Evaluation of State and Regional Water Quality Monitoring Councils

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EPA Office of Policy, Economics, and Innovation
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FINDINGS IN BRIEF

The National Water Quality Monitoring Council and EPA have encouraged states to form state and regional Water Quality Monitoring Councils ("Councils") to coordinate monitoring among the entities active in each state. States generally have between six and eight major–and many more minor–monitoring and data management programs. A single Council can take the lead role in coordinating their functions within a state (or across states), especially in regions or watersheds where no coordination currently exists.

EPA's Office of Water has declared that improved water monitoring is among its highest priorities, as more comprehensive data can better support information-based environmental protection. EPA recognizes that state and regional Councils can make significant contributions to this effort. The oldest Councils have been operating for over a decade; this report studies their structure at the state and regional level, evaluates their effectiveness in achieving EPA objectives, and identifies possible lessons that may help current Councils and facilitate the operation and establishment of additional Councils.

Through background research and discussions with Council staff, EPA learned several important lessons relevant to state and regional Water Quality Monitoring Councils:

- **Councils Yield Substantial Benefits:** While difficult to quantify, Council benefits stem from their coordination of a significant number of independently funded agencies working in a complex, seasonal, and technically demanding field.

- **Effective Councils Have State Support:** The most effective Councils in our study set have state support in the form of an expectation of performance, funding, staff, management-level endorsement, and/or technical expertise.

- **Councils Have Difficulty Keeping Momentum:** At nearly all Councils, building and keeping momentum for Council initiatives is a primary challenge.

- **Dedicated Staff are Invaluable:** Successful Councils have staff working in an official capacity on the Council's day-to-day activities.

- **Councils Can Unify Disparate Parties:** In cases where Council members act to protect the interest of their primary agencies, collaborative development of a Council Strategic Plan can bring representatives in line behind a set of clear objectives.

- **Councils Vary in Design and Objectives:** What works at one Council may not prove effective at all Councils. This may arise out of variation in the mix of personalities at a Council; the powers granted to the Council at its inception; or the Council's traditional relationship with state agencies in its area of concern.

ACKNOWLEDGMENTS

Industrial Economics, Incorporated (IEc) performed this evaluation for EPA's Office of Planning, Analysis, and Accountability (OPAA) under Contract 68-W-02-048 between EPA and IEc. The IEc evaluation team comprised Colin Macdonald and Andy Schwarz; Chris Leggett of IEc assisted in developing Council discussion guides. Chuck Spooner and Mike Mason of EPA's Office of Water and Eric Marsh of EPA's Office of Policy, Economics, and Innovation played technical advisory roles. Representatives of state and regional Councils donated their time in responding to our information requests, and in reviewing and editing drafts of this document.

INTRODUCTION

Background and History of Water Quality Monitoring Councils

In 1992, the United States Office of Management and Budget directed relevant Federal Agencies to review, evaluate, and improve national water quality monitoring activities. To respond to this charge, the U.S. Environmental Protection Agency and U.S. Geological Survey created and co-chaired the Intergovernmental Task Force on Monitoring Water Quality (ITFM). In its three-year duration, ITFM studied and developed recommendations in several key areas related to the creation of an integrated, nationwide monitoring strategy.

Formed in 1997 under the Federal Advisory Committee Act (FACA), the National Water Quality Monitoring Council (NWQMC) succeeded ITFM and focused attention on developing a "nationwide strategy to improve water quality monitoring, assessment, and reporting." The NWQMC aims, through its strategy, to address issues including the inadequate coverage of monitoring programs, comparability of collected data, and the need for storage systems that preserve data for future use. The NWQMC has focused attention on working to increase cooperation and comparability among states and other entities in monitoring design, data analysis, and data management.

The NWQMC and EPA have encouraged states to form similar Water Quality Monitoring Councils ("Councils") to coordinate monitoring among the entities active in each state. States generally have between six and eight major–and many more minor–monitoring and data management programs. A single Council can take the lead role in coordinating their functions within a state (or across states), especially in regions or watersheds where no coordination currently exists.

States have responded to EPA's charge with significant variation. The Councils in our study set (see below) represent some of the most well-organized and well-established of the efforts aimed at coordinating monitoring. Contrastingly, several states (not included in this study) have less-formal mechanisms dedicated to the task. For example, Alabama, Connecticut, Minnesota, and Missouri all hold periodic technical meetings to coordinate their monitoring programs. In other cases, Council objectives are fisheries-specific (e.g., Oregon's *Plan for*

Salmon and Watersheds) or watershed-based (e.g., Ohio River Valley Sanitation Commission; Susquehanna River Basin Commission).

