

Lawrence, P.L. (2012). As The Water Flows: Community Based Decision-Making and Participatory Planning for the Maumee Area of Concern, Ohio. In Grover, V.I. and Krantzberg, G. (eds.). Great Lakes:Lessons in Participatory Governance. Science Publishers. Enfield, NH., pp. 293-311.

As the Water Flows: Community Based Decision-Making and Participatory Planning for the Maumee Area of Concern, Ohio

Patrick L. Lawrence

Department of Geography and Planning, University of Toledo
Toledo, Ohio 43606

E-mail: patrick.lawrence@utoledo.edu

INTRODUCTION

Within many Great Lakes communities, the flow of water over the landscape in the form of watershed processes, land drainage, and the discharge of rivers and streams, represents an important aspect of the natural environment and defining characteristic of the interaction of humans with the land and water they are so dependent upon. Since 1987, local communities, along with state and federal agencies, have been engaged in efforts to address the complex mired of water quality concerns and related environmental issues within the Great Lakes Area of Concern for the Lower Maumee River and associated watersheds in northwest Ohio. Following from provisions of the Great Lakes Water Quality Agreement, this effort for the lower Maumee has been undertaken within the framework of the establishment of a Remedial Action Plan (RAP) approach as has been the common undertaking at the Great Lakes Areas of Concern (AOC) sites within Canada and the United States. However, at each AOC within the Great Lakes Basin, the RAP planning process and resulting approaches and outcomes have been site specific and unique, often reflecting local interests, the

political jurisdictions, issues to be addressed, and perhaps most importantly, the presence and roles of the local communities and citizens.

Over the last 20 years a number of studies have reviewed the process and progress by which community based planning efforts have been undertaken to complete the necessary steps towards completion of remedial action plans (RAPs) in various Great Lakes Areas of Concern (AOCs) in both the United States and Canada. The most noteworthy of such reviews include Grima et al. (1983), Gurtner-Zimmermann (1995, 1996), Hartig et al. (1996), Krantzberg (2003), Krantzberg and Houghton (1996), and Hall et al. (2006) – all of which do an excellent job of assessing and highlighting the key issues and challenges all too common in attempts to create and maintain successful grass root structures for RAPs – and to which readers are referred to for additional background and discussion. In addition, several writers have examined the specific aspects of community organization and engagement within Great Lakes Areas of Concern, most notably Beeker et al. (1991), Beierle et al. (1999), and Kellogg (1998), in which each paper considers how the need for public participation was identified as a key element in addressing Great Lakes water quality issues in the context and structure of Areas of Concern and the problematic difficulties that, along with opportunities, were presented during the Remedial Action Plan process within local communities.

This chapter will examine the history, planning framework, successes and challenges of the RAP planning process within the Maumee AOC and reflect upon the fundamental barriers and opportunities present in the community, importance of leadership and innovation, and the driving forces needed to achieve the improvements necessary to return the rivers and streams to fishable, drinkable, and swimmable waters for our community. The key evolutionary steps or approaches to community engagement and involvement via a local RAP Advisory Committee will be discussed and conclusions drawn as to the elements of each step, changes that occurred as progress continued and also waned over the last 20 years, and the current organizational arrangements developed as a response to varied challenges and opportunities that emerged during the history of the Maumee RAP and for its continued future success.

MAUMEE AREA OF CONCERN

The difficulties in managing the entire Maumee Basin (a collective area of over 10,000 square kilometers covering the portions of three states: Ohio, Michigan, and Indiana) has long been recognized as a serious barrier to watershed management efforts within the basin, resulting in a long history of stalemate and struggles (Nelson and Weschler 1998). The lower Maumee River and local streams in NW Ohio were designated as a Great Lakes Concern in 1987 by the

International Joint Commission (IJC). The Maumee AOC (Fig. 13.1) comprised a land area of 2,000 square kilometers that consists of several watersheds within northwest Ohio that have streams directly discharging into the western basin of Lake Erie. The population of the Maumee AOC is approximately 450,000 with several major urban areas, but over 70% of the land area is used for rural agriculture (MRAC 2006). Over the past 20 years, a local partnership of citizens, government, business and non-governmental environmental interest groups have worked together as the Maumee RAP Advisory Committee to address a wide range of water quality issues facing the Maumee AOC. Several of the problems facing the rivers and streams of this area include: contaminated sediments; nutrient loadings; wetland loss; aquatic habitat degradation; bacteria; combined sewer overflows (CSOs); eutrophication; and non-source pollutants from rural runoff.

The Maumee AOC was originally identified as the area extending from the Bowling Green water intake near Waterville along the Maumee River downstream to Maumee Bay (MRAC 1990). The area includes direct drainage into the waters that are within Lucas, Ottawa and Wood counties. This includes Swan Creek, Ottawa River (Ten Mile Creek), Duck Creek, Otter Creek, Cedar Creek, Grassy Creek, and Crane Creek. In 1992, this area was extended to the east to include Turtle Creek, Packer Creek, and the Toussaint River. Heavy metals and organic chemical sediment contamination are what led to the lower Maumee River being classified as an Area of Concern (MRAC 1997). Also a noted concern was that the Maumee River contributes the largest tributary load of suspended sediments and phosphorus to Lake Erie, which would become an issue of focus for water quality planning within the AOC (MRAC 1997). In 2010, USEPA Great Lakes National Program Office (GLNPO) and Ohio EPA approved the further extension of the Maumee AOC boundaries so as to incorporate the full watershed units with the AOC in which water quality improvements and related restoration projects had been targeted and in some cases implemented. In this way efforts to address the beneficial use impairments assessed on the basis of watershed management units could be addressed within the Maumee AOC by the Maumee RAP and local watershed partners and agencies.

