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# United States Response to Recommendations in the International Joint Commission's Fifth Biennial Report

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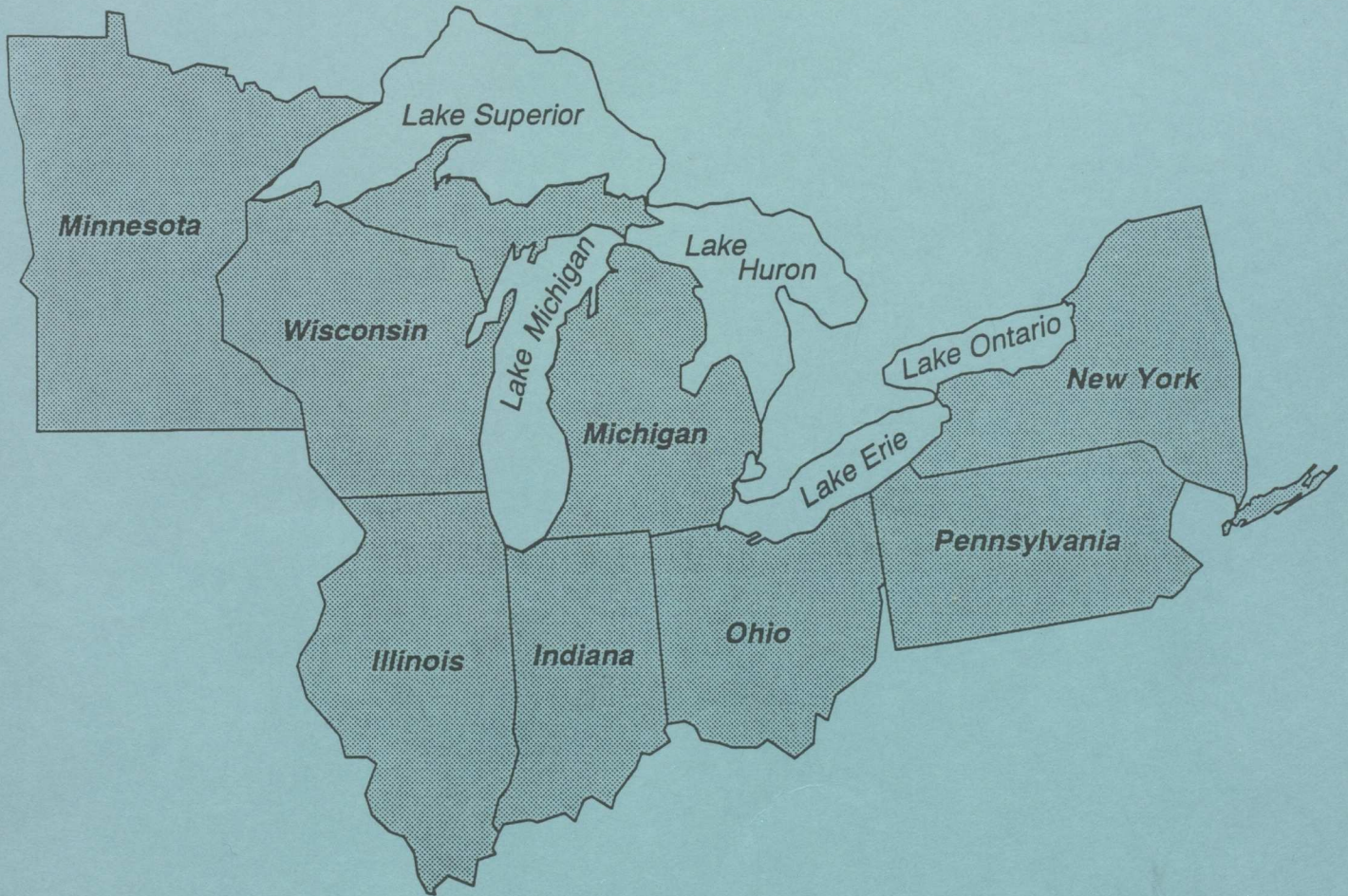
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# United States Response to Recommendations in the International Joint Commission's Fifth Biennial Report

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September 1991

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**IJC Recommendation I.1. The Parties complete and implement immediately a binational toxics substances management strategy to provide a coordinated framework for accomplishing, as soon and as fully as possible, the Agreement philosophy of zero discharge.**

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The United States (U.S.) has developed, and has been actively implementing, a comprehensive, nationwide strategy for reducing the introduction of toxic substances into the environment. The strategy has three basic components. The first and preferred component is to prevent the creation of toxic substances. Second, where pollution prevention is not possible, the U.S. controls the introduction of the pollutant into the environment through regulation and incentives. Third, the United States remedies sites previously contaminated with toxic substances where these sites present unacceptable risks to human and ecological health. Underpinning all elements of this tripartite strategy, the United States strongly enforces environmental laws at the Federal, State, and local levels.

## **1. Pollution Prevention — Preventing the Problem in the First Place**

The U.S. Toxics Management Strategy emphasizes the need to prevent pollution at its source. President Bush (October 1990) summarized this need as follows:

“Environmental programs that focus on the end of the pipe or the top of the stack, on cleaning up after the damage is done, are no longer adequate. We need new policies, technologies, and processes that prevent or minimize pollution — that stop it from being created in the first place.”

Through a variety of regulatory and non-regulatory incentives, the U.S. is, and has been, actively promoting pollution prevention.

In October 1990, the U.S. Congress passed the Pollution Prevention Act of 1990. The Act states that U.S. regulatory agencies and businesses should work together to identify and implement means to reduce and eliminate, whenever possible, operations, practices, and technologies that generate waste. The U.S. Environmental Protection Agency (EPA) considers that the economic incentives associated with reducing and/or eliminating wastes spur industry to adopt pollution prevention techniques.

In response to the Pollution Prevention Act, EPA has stepped up its activities directed at increasing voluntary actions throughout society to adopt cleaner products and processes. EPA and State environmental agencies provide information and technical assistance on pollution prevention options across many aspects of American life. While EPA's initial focus is on industrial wastes, EPA is targeting household, municipal, and agricultural wastes as well.

EPA links its prevention programs with State, university-based, and international technical assistance programs to provide the private sector with valuable research and development support. Further, in cooperation with the private sector, EPA has begun various technical programs and studies to support the growing need for innovative approaches to environmental compliance. EPA is also making a concerted effort to weave pollution prevention into the fabric

of all its regulatory and technical efforts and to focus source reduction initiatives on those industries which pose the greatest threat to the environment.

Through its regulatory programs, the U.S. has been successful in stimulating pollution prevention by prohibiting the introduction of certain pollutants, and by selecting pollution prevention techniques as the preferred waste management approach. Also, regulation has raised the cost of waste disposal, making pollution prevention increasingly attractive on economic grounds. The following examples illustrate how the U.S. approach has been put to work.

Through the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA), EPA has used its authority to prohibit the introduction of toxic substances into the marketplace. Under both of these statutes, EPA has taken action to prohibit, or severely limit, the manufacture and use of toxic substances. Since 1980, nearly one-third, 200 of 611 previously registered chemicals, have not been reregistered, eliminating 23,000 chemical products.