The noted variation across Councils complicates the task of making generalizations about Council structure and activities. Using elements common to the Councils in our study set, EPA drafted a logic model depicting the structure and activities of a typical Water Council. EPA intends for the logic model to address variability across Councils by representing themes and elements central to most Councils. The model graphically depicts relationships between goals, activities, and outcomes common to the Councils we studied as part of this evaluation. Using the model, one can track how Council inputs and objectives influence the activities of a typical Council, yielding outcomes in line with the original Council objectives. We include the logic model as Appendix A.

Objectives of the Evaluation

The oldest state and regional Water Quality Monitoring Councils have been operating for over a decade[1]; this report evaluates their effectiveness in achieving EPA objectives, and identifies possible lessons that may help current Councils and facilitate the operation and establishment of additional Councils. Additionally, this report compares and contrasts the characteristics and objectives of eight Councils; discusses Council successes and barriers to success; identifies best practices; and develops recommendations for effectively obtaining the data necessary for critical Agency decision making.

Organization of the Evaluation

We begin the evaluation by describing our methodology and approach, including the means by which we defined research questions, selected the Councils comprising our study set, and collected information. In discussing evaluation findings, we describe the Councils in general terms, including their roles in the state(s) in which they operate; their structure and membership; and their objectives and activities. The report then discusses the successes attained by Councils, areas where Councils have fallen short, limitations that have contributed to those shortcomings, and Council best practices. We conclude this study by synthesizing lessons learned that may help streamline current Councils and facilitate the establishment of new Councils.

[1]The Wisconsin Groundwater Coordination Council was established in 1984. Most other Councils were established in the mid- to late-1990s.

EVALUATION METHODOLOGY AND APPROACH

Defining Research Questions

EPA and its contractor, Industrial Economics, Incorporated (IEc) began by defining the overarching themes that would drive the research effort, including Council characteristics, objectives, and successes achieving outcomes. Using EPA's paper *Elements of a State Water Monitoring and Assessment Program*[2], IEc developed a core set of questions–in line with the overarching themes of the evaluation–to explore with representatives of each Council. In *Elements*, EPA discusses the components essential to any state water monitoring program. Per the authority granted EPA in §106 of the Clean Water Act (CWA), EPA conducts an annual assessment of each state monitoring program prior to the award of grant funds; it will increasingly use these elements as evaluation criteria. The ten elements contained in EPA's paper are:

A. Monitoring Program Strategy
B. Monitoring Objectives
C. Monitoring Design
D. Core and Supplemental Water Quality Indicators
E. Quality Assurance
F. Data Management
G. Data Analysis/Assessment
H. Reporting
I. Programmatic Evaluation
J. General Support and Infrastructure Planning

While EPA intends these elements to focus the activities of states (not Councils), Councils should ideally strive to support their respective state(s) in these areas; this study evaluates, in part, the extent to which Councils support states in attaining these elements. Through discussions with EPA, IEc distilled the elements into a series of research questions comprising the points most relevant for the evaluation.

Defining the Study Set

With the help of EPA, we developed a list of Councils with which to explore our research questions:

- Colorado Water Quality Monitoring Council (Established 1999)
- Lake Michigan Monitoring Coordination Council (Est. 1999)
- Maryland Water Monitoring Council (Est. 1995)

[2] EPA Office of Water. *Elements of a State Water Monitoring and Assessment Program* (EPA Doc. No. 841-B-03-003). 2003.

- Montana Watershed Coordination Council, Water Quality Monitoring Workgroup (Est. 2000)
- Oklahoma Water Quality Monitoring Council (Est. 1998)
- Texas Water Monitoring Council (Est. 1997)
- Virginia Water Monitoring Council (Est. 1999)
- Wisconsin Groundwater Coordinating Council (Est.1984)

IEc and EPA collaboratively arrived at this study set by selecting among those Councils acknowledged by the National Water Quality Monitoring Council. We chose Councils to build a study set representative of multiple organizational levels (e.g., state, regional/watershed), providing for significant breadth in answering our research questions[3].

Collecting Available Information

For each Council, we first conducted an in-depth literature review that involved:

- Internet research at Council websites
- Internet research at State/Federal websites related to Councils and their activities
- Request of relevant documents from the Councils directly

During the early stages of the evaluation, IEc and EPA used an Information Matrix (included as Appendix B) as an organizational tool to define the information we sought to compile for each Council, and to identify data gaps as we moved forward with information collection. After conducting our baseline research, we organized our findings within the Information Matrix. IEc then analyzed these results to identify data gaps, and spoke with key personnel at each Council to help fill these gaps. In speaking with Council personnel, we posed a set of core questions to all respondents; additionally, we posed satellite questions that targeted data gaps or explored issues specific to individual Councils. IEc and the EPA collaboratively developed a discussion guide–including core questions and satellite questions–for each Council in our study set. We include a sample discussion guide as Appendix C.

