Great Lakes Regional Collaboration
Nonpoint Source Strategy Team

Problem Statement

Nonpoint source pollution negatively impacts the ecological health and integrity of the Great Lakes. It damages flora and fauna in the lakes, threaten human health, reduces recreational opportunities, and increases the cost to treat drinking water and to dredge our harbors and marinas. The following stressors represent a significant impediment to the protection and restoration of the Great Lakes.

- **Nutrients** – Lake Erie and shallow embayments in other areas of the Great Lakes are still experiencing accelerated eutrophication including serious oxygen depletion and harmful algal blooms in part due to rural and urban nonpoint sources of nutrients. Recent large-scale die-offs of fish and waterfowl in Lake Erie are attributed to botulism, a disease caused by a powerful neurotoxin produced in oxygen-deprived lake zones by the bacteria *C. botulinnum.*

- **Contaminants** – Many persistent bioaccumulative toxics (PBTs), including PCBs and mercury, are still present at levels in the Great Lakes ecosystem that pose a threat to human health and the environment. As a result, health agencies have issued consumption advisories for certain species affecting broad areas of the Great Lakes basin. PBTs continue to be introduced into the Great Lakes and tributaries through atmospheric deposition, sediment resuspension, as well as through urban and agricultural run-off. The Great Lakes ecosystem and beneficial uses are also potentially at risk due to non-point releases of new chemicals of concern including certain brominated flame-retardants and animal pharmaceuticals (e.g., hormones and antibiotics).

- **Sediments** – Storm water runoff from urban and rural developments that do not incorporate best management practices as well as agricultural and forestry practices that do not employ conservation measures are adding excessive sediments as well as other pollutants to the Great Lakes and tributaries. These sediments are seriously impacting aquatic habitats including the ecological integrity of riverine and coastal and near-coastal wetlands.

- **Alteration of Flow Regimes** – Excessive flows from impermeable surfaces in developed areas and from drained agricultural lands in the Great Lakes basin, exacerbated by the loss of wetlands and the removal of natural, riparian vegetative cover, continue to alter natural groundwater and surface water flow regimes to the detriment of aquatic species. These flow alternations often associated with the

reduction in groundwater recharge also tend to: diminish base flows; increase flooding, bank erosion, and channel instability; and, elevate stream temperatures. The combined effects of these flow alterations result in the reduction in the quantity and quality of physical habitat available.

- **Pathogens Affecting Human Health** – Bacterial contamination contained in runoff from animal feeding operations, and from a variety of diffuse sources in urban areas, continue to limit the recreation use of tributaries and Great Lakes shoreline swimming beaches.

Successfully addressing nonpoint sources of water pollution is critical to the restoration of the Great Lakes ecosystem. The basic sources and pathways of nonpoint source pollution are reasonably well understood. The overall problem in addressing nonpoint source pollution lies in coordinating the variety of entities with responsibilities and programs intended to mitigate pollution impacts. Nonpoint source pollution comes from an array of diffuse sources, and similarly, there are an assortment of diffuse Federal, State and local entities that have mandates to address the problem. Addressing nonpoint sources is further compounded by the fact that unlike point sources of waste discharges, impacts associated with storm water runoff and the contaminants found in air deposition reach the Great Lakes and tributaries through an array of diffuse sources that cannot be effectively regulated with traditional end-of-the pipe controls.

Federal, state and local efforts to address nonpoint problems have had only limited success. Clean Water Act based Total Maximum Daily Loadings (TMDLs), Phase I and Phase II Storm Water National Pollution Discharge Permits for urbanized areas, various USDA programs to assist in the implementation of best management practices on agricultural properties, and a variety of other federal programs are not well coordinated or integrated, do not optimize the current investment of public resources to address nonpoint problem, and do not incorporate adequate monitoring to measure their success.

Notes for Further Consideration

[Note: The following capture some of the additional comments at the first meeting in Chicago, and comments provided during the review, but may represent more the Recommendations, Conclusions, or differences of opinion that need to be resolved by the whole group rather than in the current Problem Statement. They are included here to make sure that they are considered as the strategy develops. <u>We may find that the resolution of some of these points will require some modification of the problem statement at a later date. Changes/additions from earlier drafts shown in **bold.**</u>

1. A new innovative watershed approach to control of nonpoint source impairments is needed that will guide local agencies, citizen groups, and state and federal agencies to

- Optimize the effectiveness and efficiency of existing programs and activities
- Remove barriers to and encourage cooperation and integration of public and private efforts
- Develop holistic, ecological approaches, including a framework for establishing priorities to address all sources of impairments within a watershed and methods for measuring progress, and
- Identify those approaches and activities that should receive increased resources to achieve protection and restoration of the Great Lakes and tributary waters

2. Despite literally billions of private and public dollars invested to improve wastewater treatment over the last thirty years, the Great Lakes and tributary waterways in many areas are still seriously impaired due to the continuing pollution and alteration in natural flow regimes associated with storm runoff from urban and rural lands; and contaminants found in air depositions. {**Should emphasize investments to date have had significant benefits, but to realize Great Lakes restoration, nonpoint sources need to be addressed as well}**

3. There are examples of successful approaches to addressing nonpoint impacts, but most are under-funded; constantly face constraints imposed by current federal and state regulatory policies designed to address traditional point source problems; and, struggle to coordinate the variety of nonpoint public regulatory, grant and assistance programs that function independently without a common strategy or strategic focus. Regulatory efforts like the NPDES Phase II permit program and Total Maximum Daily Load (TMDL) program have appropriate roles in the mix of tools necessary for the management of nonpoint sources of pollution. They are, of course, not the only response needed to protect and restore the Great Lakes and its tributaries.

4. For the most part, land use programs that have the greatest potential to impact nonpoint source pollution are administered by municipalities or local units of government. However, the majority of water quality programs are administered at the state and regional level.

5**. The widely held perception among the public that Great Lakes pollution problems are the result of industrial and municipal wastewater discharges (point sources) that have already been addressed must be changed before significant progress can be made in addressing nonpoint source pollution sources.**

6. Should we address groundwater pollution issues in the NPS group? --If not where in the strategy recommendation?

7. Should we limit pathogens to those that raise human health issues or are we concerned with pathogens from NPS that may affect other organisms?