The Maumee RAP as an organization was created after the first public meeting in October 1987. It has grown and changed over the years, but has always been a public-private partnership working to restore the health of our area's waterways to fishable and swimmable conditions. The Maumee RAP involves a diverse cross-section of environmentally concerned businesses, industries, government agencies, non-profit organizations, educators, and citizens. The Maumee RAP Advisory Committee (MRAC) makes the official decisions for the organization and provides general program oversight. The MRAC as formed includes action groups (or sub-committees) that are integral

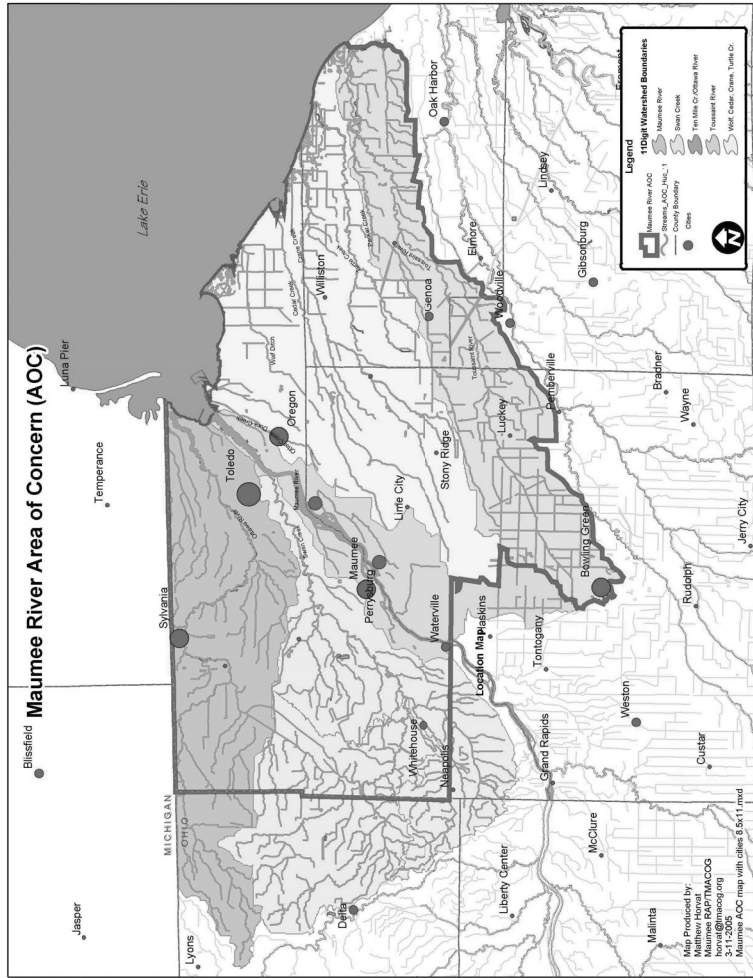


Fig. 13.1 Maumee Area of Concern, NW Ohio
 Color image of this figure appears in the color plate section at the end of the book.

to the progress of the Maumee RAP. These action groups address specific issues that affect the Maumee AOC, such as open spaces, wetlands, agriculture, rural, and urban concerns. There have been two action groups utilizing a comprehensive watershed approach to improving Swan Creek and the Ottawa River. The Maumee RAP has also historically focused on public outreach and education.

The Maumee RAP planning process began on October 1, 1987, when the first public meeting was jointly held by the Ohio Environmental Protection Agency (EPA) – represented by Ohio statewide RAP coordinator – and the Toledo Metropolitan Area Council of Governments (TMACOG), who served as the local coordinator for the Maumee RAP. In 1988 the Maumee RAP Advisory Committee (MRAC) was officially formed. The 74-member MRAC included representatives from all levels of government, business and industry, universities and other interested individuals. Problem definition was completed in 1990 with the submission of the Maumee RAP Stage 1 Report (MRAC 1990) to Ohio EPA. Stage 1 of the RAP process was officially concluded in March 1992 when the Maumee RAP Stage 1 Report was reviewed and accepted by the IJC.

After Stage 1 was finished and the Advisory Board was abolished, the Maumee RAP Implementation Committee (MRIC) was formed to oversee all the restoration activities of Stage 2 that occurred throughout the Maumee AOC. In 1997 MRIC released a new Strategic Plan for the organization that utilized much of the same structure with a few minor differences including a few new action groups, a new logo, and a new simplified name for the organization, Maumee RAP Committee (MRIC 1997). The Strategic Plan classified action groups into three categories: issue, support or watershed. The MRIC was still the formal decision-maker for the organization that resided under the umbrella of TMACOG. The 1997 Strategic Plan also recommended the reformation of the Maumee RAP Advisory Committee (MRAC) to oversee several smaller action groups.

A 10-year Activities and Accomplishments Report was completed in 2002 setting the stage for identifying next steps toward restoration (MRAC 2002). The next planning step was when the Maumee RAP undertook an intensive and ambitious effort to create the Maumee AOC Stage 2 Watershed Restoration Plan. This plan combines the IJC requirements of a Stage 2, USEPA and Ohio requirements for a watershed action plan, with attention to the non point source management measures of the Ohio Coastal Management Plan, and consideration of Total Maximum, Daily Load (TMDL) and Natural Resource Damage investigations in the AOC. The plan underwent public review in November 2005 and a draft was submitted to Ohio EPA for review in early 2006 (MRAC 2006).