Using regulatory tools, EPA and States have taken actions that will cause, or have caused, American industry to reduce waste generation rather than incur increased compliance costs. For example, many metal finishers and electroplaters, which have traditionally been a large source of toxic metals, are reacting to stringent Clean Water Act (CWA) effluent discharge standards by water conservation and good housekeeping techniques to limit their discharges. At the same time, they are also reacting to stringent Resource Conservation and Recovery Act (RCRA) treatment requirements for sludge disposal by adopting techniques to limit sludge generation, by such means as electrolytic recovery, and by limiting their reliance on industrial solvents. U.S. regulatory efforts, backed by a strong enforcement program, have made pollution prevention an attractive economic investment for this and other industries.

The U.S. also incorporates pollution prevention measures into performance-based regulatory controls. EPA has promulgated zero discharge requirements in more than one hundred industrial subcategories while establishing technology-based standards, principally for toxic pollutants. For instance, in 1977, EPA promulgated effluent standards that mandated "zero discharge" of many pollutants of longstanding concern to the International Joint Commission, including aldrin, dieldrin, DDT, DDD, and DDE, endrin, toxaphene, and PCBs from facilities involved in the manufacture, processing, or formulation of these substances. These standards also applied to storm water and other runoff from these facilities. Moreover, under both the CWA and RCRA, EPA is reviewing pollution prevention regulatory options for use in future rulemakings. For instance, the strengthening and implementing of the antidegradation provisions of water quality standards will further serve to prevent pollution from new or increased discharges to water.

Another tool that the United States uses to foster pollution prevention is to inform the public about toxicant releases. Since 1987, pursuant to the Emergency Planning and Community Right-to-Know Act, large U.S. manufacturing facilities have reported their releases or transfers of more than 300 toxic substances. EPA compiles their information into a database called the Toxics Release Inventory (TRI) and issues annual public reports on TRI data. TRI information is proving valuable in various ways. It has often helped business leaders become better informed about the nature and scope of their releases of toxic chemicals,

allowing them to take steps to prevent or reduce these releases. Industrial workers and nearby communities have similarly become better informed, lending their support to pollution prevention.

#### **Pollution Prevention For the Great Lakes**

EPA views the Great Lakes as a proving ground for its pollution prevention efforts. While buttressed by other Agency activities, pollution prevention is to be the preferred means to reduce toxic pollutants. EPA is incorporating pollution prevention into all its Great Lakes activities and encouraging all sectors of society to contribute their ideas for reducing the quantity and harmfulness of resources used to satisfy human needs.

In April 1991, in concert with the eight Governors of Great Lakes States, EPA launched a Pollution Prevention Action Plan for the Lakes. The Action Plan augments State pollution prevention programs. During recent years, States have started various prevention initiatives, involving education, research, technical assistance, and recognition of prevention successes. EPA will continue to work closely with States in support of their prevention programs.

The Action Plan also complements EPA's national Pollution Prevention strategy, which includes the 33/50 Program. EPA has identified 17 high risk chemicals that offer strong opportunities for prevention. In February 1991, EPA announced a goal of encouraging firms across the nation to cut their releases of these substances 33 percent by the end of 1992 and 50 percent by the end of 1995. Among the 17 are three metals — cadmium, lead, and mercury — that can concentrate at upper levels of an aquatic food web. Mercury contamination is the basis for the issuance of several Great Lakes fish advisories.

Large manufacturing firms report their annual releases or transfers of over 300 toxic substances. Under the 33/50 Program, EPA has asked firms who have reported releases of the target chemicals to voluntarily reduce these through pollution prevention. Many of the 17 substances will be subject to more stringent regulation under the recently amended Clean Air Act. Under that law's "early reductions" provisions, a company may receive a six-year deferral from meeting a maximum achievable control technology (MACT) standard if it voluntarily reduces its toxic emissions by 90 percent before a MACT is proposed. EPA also expects widespread cooperation because pollution prevention offers economic benefits to firms.

The EPA/State Pollution Prevention Action Plan announced in April 1991 entails 5 initiatives dedicated to the Great Lakes and incorporates prevention into all environmental programs. It is predicated on challenging all sectors of society; focusing on high risk pollutants, sources, and areas; and measuring progress. The 5 initiatives are:

- **The Challenge:** The Governors of the Great Lakes States, in cooperation with EPA, challenge all sectors of society to voluntarily reduce releases of pollutants harmful to the Great Lakes.
- **Lake Superior:** Superior has not experienced surrounding development as intensely as the other Lakes, and remains relatively pristine. As the fountainhead of the Great Lakes system, it is important that it remain so. Among other measures, EPA and the Lake Superior States are working to: agree on common procedures to prevent degradation; agree on key pollutants; and establish air deposition sites to monitor loadings of air pollution to the lake.

- **Auto Manufacturing and Related Industries:** EPA and States are working with Chrysler, Ford, and General Motors to promote prevention of persistent toxic substances that injure the Great Lakes ecosystem. These companies are joining with EPA and States to determine the substances of greatest concern and evaluate which may be used in their operations. The companies seek to reduce both their own use of such substances and that by their suppliers. They are also participating in technology transfer forums to share non-proprietary information on prevention techniques.
- **Urban Non-point Pollution:** EPA and New York are supporting three pilot programs to prevent urban non-point source pollution from households. In conjunction with county and municipal governments, New York has launched a consumer education campaign around Buffalo, Niagara Falls, Rochester, and Watertown, on the use and disposal of hazardous waste by households. Also, fact sheets will be used to inform the public of the risks associated with lawn chemicals and suggest lawn care procedures.
- **Binational Symposium:** In the fall of 1991, EPA will co-sponsor with Environment Canada a symposium to bring together leaders from government, industry, and the environmental community to share information on pollution prevention.

Under the Action Plan, EPA and States are incorporating prevention into all their activities, including permits, enforcement, and educational programs. For instance, they are attempting to arrange settlements of enforcement actions under which a polluter will, in lieu of merely a fine, invest in pollution prevention or cleanup past contamination. Pollution prevention measures are also being incorporated into cleanup plans—Remedial Action and Lakewide Management Plans—for geographical problem areas.

## **2. Toxics Reduction Strategy – Controlling Discharges**

The U.S. has developed a toxics control strategy that focuses on: (a) developing environmental criteria and standards to ascertain that level of a particular toxic substance which can be discharged without compromising human health and the environment; (b) establishing controls to limit discharges to levels at or below those criteria and standards; and (c) monitoring to ensure that limits are achieved, that the limits are resulting in ecological improvements, and that emerging problems are recognized.

### **Environmental Criteria and Standards – Establishing Environmental Benchmarks**

Under a variety of statutes, including the CWA, the Safe Drinking Water Act (SDWA), and the Clean Air Act (CAA), EPA and the States have established air, water, and soil criteria and standards to protect human health and the environment. These criteria and standards continue to be improved. EPA is presently developing environmental criteria and standards for an ever-increasing scope of pathways and contaminants. For example, EPA is now developing both sediment criteria and sludge criteria. EPA is also working with the Fish and Wildlife Service (F&WS) to develop water quality criteria to protect wildlife.

