Potential Partners in Promoting Watershed-Based NPDES Permitting:
An Analysis of Watershed Organizations

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INTRODUCTION

The U.S. Environmental Protection Agency (EPA) is promoting watershed-based permitting under the National Pollutant Discharge Elimination System (NPDES) program to further the objectives of the 1994 NPDES Watershed Strategy. EPA believes that aggressive promotion of watershed-based NPDES permitting can result in a number of benefits, including:

- Produce better watershed based decisions;
- Emphasize measurable improvements in water quality;
- Provide greater opportunities for trading and other market based approaches;
- Reduce the cost of improving the quality of the nation's waters;
- Foster more effective implementation of watershed implementation plans, including total maximum daily loads (TMDLs); and
- Realize other ancillary benefits beyond those that have been achieved under the Clean Water Act (CWA).

To further promote watershed-based NPDES permitting, EPA is developing a variety of resources to provide NPDES permitting authorities and point source dischargers with the ability to initiate and implement this approach. These resources will address the incentives and mechanisms necessary to foster comprehensive assessment of watershed goals and current status, promotion of an agreed-upon watershed monitoring strategy, and participation and buy-in by all major watershed stakeholders.

Part of EPA's recent efforts to promote watershed-based NPDES permitting and develop related resources has included a review and analysis of numerous watershed organizations operating throughout the country. By gaining a better understanding of their capacity and functions, EPA will have the ability to identify opportunities for watershed organizations to act as partners in watershed-based NPDES permitting activities. Through the review and analysis of watershed organizations, EPA sought to achieve the following goals:

- To identify the functions of watershed organizations that could directly or indirectly support watershed-based NPDES permitting efforts;

- To identify watershed organizations that have, or could be given, legal authority to enforce requirements for multiple point sources contained within a watershed based permit (see above for description of Single NPDES Permit to a Watershed Entity); and

- To identify possible opportunities for watershed-based permitting pilot projects that could demonstrate the role of watershed organizations in implementation.

This report contains EPA's findings through the review and analysis of watershed organizations at the regional, state, and local levels throughout the country.

EPA has supported a watershed approach to permitting under the NPDES program for many years. In its latest effort to support this approach, EPA is developing a plan that builds on the existing NPDES Watershed Strategy and other previous activities to create a framework for watershed-based NPDES permitting. This plan will initiate a process for educating stakeholders about the benefits of watershed-based permitting, facilitating stakeholder involvement to achieve buy-in, and moving from concept to implementation.

Unlike the traditional approach to NPDES permitting, the watershed-based approach looks at all point source discharges and nonpoint source contributions within the watershed boundary to identify opportunities to streamline, integrate, and synchronize both the permitting process and permit requirements. The process is to use a methodology similar to that used in developing total maximum daily loads (TMDLs) to support the development of water quality-based permits. All sources contributing pollutants need to be identified to ensure that when the total load is allocated, the allocations result in the water quality standard being attained. This means site specific data are very important, and the data need to be comprehensive. The sources of pollutants and the quantity from each source must be determined. To collect these data, it will be necessary to develop an integrated and cooperative partnership between many groups. In many cases, the data needed for making watershed-based permitting decisions will need to be collected from a number of different sources (e.g., federal agencies, universities, permittees, states, etc.).

Another component of the TMDL-like methodology is stakeholder involvement. Because data will need to come from many sources and the permits will be developed based on decisions related to allocation of loads among many sources, these sources and other interested parties will need to be involved in the process. The earlier interested groups are involved, the more efficient the process will be. This need for stakeholder involvement is not unique to a TMDL-like methodology; it is considered necessary for successful watershed management (NRC 1999, Heathcote 1998).

Under traditional NPDES permitting, an individual permit addresses discharges from a specific point source discharger. A general permit lacks the customization of an individual permit; instead, it applies to all dischargers in a particular category (e.g., confined animal feeding operation) or with a particular type of discharge (e.g., storm water discharge associated with industrial activity). In the traditional context, EPA has mechanisms in place to streamline permitting by allowing nearby point sources to obtain permit coverage as co-permittees (e.g., municipal separate storm sewer systems (MS4s) under the Storm Water Program) or creating an individual permit for a point source that addresses all of its requirements for multiple NPDES program areas (e.g., pretreatment, storm water, and effluent discharges). EPA is considering variations of traditional general and individual permitting approaches to serve as watershed-

based permits. Provided below are brief descriptions of the types of permits EPA intends to promote through watershed-based permitting.

- **Watershed-based General Permit - Common Sources.** An NPDES permitting authority would develop and issue this type of general permit to a common group of point sources within a watershed, such as all publicly owned treatment works (POTWs) or all confined animal feeding operations (CAFOs) or all storm water discharges from municipal separate storm sewer systems. This is similar to current general permits, except that the watershed boundary defines who is eligible for coverage (i.e., type of discharge/facility is not the sole eligibility criteria). The most significant difference between a traditional general permit and the watershed-based general permit for common sources would be permit requirements that reflect watershed-specific goals.

- **Watershed-based General Permit - Collective Sources.** Unlike the watershed-based general permit described above, this type of permit would address all or several groups of point sources within the watershed. This type of permit would be similar to the multi-sector general permit for storm water discharges associated with industrial activity (i.e., common permit conditions that apply to all dischargers followed by a series of discharge/facility-specific conditions). Again, the distinguishing feature of this type of permit would be the watershed-boundaries serving as the basis for eligibility and the permit requirements reflecting watershed-specific conditions and/or goals.

- **Watershed-based Individual Permit - Co-Permittees.** Similar to the approach used for co-permitting Phase I MS4s, this type of permit would allow several point sources within a watershed to apply for and obtain permit coverage under an individual permit.

- **Integrated Municipal NPDES Permit.** This type of permit would bundle all NPDES permit requirements for a municipality (e.g., storm water, combined sewer overflows, biosolids, pretreatment, etc.) into a single municipal permit. While this type of permit would focus on municipal boundaries rather than watershed boundaries, the analysis in developing permit requirements would reflect watershed conditions and goals.

- **Single NPDES Permit to a Watershed Entity.** Under this type of permit, an empowered watershed entity would obtain permit coverage and commit to controlling all point source discharges, including coordinating monitoring requirements and enforcing permit conditions. This type of permit would require states to have passed enabling legislation that gives watershed entities the necessary authority.

Both the concept and implementation of watershed-based permitting will evolve as EPA takes steps to craft an effective framework building on past efforts. EPA is currently reviewing existing watershed activities and permitting efforts that may serve as a precursor to watershed-based permitting (e.g., basin-wide NPDES permitting) as part of the framework development effort. EPA recognizes that regional, state and local watershed organizations perform many key functions related to watershed management that could not only help guide the development of EPA's watershed-based permitting framework, but also support its implementation.

