Environmental Governance in Watersheds:

Collaboration, Public Value, and Accountability

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Abstract This paper argues that watershed management should be viewed as attempt at intergovernmental management. By definition, every watershed is "managed" by a wide range of governmental and nongovernmental actors, whose decisions influence the health and integrity of ecological systems. The challenge for a watershed governance program is to get this portfolio of actors and programs to work together more effectively. Frequently, this involves collaboration. The objective of this paper is to examine the role of collaboration in six watershed governance programs for the Delaware Inland Bays (DE), Lake Tahoe (CA, NV), Narragansett Bay (RI, MA), Salt Ponds (RI), Tampa Bay (FL), and, Tillamook Bay (OR). The paper then explores the answers to three research questions. The first question examines the different forms of collaboration that occur at the operational (e.g., restoration projects), collective-choice (e.g., shared goals or policies), and constitutional (e.g., development of a new collaborative organization) level. The second question looks at the public value that results from these collaborative activities. It also explores some of the problems and costs that can result from these activities. This will help to identify some of the situations when collaboration can be used effectively. The final question examines the mechanisms that were used to improve the accountability of these collaborative efforts. The hope is that an improved understanding of the collaborative process will allow practitioners to better exploit the collaborative capacity of our present system of watershed governance.

Introduction

The ecosystem-based approach to natural resource management, while relatively new and still evolving, has received growing support from practitioners (Ecological Society of America 1995), government officials (CRS 1994; GAO 1994; and, Executive Office of the President 1993), and researchers (e.g., Imperial 1999b; Haeuber 1996; and, Cortner and Moote 1994). The shift away from managing individual resources to the broader perspective of ecosystems or watersheds and the use of collaborative decision making has also taken root in government programs. Most environmental or land use planning initiatives in the U.S. now utilize some form of collaborative decision making (Selin and Chavez 1995).[1] The last decade has also witnessed an expansion in the number of collaborative watershed-based governance efforts across the United States.[2]

In part, this trend is due to the failure of existing federal, state, regional, and local programs to adequately address some environmental problems such as nonpoint source pollution and habitat protection. It is also due to the fact that there are often overlapping government responsibilities, which can lead to inconsistent policies. Elmore (1985) observed that there is a tendency for policies and programs to accumulate around problems over time. This is certainly true in the environmental arena. The last 30 years have witnessed the development of a sophisticated framework of programs at the federal, state, regional, and local level. Each program tends to adopt parochial solutions, which rely on the policy instruments over which they have direct control. Unfortunately, there is no guarantee that the interlocking system of parochial solutions will produce desired policy outcomes. A variety of governance problems can

also result: (1) the fragmentation and duplication of responsibility and authority; (2) poor use of existing information and resources; and, (3) the inconsistency of policies across and between levels of government. As a result, some environmental problems are not adequately addressed while other more complicated problems such as nonpoint pollution require numerous agencies to coordinate their efforts (Imperial 1999b, 450).

This paper suggests that watershed management is as much a problem of "governance" involving multiple organizations at different levels of government, as it is a question of science and designing effective policies. The capacity (e.g., knowledge, power, and resources) to solve complex environmental problems is often widely dispersed across a set of actors located at different levels of government. "[I]t is often difficult for any one actor, or group of actors, to manage, or manipulate, the flow of problems and solutions onto the political agenda in the first place. Thus, there are complex multi-actor processes for both the identification, definition and resolution of policy problems, and for the implementation of policy (Bressers, et al. 1995b, 4)." Unfortunately, most research on watershed management programs focuses on technical issues (e.g., modeling an estuarine system, ecosystem stressors, etc.) and the processes used to develop policies or programs rather than on the implementation of these programs. As a result, the administrative and institutional challenges surrounding watershed governance are often ignored or downplayed (Imperial 1999b).

This paper argues that one way to improve watershed governance is through intergovernmental management. By definition, every watershed is "managed" by a wide range of governmental and nongovernmental actors, whose decisions influence the health and integrity of these ecological systems. The challenge for a watershed governance program is to get this portfolio of actors and programs to work together more effectively. Thus, it can be viewed as an attempt to build, manage, and maintain interorganizational networks; in other words, to develop an institutional ecosystem (Imperial 1999b, 452). Viewed from this perspective, the implicit goal of watershed management is to improve resource management by changing decision-making processes and improving communication and coordination between the governmental and nongovernmental organizations (Imperial 1999b, 452). One of the tools that often is used to accomplish these objectives is collaboration among governmental and nongovernmental organizations. However, collaboration should involve more than just improved communication or coordination. Value should be added as a result of collaborative activities.

However, a number of challenges confront practitioners involved in collaborative activities. In many respects, collaboration is a collective-action problem (Olson 1965). There are often incentives for actors not to cooperate, share information, or develop consistent policies. There are a number of reasons why noncooperative behavior might be expected. First, government programs are subject to different statutory and budgetary responsibilities. This creates different constituencies, and can lead to competing programmatic priorities and objectives. Each program will also have different capacities for action such as regulatory authority and technical expertise. Changing responsibilities, priorities, or the capacity for collective action will often require institutional changes, which can create political conflicts. Second, organizations may need to change policies in order to implement a watershed management plan. The policy changes may be inconsistent with the present disposition of the implementors or come about only at great political or economic cost. Accordingly, it is

reasonable to expect some federal, state, and local officials as well as private and nonprofit organizations to resist implementing policy changes that run counter to the organizations' other interests. Finally, sharing information and coordinating programmatic efforts can be time-consuming and requires a significant commitment of organizational resources. If the collective-action problems associated with collaboration are to be overcome, practitioners must pay attention to institutional design and maximize the incentives to cooperate while minimizing those that lead to noncooperative behavior. Unfortunately, researchers have largely ignored these challenges (Imperial 1999b, 452).

Objectives of this Study

While these challenges can be formidable, many watershed management programs have been able to find ways to collaborate that improved the governance of these watersheds. The objective of this paper is to examine the collaborative processes in six watershed governance programs for the Delaware Inland Bays (DE), Lake Tahoe (CA, NV), Narragansett Bay (RI, MA), Salt Ponds (RI), Tampa Bay (FL), and, Tillamook Bay (OR). This research is part of a larger report being prepared for the National Academy of Public Administration *Environmental Governance in Watersheds: The Importance of Collaboration to Institutional Performance*. This report is part of the Academy's *Learning from Innovations in Environmental Protection* project. The six programs are all collaborative approaches to watershed governance that met with varying degrees of success. Our analysis of these programs focuses on three research questions:

- What types of collaboration do watershed governance programs use?
- What value is added as a result of these collaborative activities and what problems were experienced?
- How is accountability maintained within these collaborative efforts?

Data from the six case studies as well as previous research by the authors (e.g., Imperial 1999a, 1999b; 1995, 1993; Imperial and Hennessey 1996; Healey and Hennessey 1994; Hennessey 1994; Imperial, et al. 1993; Imperial, et al. 1992) on other watershed governance programs will be used to help answer these questions.

The paper begins with a short discussion of the literature used to guide our inquiry followed by a discussion of our data collection and analysis procedures. The analysis is divided into three sections. The first examines the different forms of collaboration that occur at the operational (e.g., restoration projects), collective-choice (e.g., shared goals or policies), and constitutional (e.g., development of a new collaborative organization) level. The second looks at the public value that results from these efforts. It also examines some of the problems that can develop as a result of these collaborative efforts. The final section examines the different mechanisms that are used to improve the accountability of these collaborative endeavors. Understanding the answers to these questions will help to identify some of the opportunities for collaboration. It will also help to identify the challenges confronting practitioners looking to use collaboration as a tool for improving the governance of watersheds. The hope is that this will lead to the development of more effective watershed management programs.

The Growing Literature on Watershed Management and Collaboration

Three distinct streams of research provide the general theoretical foundation for guiding our inquiry, identifying potential cause and effect relationships, and answering this paper's research questions. These include: 1) the environmental policy research that examines ecosystem-based and watershed-based management programs; 2) the public administration research on collaboration and intergovernmental management; and, 3) research on institutional analysis, specifically the institutional analysis and development (IAD) framework.