Over the two decades a great deal of information has been compiled and developed concerning the Maumee AOC. Some of the reports prepared by

the Maumee RAP, TMACOG, and the Ohio EPA include Maumee RAP Investigation Reports completed in 1988 and 1989; Maumee RAP Stage I Investigation Report (MRAC 1990); Maumee RAP Recommendations for Implementation (TMACOG 1991); and Activities and Accomplishments in the Maumee AOC 1991-2001 (MRAC 2002).

The Maumee RAP Stage I Investigation Report (MRAC 1990) identified the environmental problems of the Maumee AOC circa 1990. This report also identified the known sources of the pollutants and the impairments resulting from these problems. Stage I is intended as the first of three stages in the development of the complete remedial action plan trilogy as required by AOCs by the International Joint Commission. This report identified 10 beneficial use impairments (BUIs) for the Maumee Area of Concern including degraded fish and wildlife populations, fish tumors, degradation of benthos, eutrophication, and loss of fish and wildlife habitat (MRAC 1990). Assessment of BUIs is the standard approach for considering the status of water quality and related environmental issues in an AOC and the mitigation of these, also known as “delisting” is the aim of restoration by the RAP process. A 74-member MRAC spent two years working on Stage I where public participation included numerous committee meetings (with members drawn from government agencies, local planning authorities, environmental experts, the private sector, and concerned citizens), public meetings, document reviews, and consultants with a wide range of stakeholders. The resulting Stage I would become a blueprint for addressing water quality concerns as determined by the BUIs and also set the framework for subsequent community engagement in the Maumee AOC.

Following the review and approval of the Stage I report by IJC and Ohio EPA, the MRAC was divided into eight subcommittees to address specific issues and the steps needed to organize efforts to undertake solutions to resolve key water quality concerns. These subcommittees involved representation from key stakeholders such as environmental regulatory agencies, local governments, experts from area universities, and citizen organizations. The subcommittees reflected a consideration of both the identified BUIs from the Stage I report, but also the interest of stakeholders and the targeted efforts to address the most fundamental and significant issues impacting water quality in the AOC. Examples of some of the most active and successful subcommittees (in terms of eventual actions and activities) included dredge disposal, dumps and landfills, home sewage disposal, and public and industrial discharges. It should be noted that local commitment and leadership (often by key individuals, including representatives from local governments and citizen volunteers) would be key ingredients to the success of these subcommittees. The Maumee RAP Recommendations for Implementation (TMACOG 1991) was written as a comprehensive listing of the many issues and tasks that needed to be undertaken to restore the Maumee AOC. This report led to extensive sampling

throughout the Maumee AOC and guided other research and community education projects. To this day, the current Maumee RAP continues to advocate and/or directly sponsor programs and activities to address the projects and issues outlined in the Maumee RAP Recommendations for Implementation.

In 1996 the members of the Maumee RAP began to consider the progress in respect to the activities outlined in the 1991 implementation report and with the 10th anniversary of the establishment of the Maumee RAP and the first public community meeting, the MRAC undertook an exercise to prepare a strategic plan. This plan would establish future goals, guide future activities, and set a structure intended to improve the ability of the MRAC to define accomplishments in the area of addressing BUIs within the AOC. The monthly meetings of the MRAC and various subcommittees worked to redefine and expand the intended goals and actions to be undertaken by the Maumee RAP. The results of this planning exercise emphasized the importance of the Maumee RAP as a partnership and that cooperation among all groups, parties and stakeholders within the Maumee AOC (including those not directly working or affiliated with the MRAC) was essential to success. The MRAC was charged with oversight and general operational direction of the Maumee RAP while the various subcommittees were to undertake programs and activities within their defined issue or focus area. Each action group stated a purpose statement, short and long term goals, activities to be undertaken, potential barriers to success, and help needed. Action groups were organized around four issues: agricultural runoff, dumps and landfills, open space and wetlands, and urban runoff. To assist in the operational activities and program of the Maumee RAP a finance action group and public outreach and education action group were also established. In acknowledging the growing interest in watershed planning in the United States, Ohio and the Great Lakes Basin, action groups were created to focus on area specific challenges within two of the most significant (and impaired) watersheds within the Maumee AOC: the Ottawa River and Swan Creek – both located largely within the City of Toledo. Each year the Maumee RAP, and the individual action groups would prepare lists of their activities and accomplishments, highlighting projects and initiatives linked to water quality concerns within their focus area and to the BUIs for the Maumee AOC. A full series of these annual reports can be examined at www.partnersforcleanstreams.org.

Many of these programs and activities, along with those projects conducted by others in the Maumee AOC community were highlighted in the activities and accomplishments report for the Maumee Area of Concern, 1991-2001 (MRAC 2002). This report represented the first attempt to list and summarize the many projects and efforts undertaken with the Maumee AOC, by the Maumee RAP and its committees, and other community partners. More than 300 items are listed within 24 different issues identified that cross the BUIs for the Maumee AOC. In addition, for each listing an action and activity

are identified, the level of Maumee RAP involved determined, date of the activity or project, the BUIs affected and a summary description. The actions range from small scale one time projects, such as native grass seedings, to annual activities such as educational workshops, and to the assessment and mitigation of contaminated industrial landfills sites that involved millions of dollars of local, state and federal funding and multi jurisdictional involvement and regulatory actions. Although the report clearly highlighted a high level of activities and the completion of projects, one limitation was the inability to easily link the completion of the projects and activities to efforts that were addressing or resolving BUIs.