DESCRIPTION OF APPROACH FOR REVIEW AND ANALYSIS

The number of watershed management initiatives active throughout the U.S. is estimated at 3,000 by the Department of the Interior. Given this large number, EPA devised an approach for reviewing and analyzing a cross-section of successful of organizations engaged in watershed management. Through previous research efforts, EPA identified states that embrace and support the watershed approach to water resource management. EPA concluded that strong examples of flourishing watershed organizations are likely to exist in states that support watershed management. A state can demonstrate support for this approach in a variety of ways including watershed-specific legislation, watershed oriented grant programs, and basinwide planning and management efforts (e.g., basin monitoring programs, synchronized NPDES permitting on a basinwide basis, watershed management planning initiatives, etc.).

Based on existing knowledge of watershed management and the assumption stated above, states identified by EPA for further investigation included:

- Florida
- Georgia
- Idaho
- Indiana
- Kentucky
- Maryland
- Massachusetts
- Michigan
- Minnesota
- New Jersey
- North Carolina
- Ohio
- Oregon
- Texas
- Vermont
- Virginia
- Washington.

EPA believes that this list of 17 states provides sufficient geographical distribution to ensure that the analysis is representative of watersheds throughout the country. Using this list, EPA then conducted comprehensive Internet research to identify examples of varying watershed organizations in each state. Watershed organizations differ in type (e.g., quasi-governmental to non-profits), structure (e.g., formal operating charters to informal volunteer-based committees), funding sources (e.g., membership dues to Congressional appropriations), and function (e.g., mass media educational campaigns to quarterly newsletters). All types of watershed organizations may have the potential to play a role in watershed-based NPDES permitting, therefore it was important to EPA to ensure the analysis contained a diverse mix of groups.

Between one and three groups per state were selected for this review. Using primarily information available on the Internet, EPA collected information on characteristics of each organization that could influence its ability to support watershed-based NPDES permitting implementation. Characteristics examined included:

1. Type of organization
2. Geographic scope
3. Mission/Goals
4. Organizational structure
5. Functions
6. Funding and resources
7. Involvement in NPDES-related activities.

If an organization's web site did not provide information about one or more of these characteristics, a member of the organization was contacted via phone to obtain more detailed information.

The remainder of this report presents the findings of EPA's review and analysis of watershed organizations. Section 2 provides a summary of the watershed organizations reviewed for this report. Section 3 provides an analysis of the organizations and the potential role that these groups can play in implementing watershed-based NPDES permitting based on their current goals and activities. The appendix to this report contains a summary fact sheet for each organization reviewed and presented in Section 2.

SECTION 2. SUMMARY OF WATERSHED ORGANIZATIONS

This section presents summary information about the watershed organizations reviewed as part of the watershed-based NPDES framework development process. As stated in the previous section, EPA selected organizations for this review and analysis within states identified as proponents of the watershed approach. From the 17 states identified as supporting the watershed approach, EPA reviewed and analyzed a total of 29 watershed organizations. Table 2-1 below provides a list of the watershed organizations included in this report organized by state.

A series of fact sheets highlighting the characteristics of each watershed organization contains in-depth information used for this analysis. Table 2-2 summarizes information contained in the fact sheets for easy reference. Appendix A contains the complete set of fact sheets.

Table 2-1. States and Watershed Organizations Reviewed by EPA

State	Watershed Organization
Florida	Bay Area Resource Council (BARC)
	Tampa Bay Estuary Program
Georgia	Middle Chattahoochee River Watershed Steering Committee
	Upper Suwannee River Watershed Alliance
Idaho	Tri-State Water Quality Council
	Lower Boise River Water Quality Plan
Indiana	Upper White River Watershed Alliance
Kentucky	(See Tennessee – Cumberland River Compact)
Maryland	Chesapeake Bay Program
	Interstate Commission on the Potomac River Basin
Massachusetts	Charles River Watershed Association
	Ten Mile River Watershed Association
Michigan	Huron River Watershed Council
	Little Rabbit River Watershed Project
	Kalamazoo River/Lake Allegan Watershed TMDL Implementation Committee
	Rouge River Project
Minnesota	Clearwater River Watershed District
	Mississippi Headwaters Board
New Jersey	Ten Towns Great Swamp Watershed Management Committee
	Upper Raritan Watershed Association
North Carolina	Cape Fear River Assembly
Ohio	Mill Creek Watershed Council
	Ohio River Valley Water Sanitation Commission
Oregon	Tualatin River Watershed Council
	Willamette Riverkeeper
Tennessee	Cumberland River Compact
Texas	Guadalupe-Blanco River Authority
Vermont	Lake Champlain Basin Program
Virginia	Elizabeth River Project
Washington	Chehalis River Council

Table 2-2. Summary of Watershed Organizations' Characteristics

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
FLORIDA				
Bay Area Resource Council	• Addresses portions of Florida and Alabama that drain into the Pensacola Bay. • The watershed covers 7,000 square miles and 15 counties in two states.	• Seven elected representatives from county-level. • Two advisory committees: citizen and technical.	• Develop a watershed management plan. • Create agreements with public and private entities. • Assist in planning, financing and managing the physical, chemical, biological, economic and aesthetic aspects of the Pensacola Bay System. • Share information gathered for local planning purposes. • Conduct outreach and education.	• Formed relationships with various county and city governments that hold NPDES permits.
Tampa Bay Estuary Program	• Addresses Tampa Bay Estuary, located in portions of Sarasota, Pasco, Polk, Manatee, Hillsborough, and Pinellas Counties in Florida. • Covers 6,583 square kilometers.	Independent regional alliance consisting of the following: • Policy board composed of elected officials. • Management board of top level bay managers and administrators. • Technical and citizen advisory groups.	• Address water and sediment quality, bay habitats, fish and wildlife, dredging and dredged material management, spill prevention and response. • Provide public education and outreach. • Provides funding for smaller local conservation projects. • Collects and manages data • Develops GIS maps. • Evaluates the Bays environmental health • Provide technical assistance within the watershed. • Provide coordinated planning services within the region.	• Estimating nitrogen and phosphorus loading into the Bay. • Developing guidelines for calculating nitrogen load reduction credits. • Establishing sediment quality targets. • Establishing nitrogen management goals. • Developing a watershed management model for optimal allocation of BMPs.

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
GEORGIA				
Middle Chattahoochee River Watershed Steering Committee	• Covers portions of Georgia and Alabama • Flows through portions of approximately 17 counties and the City of Columbus, GA • Impacted by both point and nonpoint sources, including CSOs from the City of Columbus	• Steering Committee formed to conduct sustainable planning project led by The Georgia Conservancy. • Comprised of 35 members from local government, environmental groups, and large corporations.	• Initially established to support planning project entitled "Blueprints for Successful Communities." • Developing implementation strategies that focus on protecting water resources. • Drafting report to convey recommendations developed through the Blueprints project.	• Implementation strategies identified in the Blueprints report may address point source impacts to the watershed.
Upper Suwannee River Watershed Council	• Located in south-central Georgia and north Florida. • Contains the Suwannee River, the Alapapha, Little, and Withlacoochee Rivers, and the Okefenokee Swamp. • Covers 9,950 square miles.	• Citizen-led advisory panel oversees the efforts of the organization. • Technical subcommittee comprised of federal, state, regional, and local government personnel under development. • Other issue-specific committees may be formed as new issues arise.	• Form partnerships at local, state, and federal levels. • Hold public workshops. • Gather input from citizens regarding the watershed. • Conduct education and outreach. • Perform limited water quality monitoring. • Plans to address economic development, public land management and water quality.	• Outreach and education activities may target point sources within watershed.