The first line of research is environmental policy research focused on place-based or community-based management. Of particular interest is the growing research on efforts that try to improve the governance of ecosystems and watersheds. The ecosystem-based approach has been applied in a variety of settings to address a wide range of resource management problems.[3] It has been used to manage terrestrial habitat systems (e.g., Kohm and Franklin 1997; Harwell et al. 1996; Roe 1996; Yaffee et al. 1996; Baskerville 1995; Light et al. 1995; Agee and Johnson 1988) such as the Greater Yellowstone Ecosystem (e.g., Burroughs and Clark 1995; Clark and Minta 1994; Lichtman and Clark 1994). Other researchers have focused on the management of fisheries (e.g., Smith et al. 1998) such as those on Georges Bank (e.g., Burroughs and Clark 1995; Backus and Bourne 1987) and other large marine ecosystems (e.g., Alexander 1993; Sherman 1991). There is also a great deal of research examining ecosystem-based management efforts for various estuaries (e.g., Imperial 1999a; Khator 1999; Korfmacher 1998; Imperial and Hennessey 1996; Colt 1994; Imperial et al. 1993; Imperial et al. 1992; Tuohy 1994, 1993) and riverbasins (e.g., Foster 1984) such as the Chesapeake Bay (e.g., Costanza and Greer 1995; Hennessey 1994), the Great Lakes (e.g., Mackenzie 1996; Gurtner-Zimmerman 1996; Francis and Regier 1995; Francis 1993; Milbrath 1998; Caldwell 1988), the Columbia River (e.g., Lee 1995, 1993, 1991; Lee and Lawrence 1986), and Puget Sound (e.g., Healey and Hennessey 1994; Fletcher 1990; Leschine 1990; Bish 1982). There is also a growing literature on integrated environmental management (e.g., Born and Sonzogni 1995; Schramm 1980; Underdal 1980), integrated coastal zone management (e.g., Cicin-Sain and Knecht 1998; and, Cicin-Sain 1993), and adaptive management (e.g., Smith and Steel 1998; McLain and Lee 1996; Gunderson et al. 1995; Lee 1995, 1993, 1991; Lee and Lawrence 1986; Walters 1986; Holling 1995, 1978) that shares similar themes with this ecosystem-based management literature. Moreover, environmental policy research in diverse areas such as collaborative decision making (e.g., Selin and Chavez 1995; Cortner and Moote 1994; Gray 1989), stakeholder involvement and public participation (e.g., Lynn and Busenberg 1995; Landre and Knuth 1993; Imperial 1993; and, Godschalk and Stiftel 1981), and the role of science in the policy process (e.g., Healey and Hennessey 1994; and, Weinberg 1972) also informed this analysis.

While the ecosystem-based approach is still emerging, it certainly appears to have a strong administrative and institutional orientation (Imperial 1999b). Common themes reflected in this research include:

- Approaching problems from an integrated or systems perspective;
- A strong focus on maintaining ecological integrity;
- Having a stronger scientific basis behind government policies;
- Improving the integration of government policies;

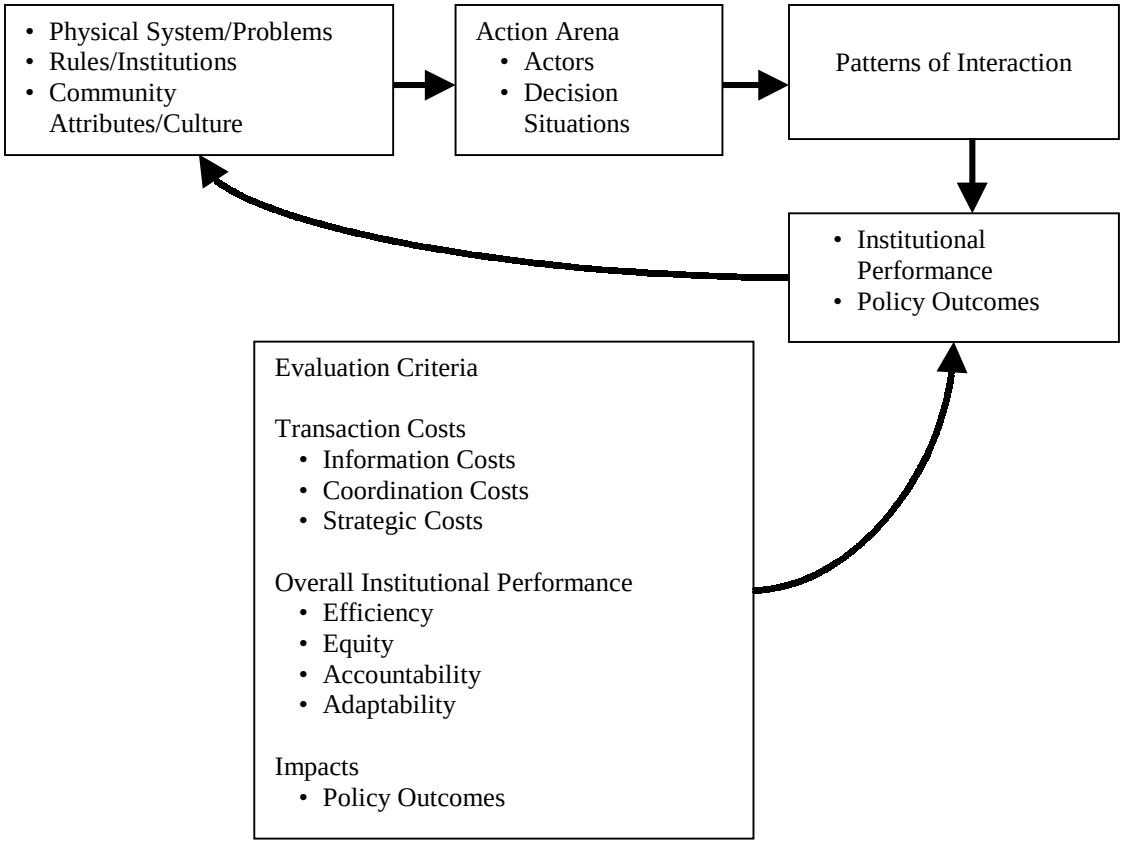
- Enhancing the coordination and cooperation of various governmental and nongovernmental organizations;
- Broad public participation;
- The involvement of key stakeholders in government decision making;
- Adaptive management
- Organizational change; and,
- Improving institutional performance.

Unfortunately, while the concept of ecosystem or watershed management is appealing and may lead to improved resource management, there are a number of institutional and administrative challenges, many of which have largely been ignored in the literature (Imperial 1999b). For example, Grumbine (1994) found that the themes least referred to were organizational change, adaptive management, and the role that values play. Moreover, while knowledge of organizational structure and behavior are essential to developing an effective watershed management program, researchers often ignore these issues.

To better understand these issues, this study builds upon a second stream of research, the growing public administration literature on collaboration (e.g., Bardach 1998, 1996) and intergovernmental management (e.g., Agranoff 1999a, 1999b, 1996, 1989, 1986; Agranoff and McGuire 1999a, 1999b, 1998a, 1998b, 1998c; Radin, et al. 1996; Gage and Mandel 1990).[4] Much of this research focuses on interorganizational networks (e.g., Kickert, et al. 1997; O'Toole 1997, 1996; Alexander 1995; Hall 1995; Alter and Hage 1993; Sharpf 1993; Nohria and Eccles 1992; Knoke 1990; Laumann and Knoke 1987, Milward and Wamsley 1982; Hanf and Scharpf 1978) and refers to the network phenomena in a variety of ways including issue networks (e.g., Heclo 1978), implementation structures (e.g., Hjern and Porter 1981), interorganizational policy systems (e.g., Milward and Wamsley 1982), advocacy coalitions (e.g., Sabatier and Jenkins-Smith 1993), and policy networks (e.g., Rhodes 1997, 1981; Bressers et al. 1995; Marsh and Rhodes 1992; Marin and Mayntz 1991; Rainey and Milward 1983). In addition, this study also builds on related research on policy formation and implementation (e.g., Sabatier and Jenkins-Smith 1993; Goggin, et al. 1990; Elmore 1985; Pressman and Wildavsky 1984; Browne and Wildavsky 1983; Berman 1980, 1978; Majone and Wildavsky 1979; Ingram 1977), interorganizational relations and organizational theory (e.g., Hall 1995), social networks (e.g., Batten, et al. 1995; Waserman and Galaskiewicz 1994; and, Wellman and Berkowitz 1988), and federalism (e.g., Ostrom 1994, 1989; Wright 1988; Elazar 1987).

Unfortunately, while the process of policy development and implementation in networked settings is clearly a practical concern, these processes are not well understood. Nor is the pragmatic concern of managing in this setting (Mandell 1990; Agranoff 1996). There is no consensus on definitions, concepts, or the methodological approach to studying the structure of interorganizational networks. Some approaches examine questions related to networks involved in policy formation and change while others focus on networks involved in policy implementation (Gage1990). It is unclear how networks influence the behavior of actors within a network. It is also unclear how one "manages" or changes an interorganizational network. Moreover, it is unclear how one measures the performance or success of collaborative or networked programs (Imperial 1999a, 1999b).