In view of the unique features of the Great Lakes, EPA and States consider that in some cases water quality criteria specific for the Lakes may be needed to fully protect aquatic life, wildlife, and human health. In FY 1989, EPA and States began a historic effort known as the "Great Lakes Water Quality Initiative" (GLWQI) to develop water quality criteria for the Great Lakes Basin, implementation procedures, and a Great Lakes antidegradation policy. EPA is responsible for developing national water quality criteria that numerically define maximum

allowable concentrations of certain pollutants in surface waters across the Nation. These criteria are used by States as a basis for their water quality standards and water quality-based regulation under the National Pollutant Discharge Elimination System (NPDES). EPA expects to publish proposed guidance, developed under the Initiative, in the Federal Register in early 1992.

The upcoming completion of guidance developed under the Initiative will fulfill a number of purposes. It will help ensure that Great Lakes environmental needs are fully incorporated into State water quality programs, thereby providing a sound scientific basis for water quality-based protection of the Great Lakes under the CWA. It will provide greater consistency among States in their standards and implementation procedures for the Great Lakes. It will help them to define water quality objectives for Lakewide Management Plans (LaMPs). Compliance with standards throughout the Great Lakes Basin will foster opportunities to adopt pollution prevention technologies and methods.

#### **Establishing Toxics Management Controls**

EPA limits discharges and emissions of toxic substances from a variety of industrial and municipal sources. Under the CWA, for example, EPA has the authority to develop both technology-based and water quality-based limits for facilities discharging to U.S. waters. These limits are put into practice through legally-enforceable permits which establish effluent limits, self-monitoring requirements and other permit conditions. The technology-based controls set a base level of controls which are applicable to industrial categories across the Nation. The toxic technology-based controls for direct dischargers are known as Best Available Technology Economically Achievable or BAT. Where necessary, EPA and the States can set more stringent, enforceable limits, known as water quality-based limits, for toxic pollutants as necessary to meet ecological objectives. Under Section 304(l) of the CWA, EPA and the States have identified those waterbodies needing water quality-based controls to meet ecological objectives. Dischargers on these waterbodies have been or will be issued permits with water quality-based limits. These limits may be expressed as pollutant-specific limits and/or as whole effluent toxicity limits.

Technology-based toxic controls are also established for facilities discharging to Publicly Owned Treatment Works (POTWs). These limits are known as Categorical Pretreatment Standards and are applicable to both new and existing sources. Certain POTWs in the Great Lakes basin, distinguished by their size and/or the composition of their industrial users, are also required to go beyond these technology-based regulations and establish pretreatment programs designed to protect water quality, sludge quality and worker health and safety from toxic pollutants. Through these local pretreatment programs, many of which have adopted stringent local limits on toxicants to supplement the pretreatment categorical standards, controls are imposed on significant industrial users of the sewerage system.

Similarly, all U.S. municipal dischargers must meet secondary treatment. Secondary treatment results in approximately ninety percent reduction in oxygen-demanding substances and suspended solids as compared to 30 percent removal achieved by primary treatment. As with industrial discharges, POTWs are subject to more stringent water quality-based standards as necessary. Indeed, under recent regulatory revisions, POTWs with flows greater than one

million gallons per day (1 MGD) must conduct whole effluent toxicity screening. The U.S. has invested over \$8 billion in sewage system improvements in the Great Lakes basin since 1972, resulting in tremendous improvements in water quality.

The same concept of environmental controls can be found in other EPA and State statutes and regulations. For example, under RCRA, the Agency and States have established rules governing the treatment, storage and disposal of hazardous wastes. Among these requirements are provisions addressing the need for liners, leachate collection systems, and monitoring at RCRA regulated facilities. The statute also provides that the Agency may establish more stringent standards for any particular facility based on the need to protect human health and the environment.

EPA continues to broaden its control of industrial and municipal waste management. For example, the Agency has recently adopted new regulations to control storm water discharges from industry and municipalities. These controls will provide important further reduction of toxic loadings to the Great Lakes. Similarly, the Agency is also adopting new municipal sludge management requirements. Municipalities must seek permits for sludge handling and will need to meet limits on toxicants prior to treatment, disposal or distribution and marketing. The rules will provide an incentive to reduce sludge handling costs by reducing toxicant inputs from indirect dischargers. This should result in POTWs further emphasizing pollution prevention techniques.

The recently amended Clean Air Act (CAA) will also result in the adoption of more stringent limits upon facilities emitting toxicants into the atmosphere. These standards, termed Maximum Achievable Control Technology (MACT), will further reduce industrial emissions of 189 toxic substances across 600 source categories. The list of 189 includes alkylated compounds, polycyclic organic matter, hexachlorobenzene, mercury, polychlorinated biphenyls, 2,3,7,8-TCD furans and 2,3,7,8 tetrachlorodibenzo-p-dioxin. Categories of sources accounting for at least 90% of aggregate emissions for each pollutant will be listed within five years, and brought within health standards within 10 years. This is expected to be of widespread benefit to the Great Lakes.

#### **Monitoring – Measuring Success and Evaluating Future Control Needs**

Monitoring is an important component of the Toxics Management Strategy. Monitoring is conducted to determine whether permittees are complying with prescribed standards, to assess the success of current controls, and to identify new, emerging problems.

The U.S. has a two-pronged strategy for monitoring. The first prong involves self-reporting by industrial and municipal dischargers. The second prong involves compliance and ambient monitoring by EPA and State regulatory authorities as well as by natural resource agencies such as the F&WS and the National Oceanic and Atmospheric Administration (NOAA).

NPDES permittees are required to report, usually on a monthly basis. Permits may require data on various pollutant parameters, including the results of bioassays. In addition, permits may require permittees to provide downstream and upstream water quality information.

Another, more recent, self-reporting tool is the Toxics Release Inventory. Since 1987, many large industrial plants have been required to report their



releases and disposal of over 300 chemicals to all environmental media. This information is available to the public and has proven to be a powerful incentive for facilities to reduce toxic releases.

The second prong, that of source compliance and ambient monitoring, is conducted by several State and Federal agencies. Key ambient monitoring programs address open lake water quality, sediment, and fish tissues. This effort will be aided by EPA's recent purchase and outfitting of a new state-of-the-art research vessel for use on the Great Lakes.

Surveillance programs to address the objectives of the Great Lakes Water Quality Agreement have been conducted jointly with Canada since the Agreement was first signed. For the past 10 years monitoring efforts have shifted increasingly to toxic substances and expanded to cover pathways and endpoints such as the atmosphere, sediment, and fish tissue. To assess airborne toxic substances, the U.S. and Canada are presently establishing the Integrated Atmospheric Deposition Network (IADN) around the Great Lakes.

To assist in the identification of in-place contaminated sediment reservoirs, the U.S. has surveyed harbors over the last decade. Samples of sediment have been collected and analyzed for a wide variety of persistent toxic substances. These data are often used in the development of Remedial Action Plans (RAPs). To evaluate the sources, pathways, and fates of several persistent toxic substances, a mass balance approach is being tested in Green Bay. The results of the Green Bay study will be used to sharpen sampling design, in quantifying the nonpoint source contribution to the total pollutant load and in modeling the load-concentration relationship. This is expected to provide valuable information for use in developing Lakewide Management Plans. Mass balance activities are already underway in Lakes Michigan and Ontario where preliminary mass balance quantities are being developed.