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
IDAHO				
Lower Boise River Water Quality Plan	• Drains 1,290 square miles of forested, agricultural, and range land, as well as urban areas • Flows through the cities of Boise and Caldwell • Segments impaired by nutrients, sediment, and temperature.	• A state-designated watershed advisory group consisting of 11members. • Membership represents agriculture, industry, local government, flood control, stormwater, environmental issues, and the general public. • Includes a general committee, a technical advisory committee and other technical committees.	• Advise the state on TMDL implementation • Recommend actions to control point and nonpoint sources • Involve the public in watershed management • Conducted analysis that resulted in a delisting of a stream segment • Expanded watershed sampling in partnership with USGS • Conduct technical studies • Provide information on TMDLs to public • Maintain web site • Provide opportunities for public input	• Recommend actions to control point sources through TMDL implementation plan development • Conduct use attainability analysis • Planning to respond to pollutant allocations for TMDLs • Efforts to develop TMDLs have indirect impact on the pollutant trading pilot project in this watershed.
Tri-State Water Quality Council	• Addresses the Clark Fork-Pend Orielle watershed in portions of Montana, Idaho, and Washington. • Covers 26,000 square miles. • Includes 14 counties, several Indian reservations, and is split between U.S. EPA Regions 10 and 8.	• Twenty-eight member stakeholder group representing jurisdictions, citizens, and businesses. • Eight committees, including Voluntary Nutrient Reduction Program Committee.	• Facilitates monitoring programs. • Obtains participation from point and nonpoint sources in the Voluntary Nutrient Reduction Program. • Provides and funds technical assistance. • Builds partnerships with businesses. • Builds partnerships with government agencies. • Conducts educational programs.	• Developed an agreement among point source dischargers to reduce pollution through voluntary program. • Coordinated nutrient loading target at the Montana-Idaho boundary. • Recommended improvements for discharge permitting policy in the State of Montana.

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
INDIANA				
Upper White River Watershed Alliance	• Located within central Indiana, includes parts of 16 counties. • Drains 2,271 square miles • Flows through the Cities of Indianapolis, Muncie and Anderson.	• Led by Board of Directors representing local government and businesses. • Three committees address technical issues, policy issues, and public relations. • Consulting firm serves as the Executive Director.	• Serves as umbrella organization for smaller, sub-basin organizations. • Promotes integrated data collection/management and planning. • Surveying and inventorying water quality monitoring activities. • Created GIS database of information collected by partners.	• Committee objectives address NPDES issues such as permit-driven effluent trading and working collectively on NPDES permit requirements through information sharing. • Working with small municipalities to prepare for Phase II storm water requirements.

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
KENTUCKY (see Tennessee)				
MARYLAND				
Chesapeake Bay Program	• Addresses portions of Maryland, Virginia, Pennsylvania, Delaware, and the District of Columbia that drains to the Chesapeake Bay watershed. • Covers more than 64,000 square miles.	• Executive Council comprised of signatory states' governors, the EPA Administrator and the chair of the Chesapeake Bay Commission. • Three advisory committees: citizen, local government, scientific & technical. • One implementation committee with nine sub-committees focused on specific issues such as nutrients, modeling, monitoring and analysis, and information management.	• Develop restoration agreements and goals. • Develop data collection methods and fund projects. • Identify research needs. • Assess progress toward achieving goals. • Acquire, maintain, and disseminate watershed data. • Public outreach and education. • Distributes grants for various conservation efforts.	• Conducts modeling of point source contributions of nutrients (related nutrient reduction goals). • Developed nutrient trading criteria. • Created a permitting task group under the Water Quality Steering Committee. • Develops nutrient reduction plans and tributary strategies.

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
Interstate Commission on the Potomac River Basin	• Address portions of Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia. • Covers 14,670 square miles.	• Consists of three representatives from the member states and three additional members from the federal government appointed by the President of the United States. • The organization is nonregulatory.	• Coordinates interstate and regional efforts to protect the watershed. • Supports local conservation organizations. • Performs monitoring. • Manages watershed data. • Conducts various education and outreach efforts. • Provides technical assistance to state agencies.	• Addressing wet weather issues impacting the watershed. • Shares information via the Internet regarding NPDES permitting activities in the watershed. • Worked with stakeholders and the District of Columbia to develop the Anacostia River Toxics Management Action Plan.

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
MASSACHUSETTS				
Charles River Watershed Association	• Flows 80 miles from Hopkinton to Boston Harbor, draining 308 square miles. • Impacted by storm water runoff and combined sewer overflows.	• Led by a Board composed of citizens with interests in business, government, science and marketing. • Committees focused on membership, policy (technical), executive, and various projects support the Board. • Membership is approximately 5,000	• Performs various advocacy and conservation roles within the watershed. • Supports development of TMDLs. • Supports local watershed recreation. • Performs various forms of outreach and education. • Implements monitoring projects. • Manages data. • Reviews and critiques building plans.	• Involved in a watershed permitting project that entails working with the state to develop a TMDL for the Upper Charles River. • Conducting water quality monitoring for use in TMDL development and to assist in identifying illcit connections to the storm sewer system. • Conducting flow and water quality modeling.
Ten Mile River Watershed Alliance	• Located in southeastern Massachusetts, and a small portion of northeastern Rhode Island. • Total drainage area is 54 square miles, with approximately 48.6 square miles in Massachusetts. • Entire stretch of major tributary, Seven Mile River, is on the 303(d) list. • Impacted by nutrients and metals. • Organization works only in the portion of the watershed located in Massachusetts.	• Governed by a 16 person Board of Directors. • Five committees supporting the Board include: Finance and Fund raising, Water Quality Monitoring, Greenway Promotion, and Pesticide Awareness. • Committees are only created when a member volunteers to lead one.	• Conducts water quality monitoring. • Promotes, coordinates, and implements land use plans. • Conducts various forms of outreach and education.	• Member of the watershed team established through the Massachusetts Watershed Initiative. • Partner in implementing the watershed action plan created by the watershed team, which addresses point source contributions of nutrients. • As part of the team, tasked with many education and outreach activities.

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
MICHIGAN				
Rouge River Project	• Covers three counties and 48 municipalities. • Drains an area of 438 square miles, 50 percent of which is urbanized. • Project focused on controlling combined sewer overflows (CSOs) and eventually expanded to address other point and nonpoint sources.	• Cooperative watershed management effort initiated by Wayne County. • Established to implement the watershed's remedial action plan. • Partnership among federal, state and local stakeholders, including the Southeastern Michigan Council of Governments.	• Collects and manages watershed data. • Conducts illicit connection detection and elimination activities. • Conducts water quality modeling. • Implements a public information and education program. • Invested in GIS tools. • Conducts chemical, physical, and biological monitoring.	• Created a voluntary watershed-based permit for municipal storm water discharges that will serve as a permitting option for Michigan's Phase II MS4 storm water program. • Implemented requirements of the National CSO Control Policy. • Implemented illicit connection detection and elimination program.
Little Rabbit River Watershed Project	• Covers 30,850 acres in southwest Michigan. • Predominant land use is agriculture. • Major impacts include nutrients and sediments.	• Consists of a steering committee with representation from local, state, and federal partners. • Allegan County Conservation District acts as the grant coordinator for the overall project.	• Contacted watershed landowners to discuss water quality concerns. • Implementation efforts led to installation of best management practices (BMPs) throughout the watershed. • Quantified amount of pollutants prevented from impacting the watershed during three year project.	• Initiated TMDL studies related to phosphorus and developed plans to reduce phosphorus loads. • Addresses stormwater as a nonpoint source pollutant, but may soon have to address Phase II MS4 regulations.