Over the last decade of projects, planning and public outreach a number of priorities were identified the required targeted initiatives by the Maumee RAP and local partners. Notable successful examples include the Give Water a Hand program to provide information and tip cards to businesses and local residents on the importance of conserving and protecting water resources, supporting regional efforts towards creating a storm water management standards manual developed by TMACOG and Lucas County, stream dam mitigation projects, inventorying and assessing rural septic systems and their impacts on stream and ditch water quality, and assisting with various opportunities to address contaminated river sediments through proposed projects for Great Lakes Legacy Act (GLLA) funding. The Maumee RAP, and later Partners for Clean Streams (PCS) also oversaw the greatly successful Clean Your Streams annual river, stream and lake clean up activity undertaken each September in the Maumee AOC as part of the Ohio Coast Weeks Program and the International Coastal Cleanup event. Clean Your Streams grew rapidly over the years to become the largest clean up event the Ohio Coastal Weeks with more than 600 volunteers removing garbage and debris from over 50 sites within the Maumee AOC and Toledo area. Additional Maumee RAP planning and implementation efforts were targeted at addressing the loss of wetlands and developing a community based inventory and assessment tool for stemming impacts to wetlands from new development within the Lucas County, Ohio portion of the Maumee AOC (Lawrence et al. 2004, Lawrence 2005).

In January 2006, the Maumee Remedial Action Plan (RAP) Committee submitted a State II Watershed Restoration Plan for the Maumee River Great Lakes Area of Concern (AOC) to the State of Ohio for review and endorsement (www.partnersforcleanstreams.org). The plan was created in order to fulfill the requirements, needs and/or use of five water quality programs, including: Ohio Department of Natural Resources Watershed Coordinator Program (ODNR 2006, OEPA 2003); Ohio EPA Great Lakes RAP Program and state RAP delisting targets (OEPA 2005); Ohio DNR Coastal Non-point Source Pollution Control Program (ODNR 2007); Ohio EPA Total Maximum Daily Load Program; and US Fish & Wildlife Service Natural Resources Damage Program (ODNR 2000, OEPA 2003).

This plan is intended to serve as a comprehensive regional water quality improvement plan in order to provide a single resource for all jurisdictions, agencies, organizations, and individuals who are working to restore the waterways within the Maumee AOC. The plan includes information and maps regarding: Great Lakes Areas of Concern and Remedial Action Plans; an environmental background on the Maumee AOC (hydrology, geology, ecoregions, landuse, etc.); information for the six 11-digit hydrologic units; and one large river unit that comprise the Maumee AOC (MRAC 2006).

Watershed Projects Tables (WPTs) were also prepared that contain detailed project lists for each major watershed and the WPTs were organized to facilitate the delisting of areas and/or issues for the Maumee AOC. The WPTs include: the causes and sources of water quality concerns; projects; potential project partners; funding sources; timeline; status; performance/Environmental Measures; Hydrological Unit Code (HUC)/Stream Segment Addressed; and the Beneficial Use Impairment (BUI) affected (MRAC 2006).

The plan received “Full Endorsement Pending” status from the State of Ohio and it is anticipated that the plan will be fully endorsed with the completion of a Coastal Nonpoint Source Pollution Management Measures section (Lawrence 2011). As the Maumee RAP Advisory Committee begins the implementation of this plan, they are evaluating which projects will best lead them to delisting, as well as how PCS can establish itself as a new organization with community support. This strategic and organizational planning is expected to be captured in Volume 3 of the plan, which is expected to be submitted to Ohio EPA along with other requested changes in 2012.

During this planning and review stage the Maumee RAP Advisory Committee continued to develop and implement watershed projects and has maintained its community outreach efforts such as:

- Ecological and Human Health Risk Assessment for Duck and Otter Creeks;
- Highland Park Dam Decommissioning and Riparian Enhancement;
- Wetland and Riparian Inventory and Restoration Plans for Swan Creek and the Ottawa River;
- Partnering for Clean Streams Scout Patch Program;
- Get the Lead Out!; and
- Clean Your Streams.

While the above documents were being prepared, many other activities were also occurring. Research was being conducted and additional issues were being addressed. The Maumee RAP philosophy, process, and program all rely on the power of partnerships. Without community partners the Maumee RAP would not succeed and the Maumee AOC would not be restored. These occurred from both within the RAP structure by the action groups and

outside through community partners. For more details on these various and projects the reader is referred to the website of Partners for Clean Streams (www.partnersforcleanstreams.org).

After months of discussion and a process of considered organization and capacity review, the Maumee RAP Committee determined in early 2007 that their best path forward for efficiency, effectiveness, and sustainability would be to form their own non-profit 501(c)3 organization and to leave the umbrella of the Toledo Metropolitan Area Council of Governments (TMACOG), which has been the “local host” for the Maumee RAP since its formation in 1987. In March 2007, Partners for Clean Streams (PCS) Inc. was officially created as the new “umbrella” organization for various water quality programs and initiatives within the Maumee AOC. In January 2008, the Maumee RAP Committee completed its merger into the PCS organization to become the Maumee RAP Advisory Committee. PCS was formed with an interest in supporting local and regional water quality improvements in the metro-Toledo area. PCS aims to strive for abundant open space and a high quality natural environment; adequate floodwater storage capacities and flourishing wildlife; stakeholders who take local ownership in their resources; and rivers, streams, and lakes that are clean, clear and safe (www.partnersforcleanstreams.org).

Since January 2008, the Maumee RAP Advisory Committee (MRAC) has been nestled within the committee structure of PCS, along with a Development Advisory Committee (DAC). Together they serve to assist the PCS Board of Directors to deliver a wide range of programs, projects, and community outreach efforts associated with water quality improvements that have been of long standing interest to the Maumee RAP community. Community organizations and citizen volunteers comprise the memberships of PCS and its standing committees: MRAC and DAC.