Caveats

Readers should consider several caveats when weighing the results of this evaluation. First, the Councils chosen are a subset of the universe of Water Councils active nationally. In selecting Councils for our study set, we did not choose randomly. Instead, we chose–with the objective of developing a study set spanning contrasting organizational structures–from among those councils acknowledged by the National Water Quality Monitoring Council, which are likely to represent the most well-established Councils active nationally. Our study set of eight

[3] Through our discussions, we learned that the Water Quality Monitoring Workgroup of the Montana Council has been inactive since 2001. The Workgroup is taking steps to renew regular activities; for the purposes of this study, we evaluate it as it functioned while still active.

Councils includes the majority of the major Councils in the U.S. Second, our discussions yielded a limited pool of perspectives. While our discussions with key Council personnel were critical to the evaluation, resource constraints prevented us from capturing the perspective of those not active in Councils, but yet knowledgeable of or impacted by Council activities. Finally, this study lacks baseline and routine performance data for each Council.

EVALUATION FINDINGS

General Council Characteristics

The Role of Water Quality Monitoring Councils

Councils in our study set vary in what they are trying to achieve. All Councils set as their main objective some variation on "providing a forum for effective communication, collaboration, and cooperation" for individuals and entities involved in monitoring. However, variations occur among Councils' objectives in additional areas of interest. For example, the Maryland Council focuses on building capacity among monitoring entities and public outreach; in Wisconsin, the Council coordinates non-regulatory programs (per statute) and focuses exclusively on groundwater; the Colorado Council helps the state in providing structure for the acquisition, analysis, archiving, and dissemination of water quality information. The Virginia and Wisconsin Councils emphasized that they are careful not to involve themselves in setting policy or usurping power from state agencies; instead they see themselves as making objective recommendations in the interest of the state.

Council Structure

Council structure varies across our study set. Most Councils distinguish between the top-level advisory members and the general membership. The Wisconsin Council employs a strict organizational model, with a statutorily-defined group of eight holding decisionmaking positions, and an open membership serving on committees and receiving the Council newsletter. The Texas Council similarly distinguishes between its "Charter" and "General" membership; the former does not change, the latter does. The Maryland Council differs in the way it selects holders of decisionmaking positions. Rather than pre-defining its decisionmaking slots, a nominating committee selects from the most involved members, who must be confirmed by an informal vote of the board. By contrast, the Secretary of the Environment has the final say on membership in the Oklahoma Council, because the Council's official role is as an advisory board to the Secretary.

Other Councils have more egalitarian structures, with leadership roles assumed by those most interested, and a less-formal nomination process (VA, CO, MT). The Lake Michigan Council is unique in that it acts as more of an umbrella organization with a media-based approach. Rather than being organized by task (e.g., Monitoring Committee, Data Storage Committee), the Council is organized by "Monitoring Network" (e.g., Fisheries, Air,

Recreational Waters), which provides for resource leveraging opportunities by capitalizing on the expertise of individual monitoring entities.

Council Membership

Every Council in our study set includes state-agency staff among its decisionmaking members. To a lesser degree, Councils include federal and local (town/county) government staff, environmental groups, river groups, industry, private citizens, and other interested parties, as permitted. In particular, the general membership of Councils is often open to anyone interested. Councils generally have limited collaboration with statewide professional associations; most common is a shared membership across the Council and several professional organizations (OK, VA, WI). In some cases, Councils have co-sponsored conferences or meetings with professional associations (CO), or distributed brochures at their meetings (Lake Michigan).

Councils have generally seen little change in organizational representation over time. While there is flux among individual representatives, member organizations generally stay constant. The Colorado and Montana Councils have seen general declines in membership numbers across their volunteer memberships; the Colorado Council's membership has evolved into a "core group" of dedicated individuals.

Nearly all Councils hope to expand their membership. Our discussions revealed significant convergence among the sectors into which Councils are hoping to expand their membership and/or get more involvement from current members:

- Local Government (OK, VA, WI)
- Environmental Groups (OK, MT, MD)
- Public Health Agencies (MD, WI, CO)

Council Activities

Council activities generally fall under the commonly-stated objective of increasing communication, collaboration, and cooperation among water monitoring entities. All Councils (with the exception of currently-inactive MT) hold regular meetings–usually two to four times annually–and a regular conference. Many Councils (TX, VA, MT, WI, CO, Lake MI) involve themselves in developing an inventory of all monitoring efforts in their area of concern. All Councils recommend (to some degree) minimum data elements and/or sampling protocols to allow for comparability across monitoring efforts (though these protocols are not always developed internally at Councils).