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
Kalamazoo River/Lake Allegan Watershed TMDL Implementation Committee	• Drains approximately 2,000 square miles of southwest Michigan. • Designated a Great Lakes Area of Concern due to PCB contamination. • Lake Allegan is an impoundment of the Kalamazoo River, listed on the 303(d) list due to its hypereutrophic status.	• Membership representative of watershed organizations, industries and local government. • Several co-chairs to maintain a balance of interests. • Formed a dozen ad hoc committees to craft strategies. • Receives logistical and facilitation support from Michigan State University Extension.	• Craft strategies addressing storm water and nonpoint source pollution to create the implementation plan for a phosphorus TMDL.	• Set goals for NPDES storm water permits through the TMDL Implementation Plan. • Reserves the option of issuing confined animal feeding operation (CAFO) permits to livestock operations within the watershed, even those that do not automatically fall under the new rules. • Provides input to Michigan DEQ on NPDES permitting issues within the watershed. • Facilitates discussions among point source dischargers on NPDES permitting issues, not just those related to TMDLs.
Huron River Watershed Council	• Includes 53 townships, villages, and cities in southeast Michigan. • Covers 908 square miles.	• Established under the Local Rivers Management Act and considered a governmental unit with no regulatory authority. • Governed by a ruling board composed of representatives of local governments within the watershed. • Nine full-time staff and 450 volunteers support the board.	• Provides technical assistance and scientific information to governmental agencies, local businesses, and citizens for policy development and river protection projects. • Monitors water quality and produces data acceptable for use by the State. • Has full GIS capabilities • Involved with watershed modeling • Performs outreach and education.	• Currently managing the development of 3 to 4 TMDLs for phosphorous and Ecoli. • Conducts watershed modeling to support TMDL development.

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
MINNESOTA				
Clearwater River Watershed District	• Located in Central Minnesota, stretching through three counties, three municipalities and various townships. • Covers 159 square miles and feeds into the Clearwater Chain of Lakes. • Chain of Lakes impacted by high phosphorus loadings from sewage treatment and agricultural operations.	• Unit of local government. • Comprised of a five-member Board of Managers, appointed by watershed counties based on portion within the watershed boundary. • A watershed management plan outlines the management programs and objectives. • Watershed Rules and Regulations contain requirements and administrative procedures for implementing the plan.	• Projects focus on septic systems, erosion, feedlots and wetlands. • Conduct outreach and education. • Provides technical assistance. • Funds various restoration efforts. • Coordinate watershed efforts among the participating counties. • Acts as a forum for citizens and government representatives. • Offers engineering advice and approval for farmers seeking tiling permits. • Conducts monitoring.	• Worked with municipalities to reduce phosphorus loadings from wastewater treatment plants by promoting use of on-land spray irrigation sewage treatment plants. • Facilitating master sanitary sewer planning to alleviate phosphorus loadings from septic systems. • Facilitates coordination between various local, state, and federal governments.

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
Mississippi Headwaters Board	• Addresses the first 400 miles of the Mississippi River in the state of Minnesota	• Joint powers board authorized by state legislation, comprised of eight counties. • The organization is governed by a Board consisting of County Commissioners from each participating county. The Board's actions are directed by a comprehensive management plan. • An Advisory Committee is made up of various county, state, and federal representatives.	• Focuses on cooperative land use planning to protect the headwaters. • Implements specific regulation and management strategies to achieve protection of the natural, cultural, scenic, scientific and recreational values of the watershed. • Monitors land use and administration of local regulations within the Mississippi River corridor. • Conducts education and outreach activities, including an oral history project. • Implements water quality monitoring program.	• Promotes outreach and education activities such as storm drain stenciling.
NEW JERSEY				

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
Ten Towns Great Swamp Watershed Management Committee	• Encompasses the Great Swamp Wildlife Refuge. • Covers approximately 56 square miles, draining 10 municipalities. • Land use in watershed is 48 percent developed. • Impacted by nutrients and soil from two wastewater treatment plants and nonpoint sources linked to development.	• Formed through an intermunicipal agreement. • Consists of appointed members from the U.S. Fish and Wildlife Service and representatives from the signatory towns. • Supported by an Advisory committee and a Technical Committee consisting of representatives from various federal, state, and local interests.	• Conducts outreach and education through web site, video, seminars and fact sheets. • Facilitate coordination among the participating jurisdictions. • Develop a watershed management plan. • Performed Riparian buffer study for each jurisdiction. • Coordinated a comprehensive water quality monitoring program. • Developed model environmental ordinance for municipalities.	• Proceeding with best management practice/demonstration projects for stormwater management (not in NPDES context specifically) • Addresses wastewater treatment facilities and storm water runoff through watershed management plan implementation.
Upper Raritan Watershed Association	• Includes Somerset, Hunterdon, and Morris Counties and 23 municipalities • Covers 194 square mile area of the overall 1,100 square mile watershed • Rapidly urbanizing portion of the larger Raritan River watershed.	• Operations are governed by a Board of Trustees and Sub-committees. • Daily operations handled by five full-time staff.	• Identify potential and current threats to the environment • Provide detailed geographic analysis and computer-generated maps to government agencies, environmental commissions, citizen groups, and other non-profit organizations • Education and outreach • Promote open-space preservation through conservation easements and land donations • Assist in agricultural planning and erosion control. • Develop GIS mapping and analysis for portions of the watershed the address boundaries, topography, geology, wetlands, roads, and land use/land cover.	• Outreach and education activities may reach point source dischargers located within the watershed. • GIS capabilities could prove useful in NPDES permitting on a watershed basis.
NORTH CAROLINA				

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
Cape Fear River Assembly	• Covers 9,322 square miles, representing the largest and most industrialized river system in the state. • Contains approximately 54 percent of the state's swine operations. • Ongoing development pressure from 26 counties and 116 municipalities.	• Serves as the umbrella organization for three smaller watershed coalitions. • Consists of a 34 member Board of Directors representing broad stakeholder interests. • Four task forces to address participation, education, funding and water quality. • Executive Director responsible for daily operations.	• Conducts water quality monitoring at 109 stations. • Conducts storm event and clean metals sampling. • Conducts hydrologic modeling. • Undertaking GIS/land use project.	• Coordinates the activities of three coalitions of NPDES dischargers that are 1) voluntary and 2) intended to integrate instream sampling requirements in NPDES permits with the state's basinwide management program. • Water quality management target objectives in strategic plan include a review of the relationship of water quality from discharges to mass loadings and discharge quantity.