Figure 1: The Institutional Analysis and Development (IAD) Framework



Source: Modified from Ostrom, Elinor, Roy Gardner, and James Walker. 1994. *Rules, Games, & Common-Pool Resources.* Ann Arbor, MI: The University of Michigan Press.

The final line of research is the institutional analysis literature. In particular, the study draws on the Institutional Analysis and Development (IAD) framework developed by Elinor Ostrom and her colleagues (e.g., Ostrom 1999, 1998, 1990, 1986; Crawford and Ostrom 1995; Ostrom, et al. 1994; Ostrom, et al. 1993; and, Kiser and Ostrom 1982) [Figure 1].[5] The IAD framework is a theoretical framework that is used to help structure the analysis of an institutional arrangement. Institutions are defined as "enduring regularities of human action in situations structured by rules, norms, and shared strategies, as well as by the physical world. The rules, norms, and shared strategies are constituted and reconstituted by human interaction in frequently occurring or repetitive situations (Crawford and Ostrom 1995, 582)." Institutions include families, churches, local governments, government agencies, and most organizations since they are defined by rules, norms, and shared strategies (Ostrom, et al. 1993, 6).[6] Institutions promote socially beneficial outcomes by helping actors resolve "social dilemmas" resulting when individually rational actions aggregate to produce socially irrational outcomes. Therefore, institutional arrangements provide the means to resolve collective action problems (Fermin-Sellers 1995, 203).[7]

Several attributes of the IAD framework also make it particularly useful for analyzing the collaborative arrangements associated with watershed governance programs. First, it recognizes the full range of transaction costs and strategic behaviors associated with implementing policies. Second, it draws attention to the contextual conditions (e.g., physical, biological, social, economic, cultural, etc.) that can influence collaborative programs and affect their performance. Third, it contains no normative bias with respect to the institutional arrangement used to implement these programs. In other words, the IAD framework does not presume that a centralized hierarchical arrangement is more effective than one that is decentralized or polycentric in structure. Fourth, it suggests using a variety of criteria to identify the strengths and weaknesses in the institutional arrangements used to implement policies. Finally, the focus on rules rather than policies broadens the analysis to address a much wider range of organizational relationships. It also draws attention to how social norms and monitoring and enforcement mechanisms can influence institutional performance (Imperial 1999b).

Of related interest is research on assessing implementation "success" and measuring institutional or network performance, whether it is defined in terms of institutional performance (e.g., Ostrom, et al. 1993; Imperial 1999a), compliance (e.g., Mazmanian and Sabatier 1983), feasibility (e.g., Linder and Peters 1987), effectiveness (e.g., Lippincott and Stoker 1992), level of effort (e.g., Thompson and Scicchitano 1985), policy outputs (e.g., Ringquist 1993a) policy outcomes (e.g., Rinquist 1993b), or examines whether plans matter (e.g., Burby, et al 1997; Briassoulis 1989; and, Burby, et al. 1988). Of particular interest, is research on the results of implementation activities (e.g., Imperial 1999a; Desbonnet, et al. 1995; Godschalk 1992; Owens 1992; Powell and Hershman 1991; Born and Miller 1988; Lowry 1985; Mazmanian and Sabatier 1983) and program outputs or outcomes (e.g., Bernd-Cohen, et al. 1995; Center for Urban and Regional Studies 1991; Burroughs and Lee 1988) in coastal and watershed management programs.

Methods

This case study was developed using systematic and generally accepted methods of qualitative research.[8] Qualitative approaches are often recommended when you want to understand how a process occurs or to examine complex relationships between decision-making processes, physical settings, community characteristics, stakeholders' interests, existing institutional arrangements, availability of resources, and the capacities of state, regional, and local actors (e.g., Maxwell 1996; Miles and Huberman 1994; Scheirer 1994; Patton 1990). As a result, qualitative evaluations tend to be descriptive and focus on explaining why a process is, or is not, effective and how different contextual factors influence the success of that process.

This paper uses a qualitative, comparative case study design to answer the study's three research questions. Six comprehensive case studies were developed as part of a larger report to the National Academy of Public Administration entitled *Environmental Governance in Watersheds: The Importance of Collaboration to Institutional Performance*:

- Rhode Island Salt Ponds Special Area Management plan (SAMP) (RI);
- Narragansett Bay Estuary Program (NBEP) (RI, MA);
- Delaware Inland Bays (DIB) Program (DE);

- Tahoe Regional Planning Agency (TRPA) (NV, CA);
- Tampa Bay Estuary Program (TBEP) (FL);
- Tillamook Bay National Estuary Program (TBNEP) (OR) [Table 1];

The selection of these cases was based on several interrelated criteria. First, all of the watersheds had significant water quality problems from nonpoint sources and focused on habitat protection and restoration. Second, the watersheds represented different scales both in terms of watershed area, population, and jurisdictional complexity. Third, there is geographic diversity and variation in the physical systems and the nature of the environmental problems confronting actors. Fourth, the watersheds comprised both rural and urbanized areas. Fifth, the programs used a wide range of institutional arrangements to implement their plans and included both regulatory and nonregulatory programs. Finally, there was a mixture of both successful and unsuccessful programs.

Data for the study was collected from two primary sources. Examining different data sources was important because it allowed the investigators to use a strategy of triangulation when formulating answers to the research questions. First, a wide range of documents and archival records about the program were collected and analyzed. The second source of data was field interviews with more than 200 individuals representing various governmental and nongovernmental actors. A snowball sampling technique was used to identify the individuals. The interviews were confidential and recorded on tape to ensure the accuracy of the data collected. Transcripts of the interviews were then used in our analysis. Follow-up telephone interviews were conducted with individuals who could not be reached in the field. They were also used to clarify responses from earlier interviews. In addition, site visits were planned to allow direct observation of interorganizational events and meetings. Three of our cases, SAMP, NBEP, and DIB, have also allowed repeated site visits over the last few years as part of the authors ongoing research. Finally, one author was involved as a participant-observer having worked for two organizations involved in the SAMP and NBEP case studies.[9]

This data was then used to develop comprehensive case studies for each program. Systematic qualitative techniques such as coding were used to examine various documents, field notes, and interview responses. Codes were derived both inductively and deductively from the data and generated based on a start list derived from previous research (e.g., Miles and Huberman 1994; Strauss and Corbin 1990). As coding continued, patterns emerged and codes were used to dimensionalize concepts (Miles and Huberman 1994). When coding the data, quotes and short vignettes were identified for inclusion in the case studies and the final report to provide some context to the observations. As data analysis continued, tables, figures, matrices, and network displays were used to identify trends and make observations (Miles and Huberman 1994). Some of these displays were modified for inclusion in each case study. A detailed timeline was also prepared to assist in the analysis and to evaluate potential causal linkages (Miles and Huberman 1994). The case study report was then pre-structured in order to ensure comparability with the other cases. When the draft case study was completed, the interview notes and transcripts were reread to ensure the accuracy of its contents. The case study was then sent to several of the principal informants for additional factual verification.

Table 1: Summary of the Six Case Studies

Program Characteristics	DIB	NBEP
Planning Environment		
▪ Water body	Delaware Inland Bays (DE)	Narragansett Bay (RI, MA)
▪ Size of watershed	300 sq. miles	1,600 sq. miles
▪ Population	131,000[a]	2,000,000 in watershed
▪ Focal problem(s)	Nutrient loading	None; Comprehensive in scope with a diverse range of problems
▪ Sources/causes of problem(s)	poultry farms, septic systems, stormwater runoff, and sewage treatment plants	Diverse range of sources and causes of problems
Institutional Environment		
▪ Jurisdictional complexity	Low	High
▪ Previous planning activity	Several collaborative studies beginning with report to the Governor in 1969	27 water quality studies dating back to 1900. No collaborative watershed-based programs
Planning Process		
▪ Duration	1989 - 1995	1985 – 1993
▪ Driving force	State officials	Congress
▪ Program	EPA's National Estuary Program	EPA's National Estuary Program
▪ Hiring entity for staff	DE Dept. of Natural Resources and Environmental Control (DNREC)	New England Interstate Water Pollution Control Authority
▪ Nature of conflict	High. Agricultural interests had problem with draft plan	High. Lot of actors had problems with the plan
▪ Nature of collaboration	Medium. Mostly at the committee level, DNREC's Inland Bays initiative, and NRCS HUA	Low. At the end of the process actors protected their turf
Implementation		
▪ Implementing organization(s)	Center for the Inland Bays (CIB)	RI Department of Environmental Management (RIDEM)
▪ Organizational arrangement	Nonprofit Organization	Line-item program in RIDEM
▪ Hiring entity for staff	CIB	RIDEM
▪ Nature of conflict	Low	Low
▪ Nature of collaboration	Mostly focuses on restoration, public education, and research	Limited collaboration with other actors on selected projects
▪ Clear goals/policies	No	No
▪ Key regulatory agencies	DNREC; Conservation District; local governments	RIDEM; RI Coastal Resources Management Council (CRMC); local governments
▪ Key funder of BMPs, restoration, & infrastructure	NRCS, Conservation District, Sussex County	None
Outcomes		
▪ Environmental improvements	Medium	Low