PCS continues to assist other community partners with projects such as the Ottawa River Dam Decommission and Stream Restoration Project; Ottawa River Wetland Inventory; and efforts of the Toledo Rain Garden Initiative, supporting and advocating for additional water quality monitoring and aquatic ecosystem assessments, including the completion of Total Maximum Daily Load (TMDL) studies for rivers and streams in the Maumee AOC by Ohio EPA, numerous wetland and riparian habitat inventories and restoration projects, public education and outreach efforts, community watershed tours and river canoe trips, engaging local and regional environmental non-government organizations such as the Black Swamp Conservancy, Toledo Metro Parks, the Ohio chapter of the Nature Conservancy Duck and Otter Creeks Partnership, the Boy Scouts of America, and many others. PCS has also continued the successful long history of cooperation and engagement by numerous local and regional government agencies in addressing water quality issues within the AOC, including TMACOG, Lucas County, City of Toledo, Lucas County, City

of Sylvania, Sylvania Township, City of Oregon, Wood County, Ottawa County, Washington Township, and the Village of Ottawa Hills. Since 2008 many of these community based efforts have focused on habitat restoration within the Maumee AOC, leading to a grant from the 2010 Great Lakes Restoration Initiative (GLRI) was awarded by the US EPA Great Lakes National Program Office to PCS that will be utilized to conduct a US \$1.3 million wetland, riparian and stream corridor restoration project within the Ottawa River/Ten Mile Creek Watershed of the Maumee Area of Concern.

DISCUSSION

The history of the local remedial action planning efforts in the Maumee AOC reveals the challenges and complex nature of addressing the major water quality concerns and the struggle within a community to determine the appropriate and most effective means of organizing the citizen based participatory approach. It appears that the evolution in such efforts can be characterized by the presence of five steps of focusing local attention and actions within the Maumee AOC community to first understanding the problems and then determining the best pathways towards solutions.

Is Everyone in the Room?

With the initial formation of the Maumee RAP in 1987, a strong effort was made to develop an inclusive planning approach to ensure that all stakeholders, partners and voices were heard and that community groups, agencies and local citizens were able to participate in the formation of the guiding principles and studies to better understand the range of water quality concerns that existed within the Maumee Area of Concern. The initial MRAC included 74 members with representation from all sectors and key stakeholders: government agencies, environmental organizations, industries and the private sector, concerned citizens, experts from consulting firms and universities, and many others. For the first several years of its existence a high level of interest and support existed for the Maumee RAP as the local committee engaged the participation of the public in key essential decision making in regards to identifying and assessing the key issues that needed to be addressed and fostered a strong sense of community involvement and stewardship of the Maumee AOC. The enthusiasm and energy behind the creation of the MRAC, and the strong recognition of the need for concrete actions and solutions to address water quality concerns in the rivers and streams within the Maumee AOC, would drive much of the early success and achievements obtained by the MRAC and its community partners.

The inclusiveness and sense of community embodied by the Maumee RAP progress and the dedicated involvement of many key organizations, agencies and citizens was a remarkable undertaking and achievement of the Maumee RAP.

There are Some Big Problems Here!

With the preparation of the Maumee RAP Stage I report and Strategic Plan, it became very apparent that the vast geographic size of the AOC and the complex diverse nature of the beneficial use impairments were both presenting great challenges in planning and decision-making by the local community. In addition, the lack of basic science, monitoring, and baseline data (such as water quality measures and parameters) would mean that any efforts to immediately and swiftly resolve beneficial use impairments (BUIs) would be daunting, if not impossible. Yet the community interest and support for the Maumee RAP, although still very new with a low profile by the general public and not as well understood by many citizens, would place pressure on addressing immediate concerns and making progress on some fronts – in fact on any front – to tackle the underlying water quality concerns driving the BUIs.

The continued involvement and engagement of key local partners and stakeholders continued and the completion of the Stage I report was seen as a key “watershed” event by the Maumee RAP. The level of involvement by professionals and scientists was especially significant as it represented a continued commitment by those whose expertise and experience was essential to translating scientific data and knowledge into decision making regarding actions and solutions to address the BUIs. There was also a growing and continued effort to further the engagement of citizens and other community organizations through outreach and education activities to address the need for better understanding of the issues and challenges facing the Maumee AOC and RAP process and to reach a wider diverse representative of stakeholders drawn from various local communities and existing organizations beyond those who were initially involved with the establishment of the Maumee RAP and the completion of the Stage I report.

As is common in many planning exercises the initial excitement and enthusiasm stemming from the completion of the Stage I report would soon be met with the realization of the challenges ahead facing the Maumee RAP and local community on how to achieve the lofty goals set to “delist” the individual BUIs and by collective actions move the Maumee from an Area of Concern. Although many successful projects and activities, many noted accomplishments would be achieved, and priority actions undertaken that would sustain interest and involvement in the Maumee RAP for the coming years. Such activities were often focused in several of the Maumee RAP action groups that managed

to involve and engage a strong and diverse representation of local stakeholders committed to making clear progress towards addressing key challenges and concerns, especially in the areas of rural runoff and dumps and landfills.

We Must All Work Together

During the decade following the completion of the Stage I reports, attempts were made to address the most serious and persistent problems associated with BUIs. One example was the long effort by many different partners, federal and state agencies, and local governments to address the sources of contaminants from numerous industrial landfills along the Ottawa River in the City of Toledo. At the cost of millions of dollars in federal and state funding these efforts during the 1990s led to the remediation of the most significant of these sites. During this time the Maumee RAP Committee had organized an action group on Dumps and Landfills whose active members continue to advocate and lobby for additional efforts and focus on these sites due to their ongoing contributions of PCBs and other toxic contaminants into the Ottawa River. It also became very apparent that with the organizational structure and involvement of those with the Maumee RAP. There existed a certain capacity and ability to undertake the necessary steps to achieve successes with targeted BUIs or watersheds within the Maumee AOC, although these efforts need to extend beyond the direct oversight or involvement of the Maumee RAP to include those agencies, organizations and individuals with responsibilities, authorities and the resources (especially financial and regulatory) to tackle the most important and often most challenging and complex issues that faced the Maumee AOC.