Several Councils (OK, MD, TX, VA, WI) also address data management issues by either developing or endorsing data storage and transmission protocols. Three Councils (Lake Michigan, TX, VA) explicitly involve themselves in monitoring network design, and one Council (WI) advises the state in the disbursement of grant funds for water quality monitoring

research. In some cases, Councils convene workgroups related to state- or watershed-specific issues (e.g., Post-Fire Water Quality Monitoring Committee in CO).

Support of EPA's Elements

Councils also support, to varying degrees, the activities recommended by EPA in its *Elements* paper. However, given that Council establishment generally preceded EPA's *Elements* by a decade or more (among our study set), Councils were structured to meet the needs of their state or region rather than to address a Federal mandate. To the extent that Councils support the EPA's recommended elements, they flow from pre-existing Council activities. Table 1 presents the elements most important to the scope of this evaluation (as determined by EPA and IEc) and the extent to which Councils support states in completing the noted activity.

Table 1
THE EXTENT TO WHICH COUNCILS SUPPORT EPA'S ELEMENTS

ELEMENT	DESCRIPTION	LEVEL OF SUPPORT
Monitoring Design	Help to design a comprehensive monitoring program that addresses the specific concerns of the State	• Many Councils support the design of a comprehensive monitoring program to a limited extent. MT serves as the review committee for the Statewide Monitoring Program; MD Council's internal *Strategic Plan* also partially supports this; TX provides monitoring program recommendations, and its member organizations perform monitoring as part of their mandate; WI's *Statewide Strategy* (in development) will eventually support this activity.
Core and Supplemental Water Quality Indicators	Determine core and supplemental indicators for state- or region-wide monitoring	• Five Councils in our study set do not support their respective state(s) in determining core indicators for water quality assessment; three Councils provide such support, to varying degrees. OK is involved in "support assessment protocols" to help make impairment determinations; at the Lake Michigan Council, the Great Lakes Program Office defines indicators that Council members expand upon; MD has limited involvement defining indicators.
Quality Assurance	Define procedures to ensure scientific validity of monitoring/lab activities	• Most Councils provide some support to this element. OK has a QA/QC committee that formulates a uniform QA/QC plan for monitoring entities. Lake MI, WI, and CO define minimum data elements to promote consistency across monitoring elements. In MD, the Monitoring Methods Committee evaluates current methods to determine which are most appropriate.
Data Management	Help to store/manage data electronically, preferably in a system compatible with EPA's STORET	• Most Councils do not currently support their respective state(s) in storing/managing data electronically, though some Councils either do so currently or plan to do so. WI currently supports the State's Department of Natural Resources in promoting the need for STORET-compatible data. OK is developing a system that will be compatible with STORET. CO is evaluating the need to emphasize common data standards and exploring opportunities to increase the use of STORET among its members.
Reporting	Support state in Federal	• Most Councils do not support their respective state(s) in this

ELEMENT	DESCRIPTION	LEVEL OF SUPPORT
	report completion (e.g., Clean Water Act or Beaches Act)	respect–it is left up to the responsible state agency. CO is the lone exception; its data swaps have targeted data gaps to assist the state in its Triennial Review (Water Quality Standards) process, which supports the 305b/303d reports.
General Support and Infrastructure Needs	Forecast resource needs to fund planned Council activities	• Among our study set, most Councils have some mechanism of forecasting future resource needs. OK, Lake MI, and VA are the most comprehensive. OK gives individual committees primacy in financial matters; Lake MI discusses resource needs at the Steering Committee level, then brings results to the broader group; VA had a strategic planning exercise that resulted in an estimate of $50k annually to maintain current Council activities. CO was less comprehensive, identifying future direction, but not linking activities to budget required. (WI is similar, with a chapter in its annual report that prioritizes activities but does not link to budget.)
Programmatic Evaluation	Conduct internal audits to identify areas for improvement or streamlining	• None of the Councils perform regular audits. WI performs occasional audits; OK plans to incorporate audits into its upcoming *Strategy* document.

The Councils most supportive of state water quality monitoring programs are those with clearly-defined member roles and state support. For example, the WI Council's statutory endowment–which mandates participation by state agencies–affords it the clout to support the state in many of EPA's recommended elements. Councils with less clout often have difficulty building and keeping the momentum necessary to support the EPA elements (many of which are long-term efforts) through to completion.

Impact of Council Activities

In general, it is difficult to quantify benefits associated with Council activities. An emphasis on facilitated information flow or increased awareness of proper monitoring methods does not lend itself to quantitative performance measures. While it is difficult to track the changes associated with Council activities, they have clearly had a positive effect. Increased information flow may facilitate dissemination of core data elements, proper monitoring methods, and compatible storage formats across the many monitoring entities in a state or watershed. In turn, states may realize broader data coverage and increased efficiency in monitoring. With more detailed and more accessible information, state regulators might make increasingly informed decisions about water quality. Such decisions might have effects that can be quantified through adverse human health effects avoided; decreased fish kills; or increased attainment of Clean Water Act standards. In sum, while immediate Council effects are difficult to measure, Council activities may yield significant indirect effects.