Note: All judgements of high, medium and low are based on comparisons among the six programs

[a] Measured at the county level

Table 1: Summary of the Six Case Studies (Continued)

Program Characteristics	Salt Ponds SAM Plan	TRPA
Planning Environment		
▪ Water body	Salt Ponds (RI)	Lake Tahoe (CA, NV)
▪ Size of watershed	32 sq. miles	501 sq. miles
▪ Population	32,000	53,000
▪ Focal problem(s)	Nutrient loading	Nutrients and sedimentation
▪ Sources/causes of problem(s)	septic systems, sewage treatment plants, and stormwater runoff	Erosion from development, stormwater runoff, and habitat destruction in the 1960s and 1970s
Institutional Environment		
▪ Jurisdictional complexity	Low	High
▪ Previous planning activity	First watershed plan	Planning efforts date back to 1960s and resulted in federal-state compact in 1969. Planning has continued
Planning Process		
▪ Duration	1979 1984 (original); 1994 - 1999	1980 – 1987 (for main regulations)
▪ Driving force	Citizens, local officials	Citizens, NGOs, state officials
▪ Program	NOAA – CZMA	Federal-State compact
▪ Hiring entity for staff	University of Rhode Island Coastal Resources Center (CRC); CRMC	Tahoe Regional Planning Agency (TRPA)
▪ Nature of conflict	Low	High. Environmental, property rights, and development interests
▪ Nature of collaboration	Medium. Mostly CRMC and local governments. Little collaboration with RIDEM	Low. A consensus building process used to identify tradeoffs that formed the basis of new regulations
Implementation		
▪ Implementing organization(s)	CRMC and local government	TRPA
▪ Organizational arrangement	Partnership based on shared regulations (i.e., zoning)	Regional Planning Council with politically appointed representatives
▪ Hiring entity for staff	CRMC	TRPA
▪ Nature of conflict	Low	Medium. Same as during planning but conflict has declined
▪ Nature of collaboration	Low. Mostly through informal permit review process	MOUs devolve permitting to locals; $900 million Environmental Improvement Program (EIP)
▪ Clear goals/policies	Yes. Zoning standards and regulations	Yes. Environmental thresholds are monitored and evaluated
▪ Key regulatory agencies	CRMC, RIDEM, Local government	TRPA, Lahontan Regional Water Quality Board
▪ Key funder of BMPs, restoration, & infrastructure	None	$900 million EIP funded by federal, state, local governments; USFS, California Tahoe Conservancy
Outcomes		
▪ Environmental improvements	M	M

Note: All judgements of high, medium and low are based on comparisons among the six programs

Table 1: Summary of the Six Case Studies (Continued)

Program Characteristics	TBEP	TBNEP
Planning Environment		
▪ Water body	Tampa Bay (FL)	Tillamook Bay (OR)
▪ Size of watershed	2,300 sq. miles	570 sq. miles
▪ Population	2,000,000	17,000
▪ Focal problem(s)	Nutrient loading leads to loss of seagrass	Closed shellfish beds from bacterial contamination, sedimentation, & salmon listed as endangered species
▪ Sources/causes of problem(s)	Stormwater runoff, sewage treatment plants, phosphate mining, and fertilizer production	Dairy farms, septic systems, stormwater runoff, and forestry activities
Institutional Environment		
▪ Jurisdictional complexity	Medium – High	Low – Medium
▪ Previous planning activity	Activity dates back to the late 1960s. Two watershed plans developed during the 1980s.	Activity dates back to the late 1970s. Several efforts in 1980s. RCWP runs from 1981 – 1996
Planning Process		
▪ Duration	1990 – 1996 for plan and until 1998 for implementing agreements	1993 – 1999
▪ Driving force	TBRPC, ABM, SWFWMD, FDEP	DEQ, ODF, Tillamook County
▪ Program	EPA's National Estuary Program	EPA's National Estuary Program
▪ Hiring entity for staff	TBRPC	Oregon State University
▪ Nature of conflict	Low	Low
▪ Nature of collaboration	High. Lot of activity focused on research, environmental monitoring, and public education.	Low. Limited by staff turnover. Mostly limited to research and public education
Implementation		
▪ Implementing organization(s)	Tampa Bay Estuary Program (TBEP)	Tillamook County Performance Partnership (TCPP)
▪ Organizational arrangement	Independent alliance of government entities pursuant to FL statute	Intergovernmental partnership
▪ Hiring entity for staff	TBEP	Tillamook County
▪ Nature of conflict	Low	Low
▪ Nature of collaboration	Habitat restoration, stormwater, public education, environmental monitoring	Habitat restoration projects and installing BMPs
▪ Clear goals/policies	Yes. Includes binding commitments for nutrient reductions	Yes. CCMP and TCPP have measurable goals and targets
▪ Key regulatory agencies	FDEP, EPC, SWFWMD, and local governments	DEQ, ODA, and local government
▪ Key funder of BMPs, restoration, & infrastructure	SWFWMD and local governments	ODF, NRCS, GWEB, Tillamook County
Outcomes		
▪ Environmental improvements	H	M

Note: All judgements of high, medium and low are based on comparisons among the six programs

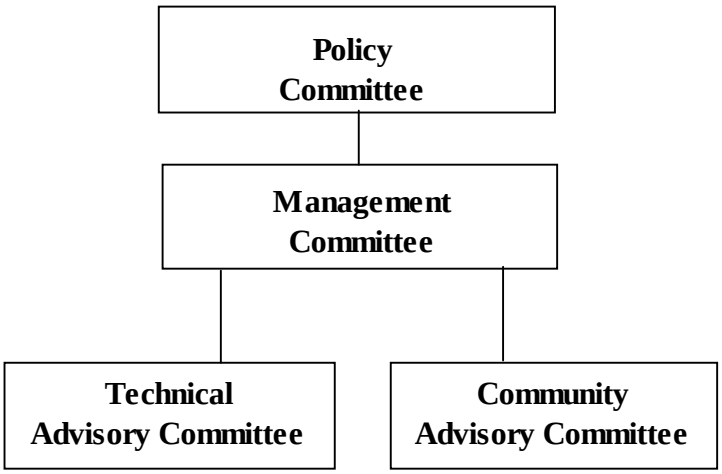
The information from the case studies was then used in a cross-case analysis. One of the main reasons for cross-case analysis was to increase generalizability and determine the extent to which the findings extended beyond our particular cases (Miles and Huberman 1994). The cross-case analysis also deepened our understanding of the collaborative processes examined in this study. The basic approach was one of synthesizing interpretations and looking for themes that cut across the cases (Miles and Huberman 1994). The matrices and network diagrams used to prepare individual case studies were used to develop cross case displays and matrices. The data in these cross-case displays was then clustered and partitioned and subsequent cross case displays and matrices were developed. This allowed us to compare and contrast the collaborative processes in the cases. This analysis also helped to identify patterns, themes, and trends and improved our understanding of the relationships between important variables. This analysis then helped us to answer the questions posed in this study. In addition, our analysis followed the techniques recommended by Rose (1993) to draw lessons that might be transferable to other watershed governance programs.

Regardless of the methods employed, the findings must be valid if they are to be used in developing theory or providing advice to practitioners.[10] To ensure the validity of the study and its conclusions, the study used the strategy of triangulation to improve the overall validity of the results.[11] The study also explored potential rival explanations for the study's conclusions and explored their consistency with the data that was collected and analyzed. In many respects, our approach to data analysis and validation is analogous to doing good detective work in order to try and answer the research questions (Yin 1994; and, Campbell 1975). Arguments and alternative explanations were contrasted against one another to identify logical inconsistencies. The chain of events was examined to help determine causality. Potential threats to the validity of the study's conclusions were then analyzed (Cook and Campbell 1979).