In addition to the aforementioned industrial landfills issue, the Maumee AOC was characterized by a number of long term, regional, and complex water quality issues linked to BUIs that were the result of a multitude of causes and sources for water pollutants stemming from a variety of point and non-point sources. The urbanization portion of the Maumee AOC, especially within the City of Toledo, was plagued by aged and degraded sewer and water treatment services resulting in all too frequent combined sewer overflow (CSO) discharges of significant volumes of untreated sanitary and storm sewer waters into the Ottawa River, Swan Creek and Maumee River. This issue would require considerable political willpower, financial resources, regulatory and legal means, and commitment of local, regional, and state governments – way beyond the capacity and role of the Maumee RAP. In this case such involvement and activities in many ways superseded the role and involvement of the Maumee RAP where the fundamental actions needed to address the problem were more a function of partnerships and collaboration rather than direct activities by the Maumee RAP. The problem of CSOs within the City of Toledo would ultimately

involve the negotiation of a legally binding consent agreement between the City and US EPA requiring considerable effort (and at the cost of more than US\$400 million by the local taxpayers and utility ratepayers) to resolve the infrastructure improvements by the creation of another local partnership – the Toledo Waterways Initiative.

Solutions are the Solution

By 2001 it had become very apparent that the preceding 14 years had resulted in an expansive and impressive number of successful projects and efforts within the Maumee AOC by a large number of key groups, agencies, organizations and volunteers. The activities and accomplishments report by the Maumee RAP Committee highlighted hundreds of these efforts and the many dollars and volunteer hours committed to undertaking the wide range and scope of activities and initiatives within the Maumee AOC. Although a large number of activities and projects continued to be proposed, developed, implemented and completed within the Maumee AOC by the MRAC and other community partners, there was a growing concern or frustration rising over the need to move beyond planning and organization to actual solutions linked to addressing specific solutions that would resolve BUIs. The MRAC and actions groups began to expand its commitment and involvement from public outreach and education, facilitating and coordinating AOC priorities and activities, and supporting the direct work of other community organizations and agencies, to undertake more solution based efforts.

Examples would include efforts by the rural runoff action group to work with local farmers on establishing conservation buffer strips on actively cultivated farmland to reduce the input of soil from the erosion off farmland, bringing together local governments in the urban communities of the Maumee AOC to consider improvements to storm water management practices, and the work of open space and wetlands action group to secure a state project grant to complete a classification and inventory of wetlands with Lucas County through the use of remote sensing and geographic information systems (GIS) technologies (Lawrence et al. 2004). The level of involvement and activity by these action groups reached a renewed interest and effort as members became directly involved with projects from concept to design and completion. The results of these efforts would result in improvements directly linked to water quality issues within the Maumee AOC and drove interest and enthusiasm towards a move forward in successfully addressing BUIs and hope for continued progress. Alas this progress was not able to be sustained beyond the completion of the individual projects which had driven the continued public participation in the efforts of the MRAC and action groups and as these successful projects reached their natural conclusions, continued involvement and commitment by many MRAC and action groups would begin to wane. The general consensus

was that after over 20 years, marked by much success and the completion of a large number of projects and activities, which collectively had achieved great progress within the Maumee AOC, the community was disappointed that measured achievements in the solutions and improvements of BUIs had yet to be gained and more fully achieved.

Let's be More Focused and Result Orientated

As the Maumee RAP approached its 20th anniversary in 2007, it had become apparent that for all the successes and achievements over the previous two decades, the fundamental goal of removing beneficial use impairments was falling short. It was no fault of the efforts, funding, partnerships, commitment, and involvement of stakeholders and volunteers, but instead a reflection of the acknowledgement of the enormity of the endeavor first expressed early during the existence of the Maumee AOC – the vast size of the area and complexity of the problems underlying the BUIs. The work on the Stage II/Watershed Restoration Plan and the formation of Partners for Clean Streams (PCS) were both in part driven by – and the result of – an effort to reformulate a more focused and strategic approach to planning efforts to address the BUIs within the Maumee AOC. These efforts were also greatly influenced by renewed and revised orientations by US EPA GLNPO and Ohio EPA to make the Great Lakes AOC and RAP progress more goal driven towards delisting AOCs by better understanding, evaluating, addressing and where possible eliminating the BUIs.

Then in 2005, Ohio EPA released comprehensive directions and guidance towards delisting BUIs by establishing set scientific targets for each BUI that if attained by the evidence of quantifiable measures would allow for delisting of BUIs. This event would in many respects revitalize the local community towards considering the means by which the Maumee RAP could identify specific goals to reach in order to begin to more directly address specific BUIs and facilitate the necessary projects and activities to mitigation BUIs to the point at which their status would led towards delisting. In addition, US EPA and Ohio EPA in assessing progress and barriers towards success with the Great Lakes Areas of Concern, would begin to encourage innovations in addressing BUIs, the functional organizational structures for AOCs, renewed funding opportunities for operations and projects tied to BUIs, and generally support and direct RAPs, including the Maumee, to focus on those activities and projects that could be directly measured and tied to resolving BUIs. In the Maumee AOC this change and challenge to rethink approaches would result in moving to a mindset and organizational structure that would better facilitate actions directed at specific projects and in watersheds.