Other U.S. monitoring within the Great Lakes region includes: National Weather Service monitoring of precipitation patterns; NOAA, U.S. Army Corps of Engineers, and U.S. Geological Survey bathymetric and hydrologic studies; F&WS monitoring of fish and wildlife; and NOAA and F&WS surveying of wetlands.

### **3. Site Restoration — Remedying Past Damage to the Environment**

As a result of our society's past handling of harmful substances, there are many contaminated sites around the Great Lakes in need of remedy. On a national basis, there are three separate programs directed at environmental restoration. EPA's Superfund program and additional State programs are directed at the most important inactive hazardous waste sites, whereas the RCRA program provides for cleanup by owners/operators of active hazardous waste sites, and the Underground Storage Tank program provides for cleanup of petroleum and hazardous substances from underground tanks. Together, these programs represent a major investment on the part of the U.S. in site cleanup, and each is active in the Great Lakes basin. The Superfund program alone has 140 sites in the Great Lakes basin; 25 of these are important to restoration of 14 Areas of Concern. Using a mix of Superfund, RCRA, and State hazardous waste programs, the U.S. is addressing the 20 leading waste sites along its side of the Niagara River with a target of eliminating 99 percent of the waste site load of pollutants to the Niagara by 1996.

In addition, EPA is carrying out its Assessment and Remediation of Contaminated Sediments (ARCS) program to demonstrate innovative technologies for addressing contaminated Great Lakes bottom sediments. Contaminated sediments remain a major source of contaminants to the ecosystem. This program was specifically designed to address the needs of the Great Lakes. The ARCS program sponsors sampling of sediments, conducts hazard modelling to assess and predict impacts of contaminated sediments on human health and the environment, and conducts technology evaluations of remediation techniques. EPA is conducting field-scale demonstrations of treatment technology over the next 12 months in five Areas of Concern.

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**IJC Recommendation I.2. The Parties and all levels of government, including local authorities, cooperatively develop and implement appropriate legislation, standards and/or other regulatory measures that will give enforceable effect to the principles and objectives of the Agreement on a basinwide basis.**

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The U.S. agrees with the concept of cooperatively developing and implementing legislation, standards and regulatory measures that have an enforceable effect. To that end, our response to IJC recommendation I.1 summarizes legislative and regulatory measures that EPA, States and localities have taken to implement the principles of the Agreement. Moreover, Federal, State, and local agencies have taken, and continue to take, action to enforce statutory and regulatory standards. The U.S. recognizes that strong enforcement is the backbone of an effective Toxics Management Strategy. Two examples of cooperative efforts to enhance U.S. regulatory programs are provided below.

First, through the GLWQI, EPA and the States are developing scientifically-based water quality criteria for the Great Lakes. Developing water quality criteria is an essential step in devising enforceable NPDES permit limits. Any discharge in excess of water quality-based limits results in a violation subject to enforcement action, either administrative or judicial. EPA and the States have actively pursued enforcement actions against significant violators.

Second, U.S. actions directed toward protecting the Great Lakes extend to municipalities. Over the last several years, to implement the National Pretreatment Program, EPA and States have worked with local pretreatment programs to develop local limits controlling toxicants. EPA has developed guidance manuals and training workshops to ensure that local programs have the tools and expertise to develop enforceable local limits. These local limits, in combination with categorical pretreatment standards, have resulted in tremendous reductions of toxic loadings. For instance, on a statewide basis, Wisconsin wastewater treatment facilities have found that inflows of metals dropped 74 percent between 1989 and 1990, an absolute reduction of more than 10,000 pounds. This overall decline included a cadmium reduction of 93 percent.

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**IJC Recommendation I.3. Additional review and coordination measures be put into effect to ensure other legislation and/or regulations presently in place that affect matters relevant to the Great Lakes environment — or those enacted in the future — are not inconsistent with Agreement Objectives.**

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The U.S. agrees that review and coordination measures are essential to ensure that relevant legislation and regulations affecting the Great Lakes environment are consistent with the Agreement's Objectives. The basic U.S. law addressing water quality, the Clean Water Act, has as its foundation, goals and concepts that are in harmony with the Water Quality Agreement. In 1987 the Clean Water Act was amended to include endorsement of the Agreement in a section of the Law devoted to the Great Lakes. In 1990, the Clean Water Act was further amended to provide deadlines for such key Water Quality Agreement commitments as Remedial Action Plans. In recent years awareness of Great Lakes problems and the Water Quality Agreement have grown throughout both the executive and legislative branches of the Federal government.

Several U.S. agencies have substantially increased their commitment to the Great Lakes and the goals of the Agreement during the past two years, most notably EPA and the Fish and Wildlife Service. To better provide interagency coordination, EPA has convened a Great Lakes Policy Committee which meets regularly and includes representatives from key federal agencies and all eight Great Lakes States. Internally, EPA has established a Great Lakes coordinating committee at the highest levels of the Agency. All of this activity contributes to ensuring that programs and regulations are consistent with the Agreement.

EPA uses additional approaches to ensure consistency of actions directed at Great Lakes protection and restoration. For example, EPA annually negotiates grant agreements with the States which implement shared EPA/State goals for Great Lakes protection and restoration. The Great Lakes Water Quality Initiative is an example of a joint initiative by the National and State governments. Another example is the recently announced joint pollution prevention initiative for the Great Lakes.

#### **A Shared Strategy for the Great Lakes**

During 1991, EPA in concert with States and partner Federal agencies have developed their first joint five year strategy for the Lakes to kick-off in FY 1992. Parties to the strategy include the eight States, the Department of Agriculture, the Army Corps of Engineers, the Coast Guard, the Forest Service, the Fish and Wildlife Service, the National Park Service, and the National Oceanic and Atmospheric Administration. The purpose of this strategy is to set forth a set of common or complimentary goals and objectives among the various Federal and State agencies with environmental stewardship responsibilities for the Lakes, as well as milestones for actions to reach these objectives. The strategy joins environmental protection agencies with natural resource agencies in pursuit of a common agenda. It is predicated on a bias for action, on taking practical, "on the ground" steps towards its long term goals. The Agency envisions that the strategy will be updated each year as more is learned about challenges facing the Lakes and as agencies successively target different problems.

The ultimate purpose of the strategy is that of the Water Quality Agreement—to restore and maintain the chemical, physical, and biological integrity of the Great Lakes ecosystem. To realize this purpose, the strategy has three long-term goals:

- Reduce Toxic Loadings: prevent and reduce releases of toxic pollutants and remedy past contamination, so as to preclude toxic substances in toxic amounts within the ecosystem.
- Protect and Restore Habitat: protect and restore wetland, land, and aquatic habitats vital for healthy communities of plants and animals, with an emphasis on the habitat needs of threatened species.
- Protect the Health of Human Residents and the Ecosystem's Living Resources: protect the health of human residents of the region and its plant and animal communities.