Council Successes and Shortcomings

Council Successes

Council benefits stem from their coordination of a significant number of independently funded agencies (VA and CO each counts over 100) working in a complex, seasonal, and technically demanding field. State water quality agencies have estimated annual funding needs of over $130 million[4]; Councils are likely to yield substantial benefits coordinating activities on such a large scale. In defining their primary success, Councils most commonly cite increased communication and collaboration among monitoring entities. Councils identify a facilitated flow of information through meetings, websites, data swaps and monitoring inventories as a secondary–though still substantial–success. Consortiums of water monitoring agencies, usually at the watershed level, have realized similar efficiencies in the past[5].

As we note previously, Council successes do not lend themselves to quantitative measure, and are often realized over the long-term. Given the short tenure of many of the Councils in our study set, more time is necessary for the full suite of potential Council successes to be realized.

Councils often successfully supported EPA's recommended elements without having been structured to address them. Specifically, Councils are making significant progress in helping states to design comprehensive monitoring programs, and in facilitating data comparability by recommending core data elements. Interestingly, the Councils most successful in supporting their respective state(s) in EPA's elements are those that receive the highest level of state support and involvement in the Council. States seem to be realizing returns related to their investment–of time, funding, or staff–in their state or regional Council.

Council Shortcomings

None of the Councils in our study set claims to have had a direct, "on the ground" effect on the water quality monitoring occurring in its area of concern. As we note above, however, Council effects are most often felt indirectly. The Oklahoma Council demonstrates this important point with its building of consensus for the state's new comprehensive monitoring program. While the Council did not design the monitoring program, it helped to garner the support necessary to gain momentum for the program. This is a common (and productive) role for Councils: not as technical developer, but as the institutional mechanism that specializes in getting buy-in and publicity for products developed by others.

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[4] Association of State and Interstate Water Pollution Control Administrators. *Water Quality Ambient Monitoring Program Assessment Project* (Draft Report). 2003.

[5] EPA Office of Water. *Monitoring Consortiums: A Cost-Effective Means to Enhancing Watershed Data Collection and Analysis* (EPA Doc. No. 841-R-97-006). 1997.

Councils have generally realized less success in supporting their respective states in achieving several of EPA's recommended elements: EPA-compatible electronic data storage; core and supplemental water quality indicators; Federal report completion; and infrastructure planning. However, Councils in our study set do not always count these elements among their objectives. This is an important distinction: Council objectives and EPA objectives are rarely in perfect alignment.

To the extent that Councils have fallen short of attaining EPA's objectives (See Table 1), several limitations are at work. Table 2 outlines the limitations identified in discussions with Councils, as well as several strategies employed to overcome them.

Table 2
LIMITATIONS TO SUCCESS AND STRATEGIES TO OVERCOME LIMITATIONS

LIMITATION	STRATEGY
• Lack of dedicated resources (time, funds, staff) • Difficult to spread workload with only a few active members willing to take extra work	• Derive budget estimates, and lobby state to dedicate resources (e.g., VA estimates $50k annually necessary to fully-fund Council at present effort) • Make efficient use of resources (e.g., VA aims to take increasing advantage of data collected at local level)
• Difficult to make significant progress with volunteer membership working above and beyond their existing job description; when Council projects take a backseat, they take longer to complete and it becomes difficult to gain momentum.	• Demonstrate successes–however small–as a means of building momentum (VA, CO) • Elect strong leaders to galvanize effort and build consensus (MD, CO)

• Since Councils primarily "borrow" staff from other agencies, the Councils themselves are sometimes left beholden to agency desires:
  ◦ Challenging to get members to take off their "agency hats"
  ◦ Council members competing for Requests for Proposals
  ◦ Councils hesitant to criticize other agencies
	• MD consolidated its committees to rely less on volunteer effort (i.e., fewer agency volunteers beholden to their agencies).
	• WI gives careful treatment to "hot button" issues, and allows significant recommendations to stem from Conferences or Symposia rather than from the Council itself.
	• OK is drafting a strategy document to get people lined up behind a single set of objectives rather than debating each Council activity piecemeal.

• Both VA and MT cited the logistical concerns of working in a large geographic area (i.e., tough to get folks in the same room at the same time).	• Align Council meetings with meetings of organizations with overlapping membership to allow leveraging of limited travel funds • Hold meetings in varying locations across state to facilitate attendance by all members • Work via email and conference call

The most often-cited barrier is the lack of dedicated resources (cited by all Councils). The Wisconsin Council–which has dedicated staff–cited this as a major contributing factor to its success. Further, the lack of dedicated resources contributes to other barriers. Councils lacking

dedicated resources are hard-pressed to maintain momentum among their largely volunteer membership. Further, staff shared with state agencies may have allegiances to their employing agency–contributing to the noted difficulties with Councils beholden to other entities.