From 2005 to 2007, the MRAC downsized to a more lean and functional entity and discarded the long standing approach and efforts around action

groups to have the MRAC serve more as an advisory function to other existing groups and organizations already in place working to address water quality issues within the Maumee AOC. It would be the role of the MRAC to link these projects and activities to BUIs and support and direct the focused efforts within the Maumee AOC towards these issues. In 2007, in order to create the necessary organizational structure, and flexibility to undertake this new role, the MRAC became a committee of Partners for Clean Streams (PCS). MRAC would transform into the role of public participation and input into the directions and activities of PCS that assumed the day to day operations and annual programs and activities formerly the responsibility of the MRAC. PCS would become the legal and financial agent for the MRAC and as a 501(c)3 non-profit organization PCS had the capacity to secure additional financial resources to support programs and initiatives with the Maumee AOC, including public outreach and education, environmental improvements, habitat restoration, and water quality monitoring. PCS would work in association with TMACOG and the Duck and Otter Creeks Partnership to complete a watershed restoration plan for the Maumee AOC, which would also take the form of a Stage II report. From 2007-2009 PCS secured a grant from the Joyce Foundation to undertake three urban restoration projects within the Maumee AOC. In recent years, PCS has continued to foster community partnerships, engage local groups in undertaking projects directed at BUIs within the Maumee AOC, supported the ongoing efforts by other organizations and agencies to address water quality concerns, and continued to raise the public awareness and involvement of the varied stakeholders who have interest in – or support for – the collective efforts towards delisting of the BUIs for the Maumee AOC.

CONCLUSION

As discussed by Downs (1972), the challenge of maintaining public interest (and the resulting community involvement and commitment) needed to address environment concerns is a real and serious barrier to achieving long term sustained success and achievement aimed to achieve significant success. The questions raised by Downs (1972), and subsequently observed in many community and volunteer based environmental organizations including with the Maumee RAP, is how to maintain and in fact foster, consistent progress towards measurable success in the light of the time and effort required for such achievement resulting in a loss or decline in the participation so necessary for such locally based community efforts. The history of community involvement and participation in the RAP process within the Maumee AOC can be characterized by the evolution of aims and approaches to engage the community and the range of stakeholders in attempts to better understand and address the fundamental water quality concerns and issues that result in the

beneficial use impairments identified and addressed for the rivers and streams within the Maumee AOC.

As the 25th anniversary of the 1987 amended Great Lakes Water Quality Agreement – which designated the Great Lakes Area of Concern – is soon approaching an opportunity presents itself to reflect on the experiences, challenges and opportunities represented by the efforts and accomplishments of individual Great Lakes RAPs within the AOC and the collective history and lessons learned. The experience of the Maumee RAP as a forum of community based participatory planning and governance provides some reflection and experience, highlighted by its location as the community where the 1987 GLWQA was first signed (in Toledo in November 1987) and where one of the initial local community Great Lakes RAP organizations was formed. The steps or approaches undertaken by the Maumee RAP community over the last few decades reflect how difficult and overwhelming the challenges have been to consider how – and make efforts towards – resolving the complex numerous water quality challenges that exist with an Area of Concern. The efforts have also shown a natural evolution and progression in the dedication and commitment of a community represented by agencies, organizations and citizens that can make progress towards a collective and focused efforts to again return our rivers and streams to a “drinkable, fishable and swimmable” state.

The flow of water has remained a constant natural process within the Maumee Area of Concern as the landscape leading to the drainage of these waters continues to be impacted and modified by a wide range of human activities and land uses and the need to engage and involve communities in a process of local effort and outreach to preserve and protect the valuable water resources so critical to sustaining life, the environment, and future of the watersheds, rivers and streams of the Great Lakes. The ongoing flow of water has also continued to drive the necessity for dedicated planning approaches in these local communities that watch the seasonal, annual and long term drainage of water as an essential life blood deemed so important to the sustained subsistence and survival as a collective society and as individuals with the Maumee AOC.

ACKNOWLEDGEMENTS

The projects, programs and activities discussed in this chapter have been undertaken by the Maumee RAP Advisory Committee (MRAC) and its predecessors (1987-2007) and the Partners for Clean Streams Inc (PCS), Board of Directors, Executive Director, volunteers and community partners (2007-present). The preparation of the Maumee AOC Stage II/Watershed Restoration Plan was undertaken with direction from the Maumee RAP Advisory Committee (MRAC) and volunteers serving on a Plan Development Team

lead by Cherie Blair, Ohio EPA. Additional support for the plan preparation was provided by TMACOG, US EPA Great Lakes Program Office, Ohio EPA Division of Surface Water, and the Ohio Great Lakes RAP Program. The author has served as a member of the Maumee RAP Advisory Committee (2000-present), Maumee Rap Stage II Report Plan Development Team(2005-2006), and since 2006 has served as President, Board of Directors of Partners For Clean Streams Inc. The ideas expressed in this chapter are those of the author and do not necessary reflect those of the PCS, MRAC, Ohio EPA, or other agencies, individuals, and organizations cited in this acknowledgement.