Types of Collaboration

Collaboration is defined as "any joint activity by two or more agencies that is intended to increase public value by their working together rather than separately (Bardach 1998, 8)." Typically, this interactive process involves an autonomous group of actors who use shared rules, norms, or organizational structures to act or make decisions related to an issue or problem (Gray and Wood 1991, 146). The growing collaboration literature reveals a wide range of opportunities that are available to actors. There are also a wide range of factors that influence the willingness or capacity for actors to become engaged in collaborative activities. Studies of interorganizational relationships suggest that the attributes of individual organizations such as their culture (e.g., attitudes towards change) structure (e.g., formalization, centralization, task specialization), resources (e.g., slack resources. staff expertise and training, etc.), and strategy (e.g., innovativeness, boundary spanning, etc.) can influence the potential for interorganizational coordination (Alexander 1995). The same literature suggests that interorganizational coordination will be influenced by the symmetries or asymmetries of interdependence among organizations (Alexander 1995; Hall 1995; and, Alter and Hage 1993). In addition, research on social network analysis argues that the position within the network influences the patterns of interaction (e.g., Wasserman and Faust 1994; Pattison 1993; Scott 1991; and, Freeman, et al. 1989). Research also suggests that organizations may relate in permanent functional networks or in temporary project-based or ad hoc networks (Mandell 1990) and managers may be involved in

Figure 2: TBEP's Management Conference Structure



over-lapping networks that influence one another (e.g., Agranoff and McGuire 1998a, 1998b; and, Bressers, et al. 1995a). Moreover, some collaborative activities are preparatory to others (Bardach 1998).

Collaborative Planning

It was clear from our analysis of the six case studies that these actors were involved in a wide range of collaborative activities. All of the cases used some form of collaborative decision-making process to develop their management plans, policies, or regulations. Collaborative decision making is a mechanism for reconciling the values and preferences of a wide variety of stakeholders. Participants are encouraged to work towards mutually acceptable solutions and share collective responsibility outcomes of the decision making process (Selin and Chavez 1995; Cortner and Moote 1994).[12]

These activities varied across our cases in both form and level of success. The four National Estuary Programs (NEPs) (i.e., DIB, NBEP, TBEP, TBNEP) used a collaborative, consensus-based process with an elaborate committee structure. The committee structure of the Tampa Bay Estuary Program (TBEP) is provided in Figure 2 as an illustration. These processes were used with varying degrees of effectiveness. The Delaware Inland Bays (DIB) and the Narragansett Bay Estuary Program (NBEP) both experienced conflicts at the end of their planning process when they went to approve their management plans. Conversely, the Tillamook Bay National Estuary Program (TBNEP) and TBEP had little conflict surrounding the approval of their plans.[13] The Salt Ponds Special Area Management Plan (SAMP) and the Tahoe Regional Planning Agency (TRPA) were developing regulations. The collaboration involved in these planning processes was geared more towards regulatory negotiation with advisory committees used to develop consensus on key requirements. The SAMP involved a series of negotiations between the Coastal Resources Management Council (CRMC) and local governments that resulted in the development of shared zoning overlays. Locals then amended their zoning ordinances while the CRMC incorporated these policies into its regulations. The policies were then jointly implemented.[14] The TRPA was involved in a consensus building

effort to identify the set of tradeoffs necessary to adopt its new regulatory program. In addition, many of these programs remain engaged in ongoing planning. For example, the TRPA recently completed a $900 million Environmental Improvement Program (EIP) that outlines a set of restoration activities that will be implemented by federal, state, and local agencies. Another example is the DIB's recent efforts to develop a water use plan and in assisting the Delaware Department of Natural Resources and Environmental Control (DNREC) to develop tributary strategies to implement a total maximum daily loading (TMDL) for the watershed.

Operational Level Activities

However, the range of collaborative activities is much more rich and diverse. Table 2 illustrates the general types of collaborative activities we identified in our six case studies. To organize these findings, they have grouped according to the level at which they appear to operate [Table 2]. This categorization is based upon the three levels of action proposed by Kiser and Ostrom (1982).

Organizations functioning at the operational level take direct action or adopt strategies for future action depending on expected contingencies. Basically, actors are free to take action without prior agreement of other actors. Accordingly, most of the direct activities of organizations such as permitting, planning, construction of environmental infrastructure, installation of best management practices (BMPs), public education, water quality monitoring, and issuing grants are operational level activities. These activities create a wide range of potential opportunities for collaboration. Frequently, these activities were guided by the collaborative activities that occurred at the collective choice level.

The analysis reveals a wide range of collaborative activities that occurred at the operational level [Table 2]. Many of these activities are project-based and of limited duration. A common form of activity is collaboration on implementing BMPs or undertaking restoration projects. For example, a habitat restoration project might involve one organization providing the funding for land acquisition, another providing the technical expertise, another doing the engineering design work, another doing the actual construction, and another doing the maintenance and management of the site. If volunteers are used to assist in the construction activities, another organization may help recruit the volunteers. The Delaware Inland Bays (DIB), Tampa Bay Estuary Program (TBEP), and Tillamook Bay National Estuary Program (TBNEP) all use this form of collaboration to varying degrees. This type of activity is also planned to implement the $900 million Environmental Improvement Program (EIP) developed by the Tahoe Regional Planning Agency (TRPA). Another way that programs collaborate is for one actor to hire a staff person to work in another agency. In the TBNEP, the Oregon Department of Forestry (ODF) hired a fish biologist and a wildlife specialist from the Oregon Department of Fish and Wildlife (ODFW) to work entirely on habitat restoration in the Tillamook State Forest. This allowed the ODF to increase its restoration activities and improved communication between the two agencies. In the ODFW, a private timber company pays for a staff member to work in private forests designing and implementing restoration projects. Project-level activities are not limited to the installation of BMPs or habitat restoration. Other programs have used collaboration to develop or distribute educational materials. In the TBEP case, several actors collaborated to produce a boaters guide. The program then distributed more

Table 2: Different Types of Collaborative Activities

Type of Collaboration	DIB	NBEP	SAMP	TBEP	TBNEP	TRPA
Operational Level						
▪ Restoration projects/BMPs	X	X		X	X	X[a]
▪ Actor hiring staff to work in another's office					X	X
▪ Develop/distribute educational materials	X			X		
▪ Training of local officials					X	
▪ Scientific/Technical research/guidance	X	X		X	X	
▪ Actor collecting information for another actor	X		X	X	X	
▪ Participating in other collaborative processes		X		X	X	X
▪ Collaborating on joint grant proposals	X	X		X	X	
▪ One actor issues another's permits			X			X
▪ One actor helps enforce another's regulations			X			X
▪ Regulator and actor collaborate to get net environmental improvements			X	X[a]		X
Collective-Choice Level						
▪ Identify priority sites for restoration/BMPs			X	X		X
▪ Identify priority sites for infrastructure						
▪ Adopt shared goals				X	X	X
▪ Adopt shared policies			X	X		X
▪ Memorandums of Understanding (MOUs)			X		X	X
▪ Data collection/distribution (e.g., monitoring)				X	X[a]	
▪ Report on joint implementation activities	X			X	X[a]	X
▪ Create a forum to discus technical issues	X			X		X
▪ Collaborative permit review process			X			
▪ Frequent meetings to share information and coordinate activities	X			X	X	
Constitutional Level						
▪ Create nonprofit organization	X					
▪ Create intergovernmental organization				X	X	
▪ Create federal-state compact						X
▪ Develop shared regulations (e.g., zoning)			X			X
▪ Incorporating collective choice policies into other constitutional level rules		X	X	X		X

X = undertaken; X[a] = Planned;

than 100,000 copies of the guide though a partnership with county tax collectors, which distribute the materials to boat owners renewing their tags. Many of the cases have examples of collaboration on scientific research or in the development of grant proposals for collaborative projects.

Another common type of collaborative activity is when one actor collects information for another actor. For example, in the DIB, Salt Ponds Special Area Management Plan (SAMP), and the TBNEP, volunteer water quality monitoring programs collect information that is used to varying degrees by decisionmakers in other organizations. In the TBEP case, local governments and regulatory agencies have created a collaborative monitoring program. At the operational level, these programs share data and routinely swap samples to improve their quality assurance-quality control procedures. In the SAMP, the Coastal Resources Management Council (CRMC) and Rhode Island Department of Environmental Management (RIDEM) have collaborated to ensure that the information submitted by permit applicants satisfies both agencies. This better allows the RIDEM's water quality staff to comment on CRMC permits and simplifies the process for permit applicants.