The strategy emphasizes the ecosystem approach, recognizing the interconnectedness of air, land, water, plants, wildlife, and humans. While the partners to the strategy recognize that full attainment of its goals is a long-term proposition, it spells out many of their practical steps over the next five years towards these goals.

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**IJC Recommendation I.4. The measures devised pursuant to the foregoing include provisions for initiation, implementation and coordination of action at all levels of government to enforce the enacted laws and/or regulations.**

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As noted in response to the first recommendation, strong enforcement of environmental laws is a key component of the U.S. strategy for toxic substances. This strategy relies on a system of laws that is strongly based on regulation and enforcement at all levels of government. Each major national environmental law has enforcement provisions. These provisions include administrative, civil and criminal remedies. Similarly, in receiving delegation, authorization and/or primacy to implement the nation's laws, each of the State's must be capable of enforcing those laws. POTWs subject to pretreatment program requirements must also be capable of enforcing against indirect users subject to pretreatment requirements. Indeed, all POTWs subject to pretreatment must prepare enforcement response plans.

EPA is increasingly adopting an integrated enforcement strategy. Traditionally, EPA has relied on enforcement under a single statute, addressing a single medium (air, waste, or water). The new geographic approach combines the authority of multiple statutes and will discourage the transfer of pollutants from one part of the environment to another (e.g., soil-to air). On a national basis, EPA will seek to make 25 percent of all enforcement actions in 1991 "multi-media" cases so as to address the overall pollution problem at a given facility.

During the past two years EPA and States have taken a record number of enforcement actions on a national basis. Examples of actions within the Great Lakes include:

- A \$2.1 million civil penalty, the second largest Clean Water Act civil penalty on record, from a paper company.

- Agreement to pay \$3.75 million in civil penalties by a waste management firm for violating PCB disposal requirements.
- Agreement to pay \$7.5 million for various offenses in handling hazardous wastes from an aluminum company.

EPA and States began two focused geographic initiatives in 1990 around the Grand Calumet Area of Concern and on the U.S. side of the Niagara River. These are resulting in numerous enforcement actions, including in the Grand Calumet area:

- Commitment of \$34.1 million for environmental improvements, sediment cleanup, and civil penalties, from a steel company.
- The filing of Federal and State lawsuits against 3 additional steel companies.
- Agreement with a municipal sanitary district to pay a penalty.
- Agreement with a town and an oil company to recover underground petroleum contamination.
- Issuance of Administrative Orders to Potentially Responsible Parties to cleanup two Superfund sites.

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**IJC Recommendation I.5. The Parties strengthen the principle of reverse onus in policies and programs concerned with the introduction of new chemicals, through appropriate legislation and or regulations that include mandatory pretesting prior to approval for production and use.**

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The U.S. toxic substance strategy includes programs based upon two statutes, FIFRA and TSCA, that provide a "reverse onus" on manufacturers regarding the introduction of new chemicals into production and use.

Under FIFRA, the U.S. has been reregistering pesticides to ensure that previously registered products measure up to current scientific and regulatory standards. No substance can be registered or reregistered unless it performs its intended function without posing unreasonable risk of adverse effects on human health or the environment. In conformance with this statutory standard, 200 of 611 chemical cases have not been reregistered. This has resulted in the elimination of 23,000 pesticide products in the U.S. The reregistration process is to be completed by the year 2000.

TSCA provides for the regulation of commercial chemicals with the objective of protecting public health and the environment from the adverse effects of toxic substances. This is accomplished by: prohibiting manufacturing, processing or distribution; limiting the amount of a substance which can be used in a mixture; and marking such substances with clear and adequate warnings as to use and disposal. Manufacturers must notify EPA 90 days prior to producing a new chemical or if there is a significant new use of an existing chemical (known as the Premanufacture Notice, or PMN). Over 15,000 new chemicals have been reviewed as a result of the PMN process since 1976.

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**IJC Recommendation I.6. The Parties, in their next biennial reports to the Commission pursuant to Annex 12: report on the extent to which discharges of the 11 critical pollutants previously identified by the Water Quality Board — and known to have serious detrimental effects on living organisms — have been explicitly considered in the issuance of NPDES permits and control orders; assure the commission that no municipal, industrial or Combined Sewer Overflow (CSO) of these substances are or will be permitted; assess and report on the extent to which these 11 substances are used, stored and released in the basin by nonpoint rural and urban sources, including landfills and groundwater, and the measures being taken to prevent their further release into the Great Lakes from these sources; and report on the extent to which monitoring is in place to confirm that the discharges of these chemicals are not occurring.**

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The U.S. has an active program to both control and monitor the eleven pollutants of primary concern to the Commission. This program is a longstanding one, going back to the 1970s when the problem of persistent toxic substances in the Great Lakes ecosystem was first recognized. The most successful solution to the problem has been to eliminate the substance or mixture from the U.S. economy. Thus, the registrations of many organochlorine pesticides have been canceled, including the four pesticides listed among the IJC priority substances. The use of Polychlorinated Biphenyls (PCBs) in open systems has been banned, and the use of PCBs in closed systems is being phased out.

In some cases, the U.S. has developed zero discharge effluent limits for the critical pollutants. Toxic pollutant effluent standards were promulgated in 1977 to result in "zero discharge" of aldrin, dieldrin, DDT, DDD and DDE, endrin, toxaphene, and PCBs from facilities involved in the manufacture, processing, or formulation of these substances. The standards covered process areas as well as storm water and other runoff from commercial and industrial sites.

The technology-based effluent guideline for the Organic Chemicals, Plastics and Synthetic Fibers (OCPSF) industrial category, promulgated in 1987, limits 63 organic substances, including hexachlorobenzene and benzo(a)pyrene. Thus, NPDES permits for each discharger within this category includes a limit for these substances. In addition, EPA is currently reviewing existing effluent guidelines for the pulp and paper and petroleum refining industrial categories. These guidelines are being reviewed to consider appropriate limits for dioxin, among other toxicants.

As noted earlier, NPDES effluent limits may be made more stringent than the national technology-based limits as needed to protect receiving waters. As a result of the 1987 Clean Water Act amendments, the NPDES regulations have been strengthened to accelerate the development of water quality-based limits designed to meet ecosystem objectives. Another significant regulatory action has been the inclusion of bleached kraft mills on EPA's list of facilities meriting water quality-based permits, due to the presence of dioxin in their effluents.

As a direct result of the effectiveness of the National Pretreatment Program, an overwhelming majority of POTWs subject to that program have established local user limits for toxic metals, including lead and mercury. EPA's recent Report to Congress on the National Pretreatment Program reports that over 90% of the 200 treatment systems sampled had pretreatment requirements for lead

and over 75% had limits for mercury. Another illustration of regulatory effectiveness is that point source loadings of toxic chemicals to the Niagara River fell by 80 percent from 1980-1986. The established local limits reflect the need to protect water quality, and are enforceable against industrial users of the treatment system. The U.S. will continue to develop controls for these pollutants. For example, the proposed Federal municipal sludge regulations foresee permitting for the following substances: benzo(a)pyrene, dieldrin, PCBs, toxaphene, lead and mercury. The U.S. is also taking actions to reduce pollutants from Combined Sewer Overflows (CSOs). The end result of these actions, while targeted at solids removal, will be a net decrease in the discharge of toxicants. However, because of residual amounts of the 11 IJC priority substances present in the environment it is unlikely that zero discharge in overflows or storm flows can be achieved in the foreseeable future.