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
OHIO				
Mill Creek Watershed Council	• Located in southwest Ohio • Covers 106 square miles and includes half of the City of Cincinnati. • Listed by American Rivers as one of the 20 most threatened waterways and the most endangered urban river in 1996 and 1997. • Impacted by industrial and municipal discharges, as well as nonpoint sources.	• Organization consists of 17 political jurisdictions • Executive Committee comprised of three council officers, chairs of five standing subcommittees, and five members at large. • Subcommittees address flood damage reduction, water quality, awareness, economic development and recreation.	• Address local flood protection • Functions as a public forum for watershed concerns. • Creates partnerships among various organizations. • Funds flood protection activities. • Assists with stormwater, flood control, and erosion control regulations. • Conducts public outreach and education. • Created GIS maps of fecal coliform data in partnership with the University of Cincinnati.	• Forms relationships local governments within the watershed. • Addresses point sources of pollution through the Water Quality Committee's efforts to develop a fecal coliform TMDL, led by the TMDL Technical Advisory Committee.
Ohio River Valley Water Sanitation Commission	• Extends into Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia, and West Virginia. • Covers 164,000 square miles. • Impacted by a variety of municipal and industrial sources. • Impaired due to dioxin, PCBs, and chlordane.	• Created by an Interstate Compact approved by congress and all signatory states. • Governed by a 27-member Board composed of 3 representatives from each signatory state and 3 federal representatives appointed by the U.S. President. • Committees include citizens advisory, technical, NPDES, water quality, biological, and stream criteria.	• Regulatory role of prescribing standards of waste water treatment in any interstate stream within the watershed. • Facilitates coordination within the organizations members. • Performs biological assessments. • Coordinates emergency response efforts. • Conducts public outreach and involvement programs. • Carry out the objectives of the Interstate Compact	• Prescribes standards of waste water treatment in any interstate stream within the watershed district. • The NPDES Committee works with applicable permitting agencies to coordinate permit requirements within the basin. • Conducts various water quality and biological monitoring. • Coordinates listing of TMDLs for the signatory states. • Currently involved with the technical work on TMDLs throughout the watershed.

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
OREGON				
Tualatin River Watershed Council	• Encompasses 710 square miles between the Coast Range mountains and the Willamette River. • Agriculture and urban areas cover 50 percent of watershed. • Impacted by low dissolved oxygen and fecal coliform.	• An advisory body comprised of 20 members representing broad stakeholder interests. • Technical Assistance Committee (TAC) identifies problems and recommends solutions. • Action Plan Subcommittee works with TAC to create the watershed action plan.	• Conducts a volunteer monitoring initiative. • Collects and manages data. • Conducts sub-watershed assessments. • Developed a watershed resources collection available via the Internet. • Conducts outreach and education, including school programs and distributing a newsletter.	• Involvement from Clean Water Services, lead watershed management organization for watershed's predominant county and NPDES permittee. • Role as facilitator and educator integrate point source dischargers as stakeholders and target audience.
Willamette Riverkeeper	• Drains 11,500 square miles. • Contains 70 percent of Oregon's population. • Listed on 303(d) list for bacteria, mercury, and temperature impairments.	• Comprised of a Board of Directors, full-time staff, and a group of volunteers. • Part of the national umbrella organization, Waterkeeper Alliance.	• Implements the Natural Waters Program that focuses on implementation of CWA requirements and nonpoint source voluntary programs. • Conducts volunteer monitoring through the River Guardian Program. • Conducts outreach activities such as presentations and paddling activities through the River Discovery Education Program.	• Reviews all NPDES permit applications and provides the Oregon Department of Environmental Quality with comments. • Tracks storm water permits. • Works to ensure wastewater treatment plants implement strategies to stop combined sewer overflows. • Files lawsuits, if necessary, to ensure permit compliance.
TENNESSEE				
Cumberland River Compact	• Split between Kentucky and Tennessee. • Covers 18,000 square miles.	• Non-profit organization comprised of a board of citizens and agency representatives. • Water quality and land committees. • Education and marina programs.	• Education and outreach through coordination with teachers, landowners, contractors, marinas and other interested groups. • Partnership development with various state and federal agencies.	• Activities focus on education and outreach and partnership development, which includes municipalities and businesses that could hold NPDES permits as part of the target audience.

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
TEXAS				
Guadalupe-Blanco River Authority	• Begins at the headwaters of the Guadalupe and Blanco Rivers and ends at the San Antonio Bay. • Encompasses 10 counties.	• One of eight river authorities in the state. • Public Corporation governed by a 9-member Board of Directors appointed by the Governor and approved by the State Senate. • Eleven committees focus on water distribution and hydroelectric operations. • General manager oversees operations of the divisions.	• Responsible for wastewater management and water supply. • Conducts rainfall and river monitoring. • Maintains recreational facilities. • Manages floods. • Conducts education aimed at school children. • Distributes funds to address water quality issues. • Develops partnerships with various governmental agencies to address water quality and conservation. • Operates hydroelectric plants.	• Manages 10 wastewater treatment plants that hold NPDES permits. • Offers technical assistance regarding wastewater treatment facility design. • Builds partnerships with various levels of governmental agencies to address water quality and quantity issues.
VERMONT				
Lake Champlain Basin Program	• Located in portions of Vermont, New York, and Quebec (Canada). • Covers 8,234 square miles. • Designated a resource of national significance in 1990 by Congress. • Impacted by increased phosphorus levels.	• Administered by state, federal, and provincial governments, as well as New England Interstate Water Pollution Control Commission. • Steering Committee facilitates communication and coordination among partners. • Technical and citizens advisory committees support the Steering Committee.	• Facilitates partnership between various levels of government, citizens, non-profit organizations, and communities. • Awards grants through a competitive based process for local conservation program implementation. • Conducts water quality monitoring program. • Focused on implementation the basin management plan.	• Facilitates partnership between various levels of government, citizens, non-profit organizations, and communities • Funds the development of storm water management programs and sediment studies. • Promotes implementation of and tracks progress towards phosphorus reduction strategy, including voluntary efforts by point sources.

Name	Watershed Description	Type and Structure	Functions	Involvement in NPDES Issues
VIRGINIA				
Elizabeth River Project	• Spans portions of the Chesapeake, Norfolk, Virginia Beach, Portsmouth, and Suffolk. • One of three regions of concern in the Chesapeake Bay watershed due to toxics.	• Board of Directors comprised of industry, government, environmentalists, scientists, educators, and citizens. • Committees include funding; board development, technical policy; and event planning. • Six staff people and one princess.	• Developed, and now implements, the Elizabeth River Restoraton Action Plan. • Builds partnerships among stakeholders, including local and federal government. • Implements pollution prevention program for industry. • Implements a monitoring program. • Manages data. • Performs various outreach and educational functions.	• Recently secured a grant from the Small Watershed Grant Program to address storm water runoff. • Implements voluntary pollution prevention program targeting businesses within the watershed that may have NPDES permitting implications.
WASHINGTON				
Chehalis River Council	• Spans five counties in southwest Washington. • Drains 2,660 square miles, including forested, agricultural, and urban lands. • Segments listed on 303(d) list for low dissolved oxygen, temperature, and bacteria.	• Operates through a Board of Trustees elected by dues paying members. • Partners include federal and state agencies, local conservation districts, schools, and businesses. • Establishes yearly program of activities in five topical areas (current projects, new projects, funding, membership, and grants).	• Developed water quality monitoring plan and volunteer guide. • Conducts educational activities focused on TMDL program. • Maintains public resource library. • Conducts monthly public seminars. • Implements volunteer monitoring projects. • Maintains comprehensive web site with news and information.	• Provides local news stories related to NPDES permitting activities on web site. • Reviews and comments on proposed NPDES permits. • Hosted public meetings related to development of the fecal coliform TMDL for Grays Harbor.