There are other examples of collaboration in regulatory programs as well. The CRMC has worked with local building officials to help them enforce their regulations by forwarding applicants to the agency for permits and reporting violators. The RIDEM has also historically relied on the CRMC to enforce its Section 401 Water Quality Certification because the agency lacked its own enforcement authority. Conversely, the CRMC relies on the RIDEM's onsite sewage disposal system (OSDS) permit to satisfy this part of the agency's technical review. Recently, the RIDEM began deferring its review of freshwater wetlands permits when the applicant was also subject to the CRMC's review of tidal wetlands. In the TRPA case, the Lahontan Regional Water Quality Board (California's water quality agency) and the Nevada Department of Environmental Protection (NDEP) defer their review of many activities to the TRPA. Recently, the TRPA signed MOUs (Collective-choice level) with many of the local governments. As a result, local governments now permit many activities for the TRPA, which in turn monitors their adherence to its rules. Both the TRPA and the CRMC will also frequently meet with developers and discus ways that projects can be modified to better address their regulatory concerns and get greater environmental improvements. The interlocal agreement (constitutional level) signed to implement the TBEP's plan commits the regulatory agencies to working with local officials applying for permits to conduct restoration work or stormwater improvements to streamline their regulatory process and provide more flexibility. It is expected that this will spur new collaborative activity at this level.

Collective-Choice Level Activities

The collective-choice level is the world of collective decisions that determine, enforce, continue, or alter actions. It would also include plans for future action. The key is that there is some ability to enforce these decisions whether it is through a formal or legally binding process or through some sort of social peer pressure mechanism. Thus, these collective choice activities often serve to guide or constrain activities as the operational level. Conversely, they may synthesize and add additional value to activities that occur at the operational level.

The analysis reveals that a wide range of collaborative activities occurred at the collective-choice level [Table 2]. In general, these activities tend to perform a steering function focusing on improving communication between the actors, coordinating their actions, and integrating their policies so that their individual decision-making processes produce results that advance the goals of the group. Typically, this occurs through the development of shared goals

or policies. For example, Table 3 lists the goals and targets of the management plan produced by the TBNEP. The group then developed a new collaborative organization, the Tillamook County Performance Partnership (TCPP) (constitutional level), and its members have committed to work individually and collectively to meet these goals. The TBEP has also developed measurable goals and developed an interlocal agreement (constitutional level) that commits the partners to meet specific nutrient reduction and habitat restoration goals. The SAMP contains density policies that limit development and nutrient loadings in the watershed. The TRPA has adopted thresholds (goals) and development restrictions throughout the watershed. In other cases, the partners have agreed to priority sites for habitat restoration or the installation of BMPs (e.g., TBEP, SAMP, TRPA). In the SAMP, the CRMC and local governments agreed on the areas that should be sewered to remove OSDSs and the areas that should never be sewered or have other major investments in infrastructure to limit development (e.g., undeveloped barrier beaches). Some of the cases have also used Memorandums of Understanding (MOUs) to formalize these policies as well as to guide collaborative efforts at the operational level. The TRPA used MOUs to delegate permitting authority to local governments while the CRMC and RIDEM used an MOU to coordinate their review process for wetlands permits. Members of the TCPP have also signed MOUs that commit partners to the TBNEP goals while Oregon and the ten federal agencies signed an MOU to provide the state with more flexibility to address problems at the watershed level.

The collaborative activities at the collective-choice level are not constrained to the development of shared goals or policies. It can also involve the synthesis of information. For example, the TBEP collects the data produced by all of the environmental monitoring programs administered by the local governments and regulatory agencies, synthesizes the information, puts it in a form understandable to decisionmakers, and reports on progress towards the collective goals. However, this type of activity is not limited to collecting environmental data. The DIB and TBEP report on the implementation activities of each of the partner agencies. The TRPA conducts a threshold evaluation every five years to assess its progress towards environmental thresholds. The framework document that guided the creation of the TCPP also reported on activities of members of the partnership. The EPA also requires its estuary programs to conduct a biennial review. The DIB and TBEP have used this process to report on the activities of the partners and the TBNEP plans to do so when it undergoes its review.[15] These collective reporting processes appear to be important. They help to develop a peer pressure mechanism that creates an incentive for the partners to continue or improve their implementation efforts. It also provides a stimulus for change. For example, after two threshold evaluations, which produced less than satisfactory results, the TRPA worked with the other agencies in the region to develop a $900 million Environmental Improvement Program (EIP) to address the problem of declining lake clarity.

The final group of actions revolve around having regular meetings to improve coordination and communication between agencies and to stimulate, legitimize, and enhance collaborative activity at the operational level. This takes many forms. The DIB and TBEP have science and technical advisory committees (STACs) that developed during the planning process. Both have evolved into organizations that meet regularly. The STACs serve as a forum for improving the communication of technical information among the scientific community and the technical specialists working in governmental and nongovernmental organizations. They also

Table 3: Goals and Targets Contained in the TBNEP's Watershed Management Plan

Goal	Targets for Implementation
Critical Habitat Restore healthy stocks of salmonids, shellfish, and other aquatic species	▪ Enhance 200 miles of forested riparian habitat to meet TBNEP standards by 2010 ▪ Manage 90% of upland riparian zones to meet state forest HCP requirements ▪ Enhance 100 miles of upland instream habitat by 2010 ▪ Enhance 500 miles of continuous riparian habitat in the 0 – 500 ft elevation band to healthy condition by 2010 ▪ Upgrade 50% of all tide gates by 2010 ▪ Conserve and restore 750 acres of tidal wetland by 2010 ▪ No decline in eelgrass beds due to degradation or loss ▪ Achieve an improved climate for fisheries practices and regulatory actions ▪ Achieve wild fish production and spawner escapement goals set by the Oregon Department of Fish and Wildlife for Tillamook Basin rivers
Erosion & Sedimentation Reduce sediments to meet salmonid habitat requirements and achieve water quality standards	▪ Upgrade 1,400 miles of forest roads by 2010 on state and private lands ▪ Decommission 50 miles of forest management road by 2010 ▪ Conduct road maintenance activities on all 2,000 miles of forest management roads annually ▪ Limit the amount of forested lands in clearcuts to no more than $1/8^{th}$ of the total forest lands in the watershed ▪ Conduct risk analysis on 95% of proposed high risk timber harvesting sites on slopes of 80% or greater ▪ Manage 67% of the watershed's privately-held, forested riparian areas under HCP standards ▪ Assess 90% of upland county and state roads, both paved and unpaved, for their sediment contribution ▪ Control erosion from all construction and development in urban areas by 2003
Water Quality 1) Achieve water quality standards for Bacteria in the rivers and the Bay by 2010 2) Achieve in-stream temperatures and suspended sediment concentrations that meet salmonid habitat requirements by 2010	▪ Achieve at least a 25% reduction in bacteria and sediment loads to rivers (apparent decreasing trends by 2005. Statistically significant results by 2010) ▪ Achieve SB 1010 Plan compliance among 100% of livestock operations by 2010 ▪ Achieve routine annual inspections of 100% of the CAFOs by 2004 ▪ Achieve at least a 25% reduction every 4 years in the number of days that the rivers are not in compliance with water quality standards for bacteria ▪ Achieve total compliance with NPDES permits for wastewater treatment facilities by 2002 ▪ Reevaluate commercial shellfish harvest area classifications and closure criteria on an annual basis
Flooding No goal, only targets	▪ Develop a hydrologic model by 2000 ▪ Complete 20 projects within 2 years of developing the hydrologic model that: 1) reduce runoff rate in uplands; 2) alleviate drainage problems in lowlands; 3) increase floodplain storage in lowlands; and 4) improve the capacity to withstand or benefit from flood events. ▪ Raise at least 55 houses to at least 3 ft above the 100-year flood elevation by 2010 ▪ Construct 18 cow pads in flood prone areas to protect livestock by 2000 ▪ Increase the percentage of compensated damages from flood events

serve as a forum for agencies to go to for technical advice. The TRPA has an Advisory Planning Commission that serves a similar function. In the SAMP, the CRMC has developed an informal permit review process. The CRMC, local officials, the developer, and on occasion the RIDEM meet while projects are still in the preliminary design stage to discuss the issues and applicable regulations. This serves to reduce operational level permit review costs and often results in projects that minimize environmental damage and sometimes results in other environmental improvements. It also helps to improve coordination between the CRMC and local governments. The collaborative organizations developed by the DIB, TBEP, and TBNEP also meet on a regular basis and serve as a forum for improving communication, coordinating actions, and finding opportunities for collaboration at the collective-choice or operational levels.