Even where there are not limits for specific pollutants in discharge permits, EPA and States have instituted, and continue to apply, biomonitoring requirements on dischargers. These require exposure of living organisms to discharge effluent on a routine basis to detect toxicity in discharges from any and all pollutants. This all inclusive detection of toxicity buttresses the NPDES program, often triggering enforceable limits when problems are detected.

There are many ways in which the United States monitors for contaminants, including the 11 of concern to the Commission, throughout the ecosystem and follows up to take action to address contamination when it is discovered. Through their waste programs, EPA and States assess ground water contamination in many places throughout the Great Lakes watershed. For instance, EPA and New York State have been studying ground water loadings to Niagara River over many years. They have estimated the 20 most significant waste sites that are sources of 99 percent of the loadings, and have set a goal of fully remediating these sites by 1996. There are about 140 Superfund sites in the Great lakes watershed, and over 600 treatment, storage, and land disposal sites for waste, regulated under RCRA permits. All Superfund cleanups involve ground water studies and if necessary purging. RCRA sites must be operated in accordance with regulations to protect the environment; when sites are found to have any of the 11 contaminants of concern, they must take corrective action. The United States also regulates underground discharge of waste and has programs that monitor and protect ground water quality.

In summary, the U.S. is taking action wherever possible to eliminate pollutants, including the 11 priority substances. In addition to programs for prevention, control and remediation, two additional management approaches are proving increasingly useful: action planning and disclosure requirements. Disclosure or community right to know requirements are creating new accountability on the part of users and providing valuable information on where to focus monitoring or other efforts. Action plans, both Remedial Action Plans and Lakewide Management Plans, are developing and organizing information on problems caused by persistent toxic substances, their sources and needed actions. This new perspective is focusing attention on identifying the importance of various sources and pathways and the actions needed to address them. Progress in both disclosure and action plans and their implementation is fulfilling the intent of the Agreement.

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**IJC Recommendation I.7. The Parties designate Lake Superior as a demonstration area where no point source discharge of any persistent toxic substance will be permitted. This recommendation should not prejudice or delay the implementation of our other recommendations.**

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Representatives of the federal governments of Canada and the United States, the Province of Ontario, and the States of Michigan, Minnesota, and Wisconsin are developing a bi-national program to protect and restore the Lake Superior ecosystem to respond to this recommendation. The program has three components: pollution prevention, designation of the Lake as a special resource, and enhanced controls that further restrict discharges. Moreover, the program is intended to go beyond the Commission's focus on point sources, and address impacts on the Lake Superior ecosystem from all sources of certain persistent bioaccumulative toxic substances including air deposition and nonpoint sources.

The pollution prevention component includes making Lake Superior a focal point for implementation of pollution prevention programs; and educational, technical assistance, citizen dialogue programs to foster the ethic of pollution prevention in the basin.

The special protection component includes State designation of the U.S. portion of the basin as a special resource and enhanced antidegradation requirements applied to any proposed new or increased discharge of certain persistent bioaccumulative toxic substances into those waters; additionally, no new or increased point source discharges of persistent bioaccumulative toxic substances would be permitted in certain State designated special areas; and a Canadian federal-provincial designation for Lake Superior under the Canada Water Act.

The controls component includes the common water quality standards and implementing procedures for the basin developed under the Great Lakes Water Quality Initiative; consideration of bans and/or sunset provisions for persistent bioaccumulative substances; and updated U.S. controls on point and nonpoint sources of persistent bioaccumulative toxic substances.

The Lake Superior program also includes a broader program to protect and restore the Lake Superior ecosystem using the Lakewide Management Planning (LaMP) process to identify impairments, responsible sources and necessary control measures; coordinated habitat protection and restoration as well as fisheries management activities; and parallel Remedial Action Plan development and implementation.

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**IJC Recommendation I.8. The Parties sponsor and fund research projects to:**

- Replicate and expand on studies which demonstrate relationships between chemical exposure and human health in the Great Lakes basin and elsewhere;
  - Identify other exposed populations and biological species and investigate the effects of chemical exposures on them.
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The U.S. continues to fund research that examines the potential effects of chemical exposures on human health and the environment. The U.S. plans to expand research activities to respond to the Agreement and statutory require-



ments. Recognizing the inherent difficulty in conducting such studies that link human health and water quality, the U.S. has sponsored several technical workshops over the last four years to determine how to evaluate the risks to human health associated with exposure to toxic chemicals in the Great Lakes ecosystem. More recently, the U.S. has supported the establishment of a binational Health Issues Committee in 1990 to coordinate and communicate U.S. and Canadian efforts in the human health arena. The Committee will not only seek to fulfill the requirements of the Great Lakes Water Quality Agreement (GLWQA) but also serve to facilitate the development of a human health report to Congress by 1994, as required under the Great Lakes Critical Programs Act. At the present time, EPA is working with the Agency for Toxic Substances and Disease Registry to plan the study.

The U.S. is also beginning a program of study related to atmospheric deposition in the Great Lakes region in response to the 1990 amendments to the CAA. This program will investigate the sources of airborne toxic pollutants and evaluate any effects on public health or the environment. Part of this investigation will entail sampling for such pollutants in fish and wildlife. Findings from this and other data collection efforts will be used (1) to assess whether the contribution of airborne toxics violate water quality standards or drinking water standards, and (2) to reassess whether current provisions are adequate to prevent serious adverse effects to human health or widespread environmental effects, taking into account the pollutants' tendency to bioaccumulate. The amendments also call for the promulgation of additional regulations, if necessary, by 1995.

The U.S. continues to support surveillance and research projects that monitor toxic pollutant levels in fish and wildlife populations. These projects are based mostly on the Great Lakes International Surveillance Plan, a cooperative plan first developed by the U.S. and Canada in 1976 that provides a framework for the ongoing biological monitoring and research in the Great Lakes Region. Within this framework, the U.S. sponsors the Great Lakes Fish Contaminant Monitoring Program, a cooperative program among 20 State and Federal agencies that has been collecting and analyzing levels of toxicants in fish tissue since 1977. In addition, the U.S. has been collecting fish and sediment to study the bioaccumulation of chemicals in fish as part of the ARCS Program. The interagency Green Bay Mass Balance Study is examining the importance of various food and water pathways of PCB accumulation by fish. The U.S. is also conducting studies to assess the effects of contaminants on Great Lakes wildlife, such as bald eagles, colonial waterfowl, mink and otter, in many of the U.S. wildlife refuges and is also conducting surveys to assess natural resource damages at several Superfund sites and Areas of Concern.