Best Practices

Councils can take several steps to effectively use their budget and infrastructure to assist states in obtaining the data necessary for Agency decisionmaking:

- **Support Communication, Collaboration, and Cooperation:** Councils are generally well-equipped to fulfill their primary role as facilitator among the monitoring entities in their area of concern. While this role may not yield immediate, easily-quantified results, it may set the groundwork for significant long-term success.

- **Develop Responsible Budget Practices:** Successful Councils project future activities and calculate the budget necessary to achieve objectives. In cases where state support is not available, Councils should research alternate funding mechanisms and make efficient use of current resources.

- **Strive to Achieve Current Objectives:** Councils should focus primarily on achieving current objectives before looking to expand their role. Councils ready to expand capacity should consider using EPA's *Elements* paper as a framework for areas in which they could fulfill a valuable role.

LESSONS LEARNED

This evaluation revealed important lessons about the utility of Councils in general, as well as what constitutes a successful Water Quality Monitoring Council:

- **Councils Yield Substantial Benefits:** While difficult to quantify, Council benefits stem from their coordination of a significant number of independently funded agencies (VA and CO each counts over 100) working in a complex, seasonal, and technically demanding field. State water quality agencies have estimated annual funding needs of over $130 million; Councils are likely to yield substantial benefits coordinating activities on such a large scale.

- **Effective Councils Have State Support:** The most effective Councils in our study set have state support in the form of an expectation of performance, funding, staff, management-level endorsement, and/or technical expertise. Similarly, the Councils that receive the highest level of state support and involvement are most successful in supporting their respective state(s) in EPA's elements. States seem to be realizing returns related to their investment–of time, funding, or staff–in their state or regional Council.

- **Councils Have Difficulty Keeping Momentum:** At nearly all Councils, building and keeping momentum is a primary challenge. Councils largely rely upon volunteers working above and beyond their existing job descriptions at state or local agencies. When Council activities receive low priority (as is sometimes the case) in their members' workloads, Council initiatives can lose momentum.

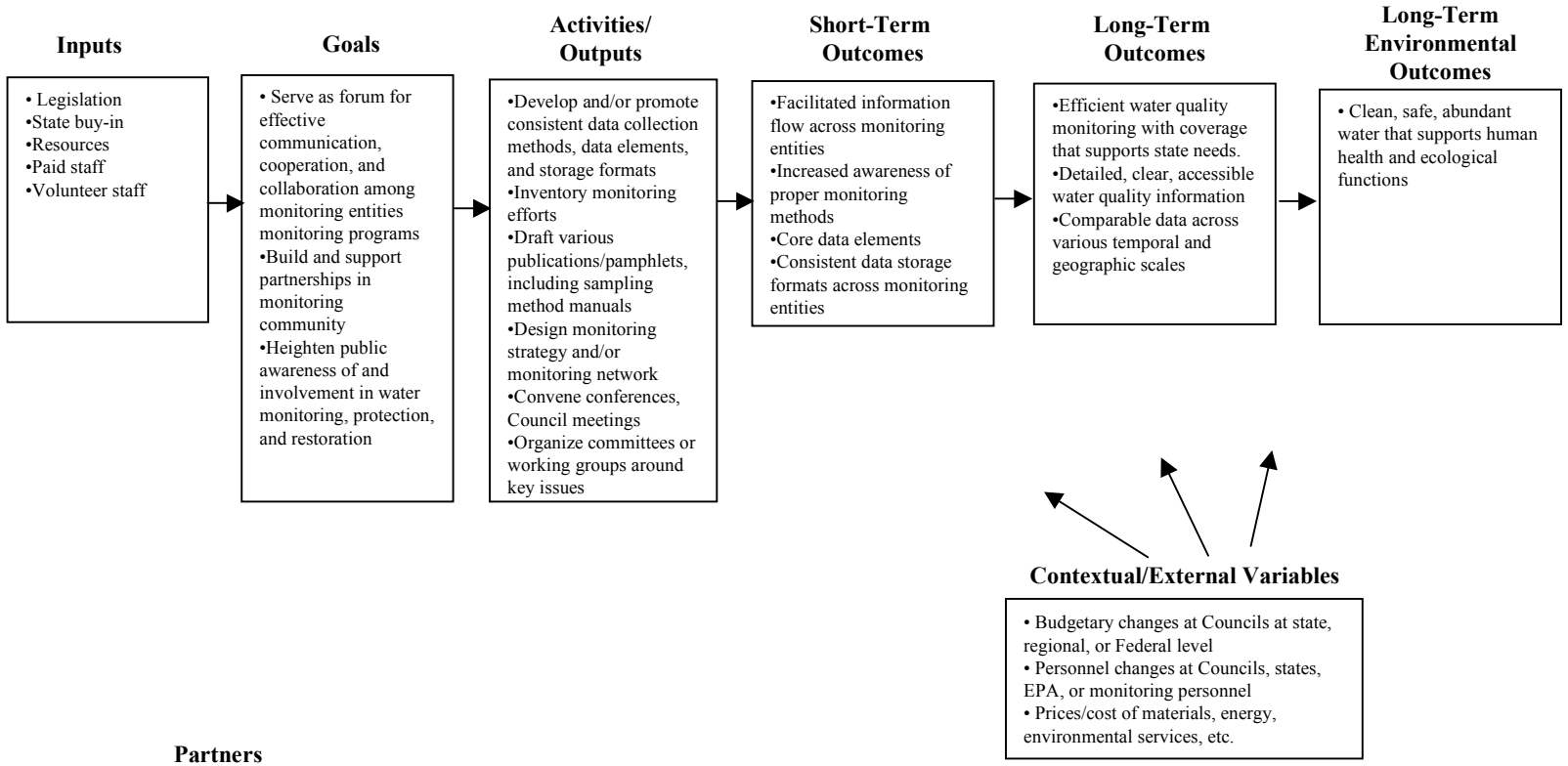
- **Dedicated Staff are Invaluable:** Successful Councils have staff working in an official capacity on the Council's day-to-day activities. Staff can help to maintain momentum by scheduling and arranging meetings; distributing minutes and summaries; maintaining websites; and preparing reports, documents and displays for public meetings.