Constitutional Level Activity

The constitutional level basically involves developing the rules that will govern future collective choice level decisions. Constitutional level choices can therefore involve making decisions that constrain the development of future collective-choice rules. Organizing a collective enterprise or collaborative organization is also a constitutional level action because membership in this organization presumably has consequences that constrain the future collective-choice or operational level actions. These constraints can either be formal or legal requirements (e.g., TRPA, TBEP, DIB) or it may be based on social norms (e.g., TBEP, SAMP, TBNEP).

Our analysis reveals that every case involved at least one collaborative activity at the constitutional level [Table 2]. Typically, this involved creating a new collaborative organization where membership in this organization carries certain duties, obligations, or expectations. The collaborative organizations often encourage or guide activities at the collective-choice or operational level. In other instances, the organization became involved in other collaborative efforts (e.g., TBEP, DIZB).

The Delaware Inland Bays (DIB) planning process resulted in the creation of the Center for the Inland Bays (CIB), which is charged with overseeing the plan's implementation. It is a nonprofit organization chartered by the state legislature with a board of directors consisting of various organizations and public representatives. It receives funding from the EPA and is subject to its oversight because it is a member of the National Estuary Program (NEP). Primarily, the organization focuses on education, research, and restoration activities. It also serves as a forum for improving the coordination among various environmental protection programs in the region. The CIB has also helped the DNREC organize three tributary teams to develop implementation strategies for the TMDL developed for the watershed.

The Tampa Bay Estuary Program (TBEP) is also a member of the NEP. It developed an interlocal agreement that not only committed the partners to implement management plan but also created an independent alliance of government agencies pursuant to Chapter 163 of the Florida Statutes. The TBEP is engaged in a much broader range of activity and has more clearly defined goals than the CIB. The TBEP also resulted in a new collaborative program that coordinates the region's environmental monitoring programs. The program was then expanded to a larger area and is called the Florida West Coast Regional Ambient Monitoring Program

(RAMP). It also resulted in the Nitrogen Management Consortium, which is a partnership between local government and industry to achieve the management plan's nitrogen reduction goals. Moreover, some of the shared policies have become incorporated in other constitutional level processes. Some local governments have incorporated these policies into their comprehensive plans and most have incorporated operational level activities into their capital improvement programs (CIPs) such that they will be considered during the budget process.

The Tillamook Bay National Estuary Program (TBNEP) is another member of the NEP. It resulted in the creation of the Tillamook County Performance Partnership (TCPP), which is a collaborative organization consisting of both governmental and nongovernmental partners. It has no clearly defined legal status and is still in the early stages of development. The TBNEP also resulted in Tillamook Coastal Watershed Resource Center (TCWRC), which is a partnership between various actors. This center will help to disseminate information and houses a geographic information system (GIS) and will play an important role in monitoring the implementation of the TBNEP's plan. It also trains government officials and citizens involved in watershed management efforts in Tillamook County and around the state.

The Tahoe Regional Planning Agency (TRPA) used a different constitutional level mechanism. It was created through a federal-state compact and is administered by a governing board and advisory planning commission comprised of representatives of the local governments and regulatory agencies as well as political appointees. It is a true regional planning agency and regulates all development activity in the basin. It also developed what amounts to shared regulations. Its policies serve as the zoning regulations for the county and local governments in the basin. The Lahontan Regional Water Quality Board has also adopted the TRPA's regulations as its own, although it defers to the TRPA's review on many development activities. The TRPA's regulations also serve as a Section 208 plan pursuant to the CWA. Accordingly, the TRPA, local governments, and the state water quality agencies all rely on the same set of regulations and policies and have the ability to monitor and enforce the policies using their own authorities.

The Salt Ponds Special Area Management Plan (SAMP) also serves as a shared set of regulations. While it was developed, agreement was reached with the local governments so that they would simultaneously amend their zoning ordinances to be consistent with the plan's density and zoning requirements. The policies are then jointly implemented with local governments reviewing all development projects and the CRMC reviews large development projects and those adjacent to coastal features (Imperial 1999a). Many of the local governments have also incorporated these policies into their comprehensive plans while the SAMP is an element of the *State Guide Plan*, the repository of state policies that all local and state agency decisions are required to be consistent with. The SAMP is also part of the state's federally approved Rhode Island Coastal Resource Management Program. Thus, the implementation of the SAMP is subject to the National Oceanic an Atmospheric Administration's oversight pursuant to the Coastal Zone Management Act (CZMA). It also means that all federal permits and activities are required to be consistent with the plan due to the CZMA's federal consistency requirements.

The Narragansett Bay Estuary Program (NBEP) is also a member of the National Estuary Program (NEP). However, the NBEP has been engaged in much less collaborative activity at the constitutional level when compared to the other three NEPs (i.e., DIB, TBEP, TBNEP). Its collaborative activity is limited to operational level activities such as collaborative restoration projects, scientific research, and developed grant proposals. However, its management plan was adopted as an element of the *State Guide Plan*, which potentially makes it subject to a range of state requirements and oversight by the Rhode Island Department of Administration's Division of Planning (RIDOP).

Nested Nature of Collaboration

This discussion illustrates the nested nature of collaboration and helps to illustrate how some activities are preparatory to others (Bardach 1998, 20). An example from the TBEP illustrates the point. The actors first engaged in a collaborative planning process that resulted in a watershed management plan and developed shared goals (collective choice level). While these activities were going on, the actors developed a new collaborative program (constitutional level) to coordinate their environmental monitoring programs which resulted in activities at the operational and collective-choice level. The actors also created a collaborative public education program called the Florida Yards and Neighborhoods Program (constitutional level), which has also been expanded to other counties in the state and has spawned activities at the collective-choice and operational levels. Once the management plan was finished, the actors then negotiated a binding interlocal agreement where the actors created an independent alliance of government agencies (Constitutional level). The agreement now requires each partner becomes engaged in activities to implement their shared goals and to submit five-year work plans to be approved by the partners that document these activities (collective-choice). The TBEP staff monitor these actions and an effect peer pressure system has developed to help prevent free-riding and shirking (collective choice level). To implement the action plans, the partners are often engaged in a number of operational level collaborative activities such as habitat restoration and stormwater improvements.

This short and oversimplified example illustrates how the activities are nested within each other and how one collaborative activity can lead to others. A constitutional level collaborative organization such as the TBEP oversees a set of collective-choice level activities that generates other operational level activity. It is also important to note that a different set of actors or different individuals within the same organization may be involved at each level. Politicians and agency heads may be involved at the constitutional level, line managers at the collective-choice level, and line staff at the operational level. The example also illustrates how these collaborative efforts or the products of these activities can diffuse to other regions within the state.[16] The example also illustrates that watershed governance does not necessarily involve the development of one centralized collaborative organization. The TBEP actually resulted in several collaborative organizations. Other cases illustrate a similar phenomenon (e.g., TBNEP). However, it is also important to note that these activities need not occur in a "nested" fashion. The activities that occur at each level might be unconnected. For example, the DIB created the CIB (constitutional level) but has no clear shared goals or policies (collective-choice). However, the actors are engaged in a wide range of collaborative research, education, and restoration

efforts at the operational level. In the NBEP, the program has never been able to achieve much more than operational level collaboration.

Collaborative Capacity

The results also illustrate the collaborative capacity that exists within our federal system, which has developed numerous environmental programs at the federal, state, and local level over the last 30 years. This capacity is even greater in institutionally rich environments with well-developed organizations. One of the reasons that the Tampa Bay Estuary Program (TBEP) appears to have been able to become engaged in a wide range of collaborative activities is that it is located in an institutionally rich environment. The local governments and regulatory agencies have a high capacity for solving problems, slack resources, and stable sources of implementation funding. There are also existing collaborative organizations. Conversely, the Delaware Inland Bays (DIB) lacks much of this institutional infrastructure. There is little overlap among organizations. There is limited local government capacity for addressing environmental problems beyond those related to environmental infrastructure (e.g., sewers and public water). This may help explain the more limited range of collaborative activities because there is less capacity for collaboration.

The concept of "collaborative capacity" appears to be a useful concept for practitioners (Bardach 1998). It helps draw attention to the fact that collaboration often begins with small efforts and expands over time. Often this appears to follow a trial and error process as practitioners discover ways to add public value through collaborative efforts. Collaborative planning also appears to be another mechanism that spurs the development of collaborative activity. Moreover, one collaborative effort such as a new collaborative organization can provide the institutional infrastructure that future collaborative efforts can build upon. The capacity concept also helps draw attention to some of the potential problems that inhibit the utilization this capacity for collaboration. The question for practitioners is whether they are able to exploit the opportunities for collaboration that exist in a manner that adds public value. One way value is added is through improved environmental outcomes. However, as illustrated in the following section, this is only one of many ways that value is added. It is also important to recognize that while collaboration can be used to solve problems and add public value it can also create costs and problems for practitioners.