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**IJC Recommendation II.1. The Parties and jurisdictions fully inform and involve local governments with respect to their potential contribution towards achieving the Purpose and Objectives of the Agreement, and local governments accept responsibility to assist in the implementation of the Agreement.**

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The U.S. fully involves State and local governments in achieving the Purpose and Objectives of the Agreement. Their involvement is primarily effected

through their participation in developing RAPs and LaMPs and the Great Lakes Strategy. The U.S. views local governments as "stakeholders" and their involvement as essential in the development process. To this end, they are involved fully in the RAP and LaMP processes, from establishing the goals of the RAPs to defining the problems, proposing remedial actions, and implementing the solutions. Local government representatives are also members of Lakewide Advisory Councils established for Lakes Michigan, Superior, and Ontario. Implementation of the Agreement and the plans relies on the full range of U.S. environmental programs, that are administered primarily by EPA on the Federal level and the States in partnership.

Relationships among stakeholders are also strengthened through their participation in other cooperative efforts, such as the U.S. Policy Committee for the Great Lakes, the Great Lakes Water Quality Initiative, Great Lakes Environmental Administrators, and Coastal America. In all of these efforts, an interagency forum is created for resolving issues and overseeing program coordination. These efforts principally involve Federal and State stakeholders, and rely upon the individual States to communicate, coordinate, and involve local governments in these efforts.

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**IJC Recommendation II.2. The Parties and jurisdictions review and strengthen Great Lakes fish consumption advisories as necessary, and re-evaluate stocking programs for those fish which pose a threat to the health of animals and humans when consumed.**

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EPA is following two approaches to address the risks posed to human health from fish contamination. The first is to ensure that water quality criteria for the Lakes, and thus the regulatory actions which derive from these criteria, are fully protective of human and ecological health. EPA shares responsibilities with States, under the Clean Water Act, to protect the quality of surface waters through establishment of State Water Quality Standards and the regulation of water dischargers under the National Pollutant Discharge Elimination System (NPDES). State standards must protect humans from the risks posed by consumption of contaminated fish. In view of the unique features of the Lakes, EPA and States consider that in some cases water quality criteria specific for the Lakes are needed to fully protect aquatic life, wildlife, and human health. EPA and the Great Lakes States began the Great Lakes Water Quality Initiative in 1989 to develop EPA guidance to States for water quality criteria for the Great Lakes Basin, implementation procedures, and a Great Lakes antidegradation policy, in order to ensure that Great Lakes environmental needs are fully incorporated into State water quality programs. EPA anticipates publishing proposed guidance, developed under the Initiative, in early 1992.

The second approach is to provide technical guidance to responsible public health authorities to help them assess risks posed by contaminants in fish. In 1989, EPA released a national guidance manual on assessing human health risks from chemically contaminated fish and shellfish. As public health authorities follow this guidance in their ongoing fish contaminant monitoring programs, they will base fish advisories upon estimates of risk. This will provide

strengthened fish advisories as warranted and a more consistent approach among jurisdictions in their issuance of advisories.

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**IJC Recommendation II.3. The Parties prepare and urge the use of comprehensive public information and education program.**

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The U.S. encourages public participation through its education and outreach efforts. Public participation is a critical element in many Great Lakes efforts, including the GLWQI, ARCS, RAPs, and LaMPs. Each of these efforts ensures public participation by involving public advisory groups including members from public interest groups and industry. Public outreach materials are an integral part of the public participation process. For example, to keep participants informed, RAP stakeholders sponsor newsletters, public meetings, and other outreach activities. In recent months, the Great Lakes Sea Grant network was given funding by EPA to develop a public information program, that includes educational materials, water quality education programs, fact sheets and seminars, as part of the outreach effort for LaMPs. In the ARCS program, slide-show/video presentations and public meetings near the priority areas are used to inform the public about ongoing field work, research activities, and results from the study.

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**IJC Recommendation II.4. The Great Lakes States and Provinces incorporate the Great Lakes ecosystem as a priority topic in existing school curricula.**

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The U.S. agrees that the concept of the Great Lakes ecosystem should be incorporated into existing school curricula. Over the years, there have been many efforts to develop educational materials for teachers to give them ideas on how to teach children about the Great Lakes. A recent compilation of these efforts was recently published as part of the Marine Education Bibliography of Educational Material Available from the Nation's National Sea Grant College Program (1991). For example, a curriculum guide entitled "Our Great Lakes Connection," for grades kindergarten through twelve was developed in 1985 by the University of Michigan, and a teachers guide of educational activities, entitled "Appreciating Your Great Lakes," was published in 1989.

More recently, nonprofit organizations have incorporated the theme of the Great Lakes ecosystem in education materials for several Areas of Concern. And the Lake Michigan Federation was funded by EPA to produce teaching materials, entitled Great Lakes in My World, which is now being piloted in three school districts. However, efforts to engage students are not limited to developing curricula. EPA recently sponsored a contest among elementary school students to select a name for the new EPA vessel, the Lake Guardian, along with an educational brochure entitled Great Minds? Great Lakes for all participating teachers. EPA's new research vessel, the Lake Guardian, will support information and outreach efforts by allowing educational tours of the ship at ports of call.

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**IJC Recommendation II.5. Jurisdictions use Great Lakes Areas of Concern as focal points for the development of educational programs and materials.**

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The U.S. recognizes the need to use Areas of Concern as focal points in educational materials about the Great Lakes. Many projects currently underway center around the development of educational materials about the development of RAPs. The Great Lakes Sea Grant Network is in the process of developing fact sheets about Areas of Concern, RAPs and LaMPs, as well as material to educate the public about how to enter into the public participation process for RAP development.

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**IJC Recommendation III.1. The responsible Parties and jurisdictions revise all RAPs that the Commission has found do not meet Stage I requirements.**

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The U.S. views the Remedial Action Planning process as a valuable ongoing management process to identify priority environmental problems and the steps needed to resolve these problems. RAPs will undergo continual improvement as more is learned about the problems of the Areas of Concern and as warranted by the results of preventive and remedial measures. At the same time, EPA, States and other participants do not delay warranted actions while plans are being developed. RAPs are proceeding along two tracks: development of the plan for full restoration, and immediate actions as warranted.

While the planning process is valuable and continues, the United States recognizes the importance of actions "on the ground" to protect and restore Areas of Concern. The U.S. has taken, and will continue to take, a great number of actions in Areas of Concern.

Some summary statistics and some examples of these actions are as follows:

- EPA and States took enforcement actions against industrial dischargers in 3 Areas of Concern.
- Multiyear programs to eliminate or treat combined sewer overflows are in progress for 10 Areas of Concern.
- Recent and continuing upgrades to municipal sewage treatment are helping 5 Areas of Concern.
- Superfund cleanups are in progress in 14 Areas of Concern.
- EPA and States are taking multiple hazardous waste program actions directed at 5 Areas of Concern.
- Federal and State agricultural pollution control programs are addressing 5 Areas of Concern.

Examples of what some of these many actions entail:

- Removal of 300,000 lbs of PCBs from contaminated sediments in Waukegan Harbor, Illinois.
- Removal of 32,000 cubic meters of PAH contaminated sediments from the Black River, Ohio.
- Removal of 2,700 cubic yards of PCB contaminated sediments from the Sheboygan River, Wisconsin. An additional 1,500 square yards of sedi-

ment were isolated and the cleanup design and implementation continue.