REFERENCES

- Beeker, J. and G. Studen, and L. Stumpe. The Cuyahoga Remedial Action Plan Coordinating Committee: A Model for Building Community Ownership of a WatershedRestoration Plan. *In*: A.A. Jennings and N.E. Spangenberg [eds.]. 1991. Surface and Ground Water Quality: Pollution Prevention, Remediation and the Great Lakes. American Water Resources Association, Bethesda, MD. USA.
- Beierle, T.C. and D.M. Konisky. 1999. Public Participation in Environmental Planning in the Great Lakes Region. Resources for the Future. Washington, D.C., USA.
- Downs, A. 1972. Up and Down with Ecology – The Issue Attention Cycle. *Public Interest* 28: 38-50.
- Grima, A.P. Analyzing Public Inputs to Environmental Planning: A Summary and Discussion of Public Involvement in Great Lakes Management. *In*: G.A. Daneke, M.W. Garcia and J.D. Priscoli [eds.]. 1983. Public Involvement and Social Impact Assessment. Westview Press. Boulder, Colorado, USA.
- Gurtner-Zimmermann, A. 1995. A Mid-term Review of Remedial Action Plans: Difficulties with Translating Comprehensive Planning into Comprehensive Action. *Journal of Great Lakes Research* 21(2): 234-247.
- Gurtner-Zimmermann, A. 1996. Analysis of Lower Green Bay and Fox River,Collingwood Harbour, Spanish Harbour, and the Metro Toronto and Region Remedial Action Plan (RAP) Process. *Environmental Management*. 20(4): 449-459.
- Hall, J.D. and K. O'Connor, and J. Ranieri. 2006. Progress Towards Delisting a Great Lakes Area of Concern: The Role of Integrated Research and Monitoring in the Hamilton Harbour Remedial Action Plan. *Environmental Monitoring and Assessment* 113: 227-243.
- Hartig, J. and R.L. Thomas, and E. Iwachewski. 1996. Lessons from Practical Application of an Ecosystem Approach in Management of the Laurentian Great Lakes. *Lakes and Reservoirs: Research and Management*. 2: 137-145.
- Kellogg, W.A. 1998. Adopting an Ecosystem Approach: Local Variability in Remedial Action Planning. *Society and Natural Resources*. 11(5): 465-484.
- Krantzberg, G. 2003. Keeping Remedial Action Plans on Target: Lessons Learned from Collingwood Harbour. *Journal of Great Lakes Research* 29(4): 641-651.

- Krantzberg, G. and E. Houghton. 1996. The Remedial Action Plan That Led to the Cleanup and Delisting of Collingwood Harbour as an Area of Concern. *Journal of Great Lakes Research* 22(2): 469-483.
- Lawrence, P.L. 2011. Achieving Teamwork: Linking Watershed Planning and Coastal Zone Management in the Great Lakes. *Coastal Management* 39: 57-71.
- Lawrence, P.L. A Watershed Restoration Action Strategy (WRAS) for Open Space and Wetlands in the Maumee Remedial Action Plan (RAP), Ohio. pp. 36-45. *In: G.A. Tobin and B.W. Montz [eds.]. 2005. Papers of the Applied Geography Conferences, vol. 28. Applied Geography Conferences Inc., Kent, Ohio, USA.*
- Lawrence, P.L. and K. Czajowski, and N.Torbick. Policy Implication of Remote Sensing in Understanding Urban Environments: Developing a Wetlands Inventory for Community Decision-Making in the Maumee Area of Concern, Ohio. pp. 23-36. *In: R. Jensen, J. Gatrell, and D. McLean [eds.]. 2004. Place, Meaning and the Politics of Cities: Alternative Methodologies for Using Geo-Spatial Technologies to Understanding Urban Environments. Springer Verlag Press, London, United Kingdom.*
- Maumee Remedial Action Plan Advisory Committee [MRAC]. 1990. Maumee River Remedial Action Plan: Stage I Investigation Report. Ohio EPA Northwest District Office, Bowling Green, Ohio, USA. (www.partnersforcleanstreams.org)
- Maumee Remedial Action Plan Implementation Committee [MRIC]. 1997. Maumee River Remedial Action Plan: Strategic Plan. Ohio EPA Northwest District Office, Bowling Green, Ohio, USA. (www.partnersforcleanstreams.org)
- Maumee Remedial Action Plan Committee [MRAC]. 2002. Activities and Accomplishments in the Maumee Area of Concern 1991-2001, Maumee RAP, Toledo, Ohio, USA. (www.partnersforcleanstreams.org)
- Maumee Remedial Action Plan Committee [MRAC]. 2006. Maumee Area of Concern Stage II/Watershed Restoration Plan, Maumee RAP, Toledo, Ohio, USA. (www.partnersforcleanstreams.org)
- Nelson, L.S. and L.F. Weschler. 1998. Institutional readiness for integrated watershed management: The case of the Maumee River. *The Social Science Journal*. 35: 565-576.
- Ohio Department of Natural Resources [ODNR]. 2000. Ohio Coastal Nonpoint Pollution Control Program Plan. Division of Soil and Water Conservation, Columbus, Ohio, USA.
- Ohio Department of Natural Resources [ODNR]. 2006. Guidance for Watershed Projects to Address Ohio's Coastal Nonpoint Pollution Control Program. Division of Soil and Water Conservation, Columbus, Ohio, USA.
- Ohio Department of Natural Resources [ODNR]. 2007. Combined Coastal Management Program and Final Environmental Impact Statement for the State of Ohio. Office of Coastal Management. Sandusky, Ohio, USA.
- Ohio Environmental Protection Agency [OEPA]. 2003. A Guide to Developing Local Watershed Action Plans in Ohio. Division of Surface Water, Columbus, Ohio, USA.
- Ohio Environmental Protection Agency [OEPA]. 2005. Delisting Targets for Ohio Areas of Concern. Division of Surface Water, Columbus, Ohio, USA.
- Toledo Metropolitan Area Council of Governments [TMACOG]. 1991. Maumee River Basin Area of Concern Remedial Action Plan: Recommendations for Implementation. TMACOG, Toledo, Ohio.