SECTION 3. ANALYSIS OF WATERSHED ORGANIZATIONS: POTENTIAL ROLES IN WATERSHED-BASED NPDES PERMITTING

Just as every watershed is unique, so are the organizations established to restore and protect them. Based on the review of the 28 watershed organizations summarized in Section 2, and comprehensively presented in Appendix A, it is obvious that they vary in mission, structure, function, and approaches to problem-solving at a watershed level. Despite these variations, it is clear that watershed organizations play a key role in watershed management that could support aspects of NPDES watershed-based permitting activities. This section provides a brief analysis of the watershed organizations reviewed for this report. It concludes with general recommendations about the roles that watershed organizations could potentially play to facilitate the process of developing and implementing watershed-based NPDES permits.

Analysis of Watershed Organizations

The analysis of the 29 watershed organizations is presented below according to organizational characteristics used in the fact sheets.

Organizational Type and Structure

Watershed organizations often reflect the uniqueness of the resource they protect; therefore, no two are exactly alike. They range in type and structure due to many factors, such as impetus for the organization, the nature of the problems and issues addressed by the organization, the range of jurisdictional interests encompassed by the watershed's boundaries, and the source of funding. The type and structure of the organization can have an impact on other characteristics, such as membership, functions, resources, and expertise.

The names of watershed organizations, such as assembly, district, commission, program, and project, not only indicate something about the organization's structure, but also its authority, jurisdiction, membership, and resources. Understanding the structure of an organization can give insight into the role it plays within the watershed. Provided below is an analysis of the various types of watershed organizations included in this review.

- **Regional watershed programs established through federal initiatives.** Watersheds such as the Chesapeake Bay, Tampa Bay, and Lake Champlain have received national attention in recent years, leading Congress to designate these watersheds as resources of national significance. These designations have resulted in high-profile regional partnerships involving federal, regional, state, and local interests, such as the Chesapeake Bay Program, the Tampa Bay National Estuary Program, and the Lake Champlain Basin Program. With top-ranking officials comprising executive committees, these programs receive federal funding appropriated by Congress to support activities aimed at achieving watershed goals. Other partners, including partner federal agencies, state and local government, regional organizations and universities, also contribute time, expertise, and funding. These organizations also provide grant monies to partners that wish to conduct

research related to the goals of the program.

- **Interstate Commissions.** Interstate agreements that enhance state power at the expense of the federal government are called compacts and require Congressional consent. Compacts are a mechanism that allow states to work together to address issues that cross state boundaries and are not addressed by the federal government. The Ohio River Valley Water Sanitation Commission (ORSANCO) and the Interstate Commission on the Potomac River Basin (ICPRB) are examples of watershed organizations created via an interstate compact with Congressional consent. The compacts that govern these interstate commissions determine the commission's purpose, membership structure and authorities.

- **Units of local government.** Some watershed organizations function as a special unit of local government defined by watershed boundaries rather than political boundaries. The Clearwater River Watershed District, and the other watershed districts created by the State of Minnesota legislature in 1955, are a good example of this type of organization. The legislation that created this unit of local government lists the types of issues watershed districts can address and the functions it can perform, such as taxing and permitting. Although authorized by the state legislature, watershed districts in Minnesota require a petition process by the local governments to formally establish the district. The Huron River Watershed Council in Michigan is also considered a governmental unit, established under the Local Rivers Management Act; however, this organization has no regulatory authority.

- **Partnerships of municipalities.** Intermunicipal agreements can bring together cities and counties within a watershed boundary to form the basis for a watershed organizations. The Ten Towns Great Swamp Watershed Management Committee in New Jersey is an example of an organization formed through an intermunicipal agreement among the ten municipalities of the Great Swamp watershed to develop and implement a watershed management plan. Using the Minnesota Joint Exercise of Powers Legislation, joint powers boards have brought together multiple government units through interjurisdictional agreements to protect water resources. The Mississippi Headwaters Board in Minnesota is an example of a joint powers board formed to protect the headwaters region with its federal and state partners.

- **Projects to partnerships.** Watershed-related projects that unify watershed partners can transition from mere projects into established partnerships that operate as a sustainable organization. The Rouge River Project illustrates this type of transition. Starting in 1992 as a demonstration project, the Rouge River Project focused on addressing the combined sewer overflow (CSO) problem impacting the watershed. The focus of the Rouge River Project expanded over time to include a number of different activities including sampling, education, and modeling. As a result of decreasing grant funding from federal and state sources, partners of the Rouge River Project are proposing to create a more sustainable organization called the Rouge

River Watershed Management Assembly that would continue and expand existing watershed management efforts.

- **Umbrella organizations for other smaller organizations.** To more effectively manage large-scale watersheds, smaller watershed organizations often form to address problems and issues on a sub-watershed basis with a large watershed organization serving as a coordinating entity. The sub-watershed groups perform much of the site-specific project work, sharing data and information with each other via the larger umbrella organization. In North Carolina's Neuse River watershed, the Cape Fear Assembly serves as an umbrella watershed organization for three associations of NPDES dischargers in different portions of the watershed. The Upper White River Watershed Alliance in Indiana promotes the formation of sub-watershed groups throughout the watershed and provides these groups with the necessary data and information to obtain a comprehensive watershed picture.

The structure of each watershed organization reviewed is as varied as the type of organization. In most cases, a board (either appointed or elected) oversees the functions of the watershed organization and a series of issue-oriented committees perform these functions. Organizations formed with federal government involvement, such as the Tampa Bay Estuary Program and the Ohio River Valley Water Sanitation Commission, have executive committees or boards comprised of top-level officials from member jurisdictions (e.g., governors, mayors, federal agency administrators) and, in some cases, presidential appointees. Stakeholders and partners comprise technical and advisory committees that address topics pertinent to watershed management such as water quality, public education, fundraising, flood damage reduction, nutrients, and information management.

Organizational Functions

What a watershed organization does is largely dependant on why it was created, the authorities it posses, and available funding. Public education, public involvement, and information sharing (i.e., maintaining lines of open communication among multiple jurisdictions and stakeholders) are basic functions performed by every watershed organization reviewed for this report. Other common functions include:

- Developing and implementing water quality monitoring plans
- Compiling and managing watershed information and data
- Facilitating stakeholder involvement activities (e.g., public meetings, committee meetings)
- Setting watershed goals (e.g., water quality objectives, pollutant reduction goals)
- Developing and implementing watershed management plans
- Writing grants and identifying other funding sources
- Communicating with the media
- Representing watershed interests at public hearings and meetings
- Developing and implementing voluntary programs targeting groups within the

watershed
- Reporting on the state of the watershed
- Tracking progress toward watershed goals.