- **Councils Can Unify Disparate Parties:** In cases where Council members act to protect the interest of their primary agencies, collaborative development of a Council Strategic Plan can bring representatives in line behind a set of common objectives. Councils with buy-in for their primary objectives have greater flexibility to make recommendations in the public interest, regardless of political popularity. Well-organized meetings and post-meeting action items also contribute to greater cohesiveness among Council members.

- **Councils Vary in Design and Objectives:** What works at one Council may not prove effective at all Councils. This may arise out of variation in the key issues facing the Council; the mix of personalities at a Council; the powers granted to the Council at its inception; or the Council's traditional relationship with state agencies in its area of concern. Significant state involvement in the Council exists as an exception to this rule; regardless of design or objectives, Councils with state support have proven effective.

APPENDIX A
LOGIC MODEL FOR
TYPICAL WATER COUNCIL

LOGIC MODEL FOR
TYPICAL WATER QUALITY MANAGEMENT COUNCIL



APPENDIX B
INFORMATION MATRIX

INFORMATION MATRIX

	Maryland	Texas	Oklahoma	Virginia	Colorado	Lake Mich.	Wisconsin GW	Montana
How is the Council organized?								
Political level (e.g., State, regional, watershed)								
Geographic Area								
Jurisdiction(s)								
Other								
Which key State activities does the Council support?								
Designing a comprehensive monitoring program that addresses specific concerns fo the State								
Determining "core indicators" appropriate to support program goals and State information needs								
Defining procedures to ensure scientific validity of monitoring/laboratory activities								
Collaborating with state-wide professional associations								
Managing and reporting data								
Planning for future resource needs								
Auditing regularly to identify areas for improvement								
Other								
What are the objectives of the Council?								
Provide data on all waters in its focus area								
Facilitate resource savings in participating organizations								
Attain demonstrable institutional results (e.g., more efficient monitoring)								
Address regional concerns (e.g., water quality vs. water quantity)								
Support state policymaking needs								
Support Clean Water Act objectives								
Other								
Has the Council achieved its objectives?								
Yes/No								
Explain (i.e., Are there barriers? Which are most important? How can they be overcome?)								

APPENDIX C
SAMPLE DISCUSSION GUIDE

EVALUATING STATE AND REGIONAL WATER MONITORING COUNCILS

SAMPLE DISCUSSION GUIDE

The EPA Office of Water's highest priority is to improve and increase monitoring to support information-based environmental protection. Recognizing that Water Monitoring Councils are often major contributors toward these important ends, EPA initiated a study of Councils across several critical states and watersheds.

State and Regional Water Quality Monitoring Councils provide a forum for coordinating and improving water quality monitoring across their geographic area of interest. Councils often comprise stakeholders in state and local government; citizens groups; and various private organizations. The oldest Councils have been operating for over a decade. EPA now wants to review the past and ongoing activities of Councils to determine the degree to which they are meeting goals and objectives, and to identify possible lessons that can help current Councils and facilitate the establishment of additional Councils. EPA and its contractor, Industrial Economics, Inc., researched publicly available materials to establish baseline information for a set of Councils. To validate and supplement the information gained from this initial data collection, we are conducting a number of more detailed discussion sessions with individuals fulfilling critical roles at the Councils in our study set.

