants in lake and stream sediments -					
Rehabilitation feasibility studies: Mona Lake, Lake Macatawa, Bear Lake.	54	57	61		
Grand River toxics survey.	30				
Impacts of disposal of toxic and hazardous material -					
Gather data on toxic contamination of groundwater in Ottawa and Oceana Counties.	20	10			
Evaluate toxic loadings from various industrial waste disposal sites.	54				
WATER QUALITY STUDIES					
Muskegon Lake Trophic Status Survey			34		
Silver Lake Survey	12				
Also, see Toxics, "Impacts of disposal of toxic and hazardous material".					
GROUNDWATER					
See Point Sources and Toxics.					

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
FIVE YEAR STRATEGY FOR WATER QUALITY MANAGEMENT
FY 80-84

Major Problems/Program Emphasis

The Wisconsin Department of Natural Resources (WDNR) has identified five priority issues for FY 1980: water quality standards and waste load allocations, residuals from treatment plants, groundwater protection, hazardous waste siting legislation, and the State Implementation Plan.

Water Quality Standards: Wisconsin is moving toward a comprehensive water quality management plan which will provide for maintenance of fish and aquatic life wherever attainable by 1983. The key to this effort is the development of suitable water quality standards. If sufficient EPA funding is provided, studies will be conducted to determine how the standards might be changed to better account for the effects of nonpoint sources of pollution, and to determine the best methods for dealing with nutrients (especially phosphorus) that are causing serious eutrophication problems.

Residuals: WDNR will develop a management strategy for disposal of sludge from publicly-owned treatment works, including recycling and/or disposal. Monitoring of toxic substances will be included in the strategy.

Groundwater: WDNR will develop programs for the protection of groundwater, including evaluation of the conditions of the resource. Plans will be developed to deal with identified problems. A groundwater study is currently underway as part of the 208 program.

Hazardous Waste Siting Legislation: WDNR will draft legislation which will provide the state with the ability to locate and obtain acceptable hazardous waste sites. The legislation will also give the state the ability to develop and operate the site or to contract for those services.

SIP Revisions: The Clean Air Act Amendments of 1977 require all states to submit revised State Implementation Plans (SIPs) to deal more effectively with atmospheric sources of pollution. WDNR will establish the rules, commitments, and schedules required in the SIP process.

Highlights/Great Lakes Concerns

Three subprograms have been designed to develop and implement the above programs over the five year period: water quality management, wastewater management, and water supply.

The Water Quality Management subprogram includes the determination and evaluation of water quality problems across Wisconsin. Priorities for this subprogram include water quality standards and the development of a nonpoint source pollution abatement program. This subprogram does not include the efforts of the regional agencies (SEWRPC and FVWQPA).

The Wastewater Management subprogram includes assisting, directing, and regulating municipal and industrial point source dischargers. This involves industrial and municipal wastewater treatment plant operation, wastewater collection, and sludge disposal. The subprogram focuses on permit issuance, enforcement, treatment facility upgrading, and construction programs. A wastewater pretreatment program will be developed in FY 1980 to control industrial and large commercial firms' wastewater discharge to municipal treatment plants.

The Water Supply subprogram involves assisting, directing, and regulating public and private water systems. This includes sanitary surveys and inspections of both community and non-community water systems, technical assistance, and review of plans for new facilities.

WDNR FIVE-YEAR STRATEGY

WORK ELEMENTS OF INTEREST	FEDERAL FISCAL YEAR ($ MILLIONS)				
	80	81	82	83	84
POINT SOURCES					
Wastewater Management subprogram: This includes policy development, permit processing, compliance surveillance, plan review, grants processing, technological assistance, enforcement, pretreatment, and general administration.	5	6	7	7	8
NONPOINT SOURCES					
Water Quality Management subprogram: This includes environmental evaluation, policy development, implementation planning, permit processing, plan review, technological assistance, environmental emergencies (such as hazardous waste spills), and general administration.	4	4	5	5	6
WATER QUALITY STUDIES					
Environmental evaluation: Includes large stream water quality monitoring; basin assessments; effluent monitoring; environmental impact analysis; inland lake monitoring; special studies (Menominee River Study, Green Bay Urban Runoff Study, Lake Michigan Tributary Study).	2	2	2	2	2

OUTLOOK FOR FUNDING

In the summer of 1979, the U.S. Environmental Protection Agency announced its intention to realign its priorities and program direction regarding Section 208 Water Quality Management. It established four priority problem areas to be addressed in FY 80-84: urban storm runoff; nonpoint sources; groundwater quality; and waste treatment facilities. Generally, highest funding priority will be assigned to programs addressing urban stormwater runoff, agricultural runoff and groundwater protection. Programs involving nonpoint source pollution from construction, mining, or silvicultural activities will generally receive secondary priority. Support will also be available for local priorities differing from national 208 funding priorities if they are (1) implementation oriented, (2) directed at nonpoint sources, and (3) expected to have a major impact on water quality.

Emphasis will be on filling gaps in areawide water quality management plans during FY 80-83. EPA will provide funding and technical assistance for prototype problem-solving projects. Planning for point sources and general planning activities (i.e., population projections, A-95 review) are not eligible for 208 funds after FY 79. Local and state governments will be responsible for picking up costs if they wish certain projects to continue.

EPA anticipates completion of the 208 grant program by FY 83 if Congress appropriates full funding for FY 81, 82 and 83. If the program does not receive adequate funding, 208 grants would follow priorities set by the agency in the Zero Base Budget process. EPA would then attempt to extend completion past FY 83, if necessary, to counter the lower funding.

If the 208 grant program is completed by FY 83, EPA will then recommend a restructured program focusing on implementation of nonpoint source controls. The Water Quality Management Program will continue with 106 grants and, presumably, state and local funds supporting problem-solving activities.

As a result of these recent changes, some of the programs outlined in both the five-year strategies and work programs will no longer be eligible for 208 funding. Starting in 1980, most grants will go to specific demonstration projects concerning abatement of nonpoint source pollution rather than general planning activities or areawide surveys and studies.

Additionally, competition for 208 funds will be national instead of regional. This will make it especially difficult to finance projects which differ from the national 208 funding priorities. Federal monies are still available under other sections of PL 92-500 and a variety of other programs. However, unless state and local governments choose to provide funding, EPA's new program will likely result in the termination of a number of regional water quality management programs.

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This study is to provide an update of activities since PLUARG was presented to the Water Quality Board.

16. ABSTRACT

This report represents the five year strategies and annual work programs developed by state and areawide planning agencies in the basin that will review and propose studies with particular relevance to Great Lakes issues and problems identified. Major water pollution problems are highlighted in the reports and programs proposed for pollution abatement are discussed.

17. KEY WORDS AND DOCUMENT ANALYSIS

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