The degree to which organizations are conducting these functions vary from watershed to watershed. In some areas, public education may equate to a monthly or quarterly newsletter. In other watersheds, public education is a well-planned media campaign that includes focus group testing and follow-up surveys to determine effectiveness.

Some watershed organizations are undertaking highly technical functions such as GIS mapping, water quality modeling and TMDL development. These functions are unique to one or two watershed organizations included in this review. Limited involvement in these types of functions may be due to lack of funding and limited access to technical expertise. Organizations devoting resources to these activities appear to be well-established, have access to resources, and working in a high-profile watershed (e.g., Chesapeake Bay, Charles River). In some cases, organizations are able to aggregate funding from partners that allow them to obtain consultants that can perform activities of a more technical nature.

In addition to performing technical functions, some organizations have even more unique and significant capabilities related to taxation and regulatory authority that affect their involvement in watershed management. The compact authorizing ORSANCO allows this commission "to adopt, prescribe and promulgate rules, regulations, and standards" for administering and enforcing the provisions of Article 3 which address the treatment of sewage and industrial wastes to ensure attainment of designated uses. As a result of this authority, ORSANCO has set pollution control standards for industrial and municipal wastewater discharges into the Ohio River. Watershed districts in Minnesota are a type of organization that has the authority to levy a watershed ad valorem tax and a subwatershed tax, and pays for projects using funds from special assessments. Other organizations in Minnesota, such as joint powers boards, can also levy taxes if localities crafting the joint powers agreement give organizations this ability.

Funding and Resources

Funding and resources are two important factors that influence the ability of watershed organizations to achieve their goals. Most watershed organizations reviewed for this report receive financial support from a variety of sources, such as grants from public and private sources, appropriations from federal and state government, membership dues from partners, and charitable donations. Many of these funding sources can be unstable and unsustainable in nature, requiring watershed organizations to actually spend money on fundraising activities. Organizations with more sustainable sources of funding, such as congressional appropriations, taxes, or membership dues, have the ability to that have the ability to levy taxes, such as watershed districts in the State of Minnesota, or collect regular membership dues have more sustainable sources of funding. Some watershed organizations also serve as consultants to local government, providing services under contract for a fee.

Resources such as staff, technical expertise, and access to technology vary among watershed

organizations depending on factors such as funding and capabilities of partners and/or members. Staffing ranges from part-time employees that perform a coordination role to full-time paid professional staffs that lead committee activities and technical projects. For the Upper White River Watershed Alliance, a consultant plays the role of executive director and provides technical expertise and technical skills (e.g., GIS mapping) to the organization. Some groups aggregate resources to retain consultant services for entire projects (e.g., watershed management plan development) or to provide specific technical services (e.g., water quality modeling). Other groups find technical expertise from within the group's membership; members of technical committees often have backgrounds and experience related to the committee's mission that the organization can tap when necessary. Organizations with significant resources often fund special research projects through grants to obtain the data and information necessary to achieve its goals.

Involvement in NPDES Related Activities

Based on the information collected through this review, it appears that watershed organizations have very limited involvement in NPDES permitting activities. There are a few organizations working in watersheds where point source discharges are a primary cause of concern. It is in these watersheds where organizations appear to have active involvement in NPDES permitting. The ways in which watershed organizations are directly involved in NPDES permitting include:

- Developing an agreement among point source dischargers to reduce pollutants through a voluntary program.
- Providing the state agency with a set of recommendations for improving the state's discharge permitting policy.
- Assisting small communities prepare for Phase II storm water regulations.
- Creating a permitting work group as part of the overall organizational structure.
- Sharing information regarding NPDES permitting within the watershed via the Internet.
- Developing a voluntary municipal separate storm sewer system (MS4) watershed-based general permit.
- Implementing nine minimum control measures under the National CSO Control Policy.
- Implementing a illicit connection detection and elimination program.
- Coordinating efforts of NPDES discharger coalitions to integrate instream sampling requirements in NPDES permits with the state's basinwide management program.
- Working with state permitting authorities to coordinate permit requirements for point sources within the watershed.
- Developing standards of wastewater treatment for interstate streams within the watershed.
- Reviewing NPDES permit application and providing state permitting authority with comments.
- Filing lawsuits to ensure permit compliance.
- Managing wastewater treatment plants that hold NPDES permits.

Many of the activities that watershed organizations undertake may not directly relate to the NPDES permitting process, but these activities can indirectly impact the process over time. Activities that can indirectly influence the NPDES permitting process include:

- Developing relationships with and among NPDES permittees (e.g., industrial facilities, municipalities).
- Targeting watershed education and outreach efforts to point source dischargers.
- Establishing pollutant reduction goals.
- Estimating pollutant loadings into the watershed using computer modeling.
- Developing guidelines for calculating pollutant load reduction credits for use in trading programs.
- Facilitating development and implementation of watershed management plans.
- Conducting water quality monitoring and information management.
- Coordinating Section 303(d) listing efforts.
- Participating in aspects of TMDL development.
- Implementing best management practice demonstration projects for stormwater management.
- Hosting public meetings to solicit comments on TMDLs.

The wide range of direct and indirect involvement in NPDES permitting demonstrates the potential that watershed organizations have to influence the NPDES program at the local level. A more in-depth discussion of the potential role watershed organizations can play in watershed-based NPDES permitting appears at the end of this section.

Summary of Findings and Analysis

From the summary and analysis contained in this report, it is clear that watershed organizations established to protect local resources are unique in their capabilities, missions, and approaches. Given these variations, it is difficult to make broad-brush statements about all watershed organizations. Listed below are general observations gleaned from the analysis of the XX organizations summarized for this report.

- **Nonpoint source pollution issues appear to receive more attention from watershed organizations than point source issues.** Both point and nonpoint source pollution impact most watersheds, although watershed organizations appear to spend more resources on addressing nonpoint source pollution. There could be many reasons for this focus. Unlike point source pollution, there is no regulatory program to address nonpoint source pollution; therefore, the primary mechanisms to address nonpoint source pollution are public education and voluntary action. Resources to fund public education and involvement projects spearheaded by watershed organizations often come in the form of Section 319 grants. This grant program funds only projects addressing nonpoint source pollution. As a result, watershed organizations may focus more heavily on nonpoint source issues due to constraints

related to grant funding. Watershed organizations may also shy away from traditionally controversial regulatory issues such as NPDES permitting in an effort to maintain a collaborative, non-threatening image among stakeholders.

- **Public education and community involvement are primary functions of most watershed organizations.** Although the goals and missions of watershed organizations vary, nearly every organization includes public education and community involvement in the suite of its roles and functions. Some groups made these functions part of the overall organizational structure through education committees or citizen advisory groups. Other groups perform these activities through specific projects and events. Regardless of the mechanism, the commitment to these functions is testimony to the perceived value of education and involvement in achieving watershed goals.