The attached questions will be used to help direct conversations in these discussion sessions. Our conversations will help EPA evaluate the value of Councils at the State and regional level; the extent to which they have been successful at achieving objectives thus far; the means by which they support states; and the potential for them to assume an expanded role in optimizing water quality monitoring. Please review the attached questions; this will help to streamline and enhance our conversation. We have allotted one hour for each discussion.

Following these discussion sessions, EPA will develop a draft report centered on our evaluation objectives, and drawing upon our baseline research and information gathered during our in-depth discussions. After the draft report is complete we will be calling upon all discussion session participants to provide comments and suggestions to improve the evaluation report's overall clarity, accuracy, quality, and usefulness. In addition, we hope to convene a conference call involving all participants to describe our research findings and give all participants an additional opportunity to comment on the evaluation report. If you have any questions about the statements and questions below, do not hesitate to contact Colin Macdonald of IEc (617/354-0074; cmacdonald@indecon.com) or Charles Spooner (202/566-1174; spooner.charles@epa.gov). Thanks in advance for you interest and cooperation.

A. COUNCIL BACKGROUND

1. We understand that your Council has been in operation since 1999. Is this accurate?

2. Council Organization

   2a. Your membership includes [*Sample membership from Council materials*]. Has this mix changed over time?

   2b. Who is on your Council at present (i.e., 2003 membership)?

   2c. How do you decide upon specific member?

   2d. Are there additional parties that you feel should participate? If so, which parties?

3. To what degree do you collaborate with statewide professional associations?

B. COUNCIL OBJECTIVES AND SUCCESSES

4. Questions Related to Potential Objectives

   4a. From our literature review, it appears that your Council has the following objectives:

      [*Sample objectives from Council materials*]

      Are these correct? Are some objectives more important than others?

   4b. Your website notes that your Council undertakes the following activities:

      [*Sample activities from Council materials*]

      To what extent did you accomplish these? Are there other Council activities not listed in available program materials? (If so, please describe)

   4c. What effect have each of these actions/activities had? To what extent has each enabled you to meet your objectives?

   4d. What are the most important barriers to achieving each objective?

   4e. How can Councils most effectively overcome these barriers?

   4f. Are Councils playing an appropriate role in water quality monitoring? From your perspective, what should Councils do to best contribute to improving water quality?

5. Questions Related to Council Success

5a. Overall, how would you rate your Council's success since its inception? (Why?)

5b. Please describe some of your Council's successes.

5c. To what do you attribute these successes?

5d. Are these directly related to your Council's objectives?

5e. Are there any changes in monitoring that are directly or indirectly attributable to your Council's activities?

C. STATE ACTIVITIES SUPPORTED BY THE COUNCIL

EPA's Office of Water produced a draft document entitled *Elements of a State Water Monitoring and Assessment Program* (March 2003). In *Elements*, EPA discusses the components essential to any state water monitoring program. While these are not specific criteria for Councils to meet, EPA is interested in identifying how important the elements are to the operation of the your Council. Questions 6 through 13 address your familiarity with the document and how your Council's activities relate to specific elements included in the document.

6. Familiarity with Elements

6a. Are you familiar with this document and the elements it recommends?

6b. Are you aware that it was recently finalized?

7. To what extent does your Council help to design a comprehensive monitoring program that addresses the specific concerns of the State?

8. "Core indicators" may support a wide range of activities, including assessing attainment of applicable water quality standards; establishing baselines or trends; and piloting innovative monitoring methods. How involved is the Council in determining "core indicators" for state- or region-wide monitoring?

9. Please describe in more detail how the Council defines procedures to ensure the scientific validity of monitoring and laboratory activities?

10. Does the Council help the State(s) store/manage data in an electronic system (e.g., EPA's STORET)?

11. Federal statutes require states to submit several periodic reports on water quality. The Clean WaterAct mandates a biennial water quality inventory report (and annual updates thereto) as part of Section 305(b); Section 303(d) requires an annual list of impaired waters for each state. Section 406 of the Beaches Act also requires submission of water quality

information. To what extent do Council activities support the State(s) in timely and accurate completion of reports?

12. Does the Council have a mechanism in place to forecast future resource needs? (Please describe)

13. Does the Council perform internal audits to identify areas for improvement?

14. We learned from our literature review the roles of your Committees. To what extent do individual Committees collaborate?

15. Are there other state activities, not captured here, that your Council supports? (Please describe)

16. Final Question

16a. Looking back, what have you learned that you would have liked to know at the outset?