- An investment of over \$500 million in Milwaukee, Wisconsin sewage treatment since 1972.
- Treatment upgrades by municipal and industrial dischargers along such waters as the Fox River in Wisconsin and the Cuyahoga River in Ohio have brought encouraging improvements in water quality and aquatic life. Dissolved oxygen has been restored to 30 miles of the Cuyahoga and to the Fox, allowing the return of pollution sensitive fish species, plants, and plankton.

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**IJC Recommendation III.2. The responsible jurisdictions accelerate the preparation and submission of RAPs for the remaining Areas of Concern and provide the technical and financial resources needed for their implementation.**

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The U.S. is accelerating the developmental process for RAPs for all Areas of Concern, in response to statutory deadlines in the Great Lakes Critical Programs Act. Stage I and II RAPs for 26 United States, 12 Canadian and five U.S./Canadian RAPs either have been or are being developed. For the 31 RAPs for which the U.S. has either sole or partial drafting responsibility, 20 Stage I and seven Stage II RAPs have been provided to the IJC for review. Of these, the RAP for Green Bay, Wisconsin has been approved for incorporation into that State's water quality management plan. Incorporation of the Maumee River RAP into Ohio's water quality management plan is pending the Governor's approval. By January 1, 1993, a total of 29 Stage I and 25 Stage II RAPs are expected to be submitted to the IJC and subsequently incorporated into state water quality management plans. EPA and the States are working together to complete development of RAPs as soon as possible, without sacrificing the widespread public involvement necessary for successful implementation, and attainment of environmental benefits. Towards this end, a State/EPA RAP Workgroup has been instituted to provide the States with a forum in which to coordinate RAP development and implementation, discuss issues, and resolve problems. The workgroup meets bimonthly. Through this workgroup, the States and the EPA are working to ensure that RAPs are incorporated into State water quality management plans in accordance with Great Lakes Critical Programs Act (GLCPA) deadlines. In 1991, EPA increased funding to States for RAP development by about \$2 million and assigned an EPA staff person to each development effort.

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**IJC Recommendation III.3. The Parties and jurisdictions encourage the participation of interested organizations and individuals throughout RAP development and implementation by sustaining community participation groups already established, and creating comparable institutional mechanisms in other Areas of Concern.**

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The U.S. endorses this recommendation and continues to put it into practice. Grass roots participation increases governmental responsiveness to the public, fosters public stewardship of natural resources and fosters responsibility for the environment in day-to-day individual and business decisions.

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**IJC Recommendation III.4. The jurisdictions include a detailed plan for public participation as part of the Stage I submission of RAPs.**

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The U.S. endorses the concept of including a plan for public participation as part of the Stage I submission of RAPs. The United States is strongly committed to grass roots, local involvement in the Remedial Action Planning process in order to harness public energies, to increase the responsiveness of governments to local needs, and to build local support for restoration of Areas of Concern. In general, public participation in Remedial Action Planning has been and continues to be extensive and vital.

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**IJC Recommendation IV.1. The Parties increase pilotage requirements for all vessels carrying oil and hazardous substances in the Great Lakes.**

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With the passage of the Oil Pollution Act of 1990 (OPA 90), the U.S. has taken several actions to increase pilotage requirements for all vessels carrying oil and hazardous substances. Among the most relevant measures are new requirements that review an individual's record regarding drug and alcohol use before the issuance of licenses and registry documents, new operation conditions that limit daily work hours, and a requirement that give lower officers the ability to remove the tanker master if they suspect the master is under the influence. In addition, OPA 90 provides requirements and procedures for reviewing foreign standards of manning, training, qualification, and watchkeeping.

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**IJC Recommendation IV.2. The Parties improve communication and tracking of all vessels carrying oil and hazardous cargoes.**

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The Coast Guard tracks vessels carrying oil and hazardous cargoes at port entry and exit and during cargo transfer operations. To this end, Coast Guard Districts and Captains-of-the-Port can impose requirements, such as advance notification of arrival and departure, on vessels within their jurisdiction.

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**IJC Recommendation IV.3. The Parties enhance the capability of the Coast Guard and other relevant agencies to respond to all spills of oil and hazardous polluting substances.**

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The U.S. agrees and is taking steps to enhance the its capability to respond to spills. The Coast Guard operates nine marine safety units, seven marine safety offices and two Captain-of-the Ports, to monitor spill clean-up activities and conduct clean-up activities when necessary. To enhance spill response coordination efforts with Canada, the Coast Guard periodically participates in a binational spill response exercise conducted under the U.S.-Canada Joint Marine Pollution Contingency Plan. The most recent such exercises were in February 1989 and September 1990.

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More recently, the Coast Guard received funding under OPA 90 to purchase \$540,000 worth of new equipment for spill response in the Great Lakes and add a district response group to provide quick, first-aid response to spills when necessary. Coordination of these efforts will be also be improved with the recent establishment of a third strike team in Fort Dix, New Jersey, which is charged with increasing cooperative efforts with Canada in the Great Lakes Region. One of the first Strike Force's tasks is to carry out an international equipment inventory in the Great Lakes Region.

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**IJC Recommendation IV.4. The Parties review adequacy of funding for spill-related monitoring and enforcement.**

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The U.S. fully agrees and recognizes the need for a review of the U.S.'s spill response capabilities. As discussed in IV.3., the Coast Guard is currently working with the Great Lakes Commission and other Federal agencies to produce an inventory of spill response equipment and personnel in the Great Lakes Region, as required by OPA 90. Data from the inventory will be compiled and entered into a database that will provide accurate and current analysis of spill response capabilities for any given geographic area in the Great Lakes. At the same time, EPA is working with the Coast Guard to identify Great Lake areas prone to frequent or voluminous spills of oil and hazardous materials and is on schedule to complete this in 1991.

These efforts will aid in supporting other requirements under OPA 90, such as the development of comprehensive area contingency plans and spill plans for vessel and facility owners and operators that must identify the resources necessary to respond to a "worst-case" spill scenario. In the review of these plans, the Coast Guard will have an opportunity to assess whether the response capabilities are sufficient and determine whether adequate private sector resources are available for response. If necessary, the Coast Guard has the authority to either ensure the resources are available or terminate vessel or facility operations. Once all of these different activities are complete, the U.S. will have an additional level of knowledge upon which to assess the adequacy of funding for spill-related monitoring and enforcement.

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**IJC Recommendation IV.5. The Parties examine the extent to which the provisions of Annexes 4, 5, 6, 8 and 9 have been complied with, and take appropriate steps to remediate any deficiencies.**

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The U.S. Coast Guard is in the process of completing a review of progress in fulfilling the terms of Annexes 4, 5, 6, 8 and 9 which will be shared with the Commission upon completion.

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**IJC Recommendation V. In order for the Commission to better assist the Parties in implementing the Agreement, the Parties should respond to the Commission's recommendations following every other semi-annual meeting of the Parties. This response should include the status with respect to implementation of these recommendations or the reasons why a delay has occurred or action has not been taken.**

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The U.S. notes that during the past year, the frequency of meetings between high level EPA officials and the Commissioners have increased, resulting in improved communications. The U.S. remains committed to providing the Commission with the information it needs. The U.S. looks forward to the renewed role of the Commission in analysis and evaluation of the Parties' programs and progress and in hearing from the Commission in this regard.