- **More organizations are performing technical functions related to TMDL development.** TMDL development is traditionally a function of states and EPA, with stakeholders playing an advisory role at certain points in the process. This is changing, however, as watershed organizations begin to perform more technical functions such as water quality monitoring and modeling. Data and resources are lacking for TMDL development in some watersheds; therefore, states welcome (and sometimes rely upon) the data and information watershed organizations can contribute to the process. Early and meaningful involvement in TMDL development by watershed organizations will likely engender acceptance for and a sense of ownership over the final TMDL, leading to successful implementation.

- **Building relationships among stakeholders is a key role of watershed organizations.** Lines of communication among the diverse interests represented within a watershed typically do not exist to the extent necessary for successful watershed management. Establishing those open lines of communication and building relationships is a challenge that most watershed organizations face, given the nature of the organization. Watershed organizations act as a facilitator among all stakeholders, establishing trust within the group through unbiased negotiations to achieve agreed upon goals for the watershed.

This analysis has produced a better understanding of how watershed organizations operate, and what factors influence their ability to perform certain functions. Given this information, EPA can better identify opportunities for watershed organizations to participate in the watershed-based NPDES permitting process.

The overriding theme of watershed management is "one size does not fit all" – every watershed is different and every watershed organization is different. The same holds true with the process for watershed-based NPDES permitting. It will vary from location to location, depending on the unique factors and circumstances at play within the watershed. As a result, determining the most appropriate role for a watershed organization in the watershed-based NPDES permitting process will require careful consideration of the political, social, and economic dynamics influencing both watershed conditions and the process.

Many activities currently performed by watershed organizations are essential to the watershed-based NPDES permitting process, as they are to watershed management and TMDL development. Where a watershed organization demonstrates an interest in participating, it is likely that the most appropriate role will stem from its current functions. With the NPDES permitting authority, a watershed organization can determine what contributions it is best suited to make. Provided below are descriptions of the various roles and activities watershed organizations can contribute to the watershed-based NPDES permitting process.

- **Facilitating the Process and Stakeholder Involvement.** Much like watershed management planning and TMDL development, the watershed-based NPDES permitting process emphasizes the need for meaningful stakeholder involvement. Two types of stakeholder involvement will occur in this process: 1) involvement from a technical committee comprised of the NPDES permitting authority and point source dischargers directly impacted by permitting decisions within the watershed; and 2) involvement from representatives of the broad range of watershed interests that also impact, or are impacted by, watershed conditions but do not have a direct role in the NPDES permitting process. It is likely that many of the agencies, organizations, and individuals involved in this process will bring "baggage" to the table that could negatively impact discussions, negotiations, and overall group dynamics. In the role of facilitator, watershed organizations can act as a neutral, un-biased entity to mediate and facilitate effective communication amongst the partners, permit holders, the public and nonpoint sources involved in the process. As mentioned previously, many watershed organizations currently play this role within the watershed for other activities and have established the trust and relationships necessary to take on this role in permitting.

- **Educating Process Participants and Stakeholders.** Throughout the watershed-based NPDES permitting process, participants (i.e., NPDES permitting authority and point sources) and stakeholders should have access to educational materials and activities relating to watershed management and NPDES permitting. At the outset of watershed-based NPDES permitting, all participants will require a baseline understanding of watershed conditions and the how the NPDES program works. With a baseline awareness, stakeholders are prepared to receive more in-depth educational information regarding watershed goals, data and information, and the NPDES permitting process. A strong education on these issues will allow stakeholders to provide meaningful input throughout the process and implement solutions. Most watershed organizations have education as a primary focus, investing a great deal their limited time and resources on this activity. Given this attention to education, watershed organizations have an intimate understanding of the audiences within their watershed and have the ability to craft messages and materials that will resonate with these audiences. In addition, stakeholders trust the information contained in educational materials produced by their watershed organizations.

Looking to watershed organizations to incorporate the issue of watershed-based NPDES permitting into existing educational efforts, or develop a separate education initiative, makes sense given their expertise in this area.

- **Conducting Water Quality Monitoring and/or Modeling.** To support the development of watershed-based NPDES permits, NPDES permitting authorities will need comprehensive, high-quality data on current watershed conditions and pollutant loadings from both point and nonpoint sources. Watershed organizations with existing water quality monitoring and/or modeling programs can contribute this type of information to the process. Information generated by watershed organizations can supplement existing data generated by the state's ambient monitoring program and NPDES permittees' discharge monitoring activities. In some cases, it may serve as the only reliable source of data for the watershed. Not all watershed organizations will have the ability to make this type of contribution to the watershed-based NPDES permitting process. When possible, incorporating locally-generated data and information into the process will result in an end-product (e.g., permit limits) that has stakeholder support and confidence.

- **Managing Data and Information.** Through activities such as watershed management planning, watershed organizations take on the role of information manager. They often manage databases that allow partners to share data that they collect. In addition, clearinghouses of studies, reports, and other publications are often available via watershed organizations' web sites and libraries. The watershed-based NPDES permitting process relies upon access to data and information collected by various partners. Using existing infrastructure (e.g., databases and web sites), watershed organizations can play a critical role in compiling and providing access to data and information throughout the process.

- **Engaging nonpoint sources into the process.** Although the focus of watershed-based NPDES permitting is on point sources impacting the watershed, the process also emphasizes the importance of considering all pollutant sources when developing strategies and crafting watershed-based permit limits. This means that nonpoint sources, while not regulated under the NPDES program, are an important part of the equation. As a neutral, unbiased entity focused on education and outreach, many watershed organizations have found creative ways to engage nonpoint sources (e.g., farmers, residents, municipalities, businesses) in watershed management. Using their existing rapport, watershed organizations may have the ability to educate nonpoint sources as to why the watershed-based NPDES permitting process does relate to them and persuade them to take an active role.

- **Providing policy and political support.** In some states, watershed-based NPDES permitting may require a change in states rules and policy to facilitate the process. Watershed organizations can help present arguments to the state legislature as to why

changes to state rules are necessary.

In addition to the roles described above, watershed organizations may consider taking on an even more significant role as the primary watershed NPDES permittee. This concept, described in the introduction to this report, is one watershed-based NPDES permit type conceived by EPA where a watershed organization would receive a single NPDES permit that contains permit requirements for all point sources within the watershed. As the permittee, the watershed organization would take on ultimate responsibility for ensuring compliance with the permit requirements. For this concept to work, it is likely that a state legislature would first have to authorize a watershed organization to take on this role. Organizations with existing regulatory and enforcement responsibilities, such as those created through interstate compacts, state legislation, or joint powers agreements, may be good candidates for this potential role.

Involvement of watershed organizations in the watershed-based NPDES permitting will greatly benefit both the process and the outcome. NPDES permitting authorities initiating this process should identify watershed organizations in the project area and conduct an analysis of the organizations' that reviews its current functions, perceived role in the watershed, and active membership/partners. Based on this analysis, NPDES permitting authorities can determine the most appropriate role for watershed organizations and invite them to participate – or even lead – the process.