The Value Added by Collaboration

While there is often much collaborative capacity, it is also important to recognize that collaboration has the potential to generate problems and increase transaction costs. Accordingly, it is important that these activities add public value. Sometimes this means increasing efficiency, effectiveness, or improving the equity of a process. In other instances, it might mean introducing a new program or changing decision-making processes such that the actors can more effectively achieve their respective missions. It might also involve improving organizational capacity or using existing resources more effectively. It could also involve technical specialization (Moore 1996, 10; and, Bardach 1998, 9). Our cases reveal a number of ways that these activities add public value. However, they also illustrate ways that value is lost. It is important to understand

how value can be added as well as the problems that they can create. This should help practitioners to deploy these activities more effectively and achieve the collaborative capacity that is present in existing situations (Bardach 1998).

Value Added

The operational, collective-choice, and constitutional level collaborative activities discussed in the previous section have added value in various ways as illustrated in Table 4. It is important to note that these mechanisms are not necessarily conceptually distinct. In many cases, the collaborative activities are applied in a way that these values are interrelated. For example, improved communication or coordination may help the actors to leverage additional resources or may help them to allocate resources more effectively or efficiency.

In all of our cases, there were examples of where collaborative activities appeared to result in environmental improvements. Even the NBEP, which was engaged in a limited range of collaborative activities, achieved some notable environmental achievements. For example, the NBEP collaborated with governmental and nongovernmental organizations to get a statewide "no-discharge" designation for recreational boaters. At the operational level, environmental improvements resulted from the installation of additional best management practices (BMPs) or restoration projects. They also resulted in the improved design of these projects. At the collective-choice level, environmental improvements tended to occur indirectly through improved decision making while collaboration at the constitutional level often improved the capacity for the actors to address environmental problems. Activities at all three levels also help these actors to leverage resources that can be used to address the problem(s) of concern to the actors. An example of some of the resources leveraged by the Tillamook Bay National Estuary Program (TBNEP) is provided in Table 5.

Much of the value added at the operational level revolves around improved efficiency and effectiveness [Table 4]. Collaboration can help to take advantage of economies of scale or the specialization of some actors. For example, the CRMC relies on the RIDEM for review of OSDSs because the agency has technical specialists and economies of scale that allow it to review these activities more cost-effectively than the CRMC. In terms of habitat restoration, actors will often defer to specialists to complete different aspects of a project. Collaboration can also reduce project costs by making better use of existing agency resources or using volunteers to help with labor intensive aspects of a project. For example, the DIB relied on volunteers to help it plant more than 5,000 trees and on donations of materials and equipment for other improvements at one restoration site. This saved the program money, which could then be invested in other efforts. The volunteerism that results from efforts such as these also help lead to a civil society by getting citizens more involved in their government. It can also lead to improved interpersonal trust between the collaborators. This is important social capital that can be leveraged in future efforts.

At the collective choice level, there is also a wide range of value that is added [Table 4]. The development of shared goals and policies can improve coordination and help the actors to allocate resources more effectively. It can also help them integrate their programs by having individual decision-making processes advance shared goals and policies. The development of

Table 4: Value and Costs of Collaboration

Level of Action	Value Added	Problems/Costs
Operational	▪ Environmental improvements through direct actions (e.g., BMPs, permits, etc.) ▪ Efficiency: economies of scale, use volunteers to reduce costs, get projects done at less cost to tax payers ▪ Do projects that would not get done ▪ Leverage new resources ▪ Apply existing resources more effectively to get "a bigger bang for the buck" ▪ Make better decisions ▪ Collect better information to inform decision making ▪ Develop interpersonal trust (social capital) ▪ Volunteerism (civil society)	▪ Random acts of environmental kindness ▪ Inefficiency: relying on volunteers might increase transaction costs, increase complexity of grants management ▪ Monitoring costs ▪ Create distrust ▪ Citizens have a bad experience in their volunteer efforts ▪ Actors do not follow through on their commitments ▪ Collect information no one uses ▪ Coordination costs
Collective Choice	▪ Environmental improvements through indirect actions (decision making) ▪ Leverage new funding ▪ Allocate resources more effectively ▪ Improved coordination: shared priorities, goals, policies, targets, etc. ▪ Integration of policies: actors follow similar policies ▪ Improved communication: disseminate information, reduce asymmetries ▪ Legitimize collaborative activities in the eyes of decision makers ▪ Leverage other policy networks: help lobby more effectively ▪ Reduce monitoring costs through social/peer pressure mechanisms ▪ Develop interpersonal and institutional trust (social capital) ▪ Use of NGOs can improve civil society ▪ Creates institutional infrastructure ▪ Diffusion of policies/programs	▪ Random acts of environmental kindness ▪ Often hard to tell whether it is "new" funding ▪ Priorities, goals, policies, and targets are not incorporated into ongoing decision-making processes and go unused – lack of integration ▪ Priorities, goals, policies, and targets are inconsistent with those of outside actors that control actor(s) ▪ Outside actors control allocation of funding and limits collective's ability to allocate funding more effectively ▪ Policies meant to apply to noninvolved parties who then ignore them ▪ Group does not meet frequently enough to improve communication or coordination ▪ Increases coordination costs ▪ Increases information costs ▪ Distrust/ Conflict/turf fights ▪ Creates opportunities for strategic behavior ▪ Lack of public accountability
Constitutional	▪ Environmental improvements through improved capacity for problem solving ▪ Leverage resources ▪ Reduce power asymmetries ▪ Creates institutional infrastructure ▪ Create a new policy network ▪ Develop interpersonal/institutional trust ▪ Reduce monitoring costs through social/peer pressure mechanisms ▪ Diffusion to new problem areas	▪ High transaction costs ▪ Lack of funding to develop organizational capacity ▪ Increase institutional complexity ▪ Creates opportunities for strategic behavior ▪ Distrust/Conflict/turf fights ▪ Citizen dissatisfaction: may not address problem in way public hoped

Table 5: TCPP's Strategies, Five-Year Local Actions, and Implementation Activities

Strategy	Local Action	Leveraged Sources
Improve Degraded Roads	1) Complete road surveys and improve 360 miles of road built to salvage Tillamook Burn - Implement OPSW using Road Inventory Protocol on all forest lands ($16,000/year) - Bring roads up to present day standards ($18 million/year)	▪ Since 1994, the ODF has surveyed 1133 miles ($120,000 – 70% federal, 30% state) ▪ Since 1994, the ODF closed 7 miles of road ($200,000) ▪ Since 1994, the ODF improved 469 miles of road ($15,077,000) ▪ Since 1994, the FEMA ($2,623,000 – 75% federal, 25% state)
Restore Riparian Zones	1) ODF, BLM, watershed councils, and private landowners will stabilize 200 miles of streambanks ($ 1 million/yr.) 2) SWCD, TCCA, and others will install 130 miles of streamside fencing, off-channel watering facilities on 75 farms, and replant 130 miles degraded streambanks ($2.5 million)	▪ Since 1996, the US F&W and others converted 7,571 ft of alder to mixed conifer and released 6 miles of conifer from competition ($118,175) (1) ▪ Since 1991, the TCAA and SWCD fenced 53 miles of streambank, built 3 cattle bridges, and 100 alternative watering sites ($214,000) (2)
Enhance In-Stream Conditions	1) ODFW will work with land owners to install in-stream and off channel habitat structures 2) SWCD will install 90 stream barbs treating 18 miles of eroding streambanks ($900,000) 3) ODFW, watershed councils, and DEQ will place hatchery carcasses in streams to increase productivity ($5,000 per year)	▪ Since 1996, the ODF completed 24 in-stream restoration projects ($1,262,561 - $644,220 federal, $563,934 state, $54,407 private) (1) ▪ Since 1996, the SWCD constructed 34 barbs protecting 4,200 ft of streambank ($95,000) (2)
Improve Floodplain Conditions	1) Develop structural flood mitigation requirements 2) Reopen, unclog, and maintain sloughs and where necessary modify river segments ($2,250,000) 3) Projects based on COE Reconnaissance Study and FEMA's Project Impact	▪ COE (Reconnaissance Study) ($100,000) (1 & 2) ▪ FEMA (Project Impact) ($250,000) (3) ▪ Installation of cow pads ▪ Houses raised
Apply State of the Art Technology	GIS Development and Unified Watershed Assessments: 1) Sustain TCWRC ($900,000 over 3 years) 2) TCWRC should develop Tillamook County land use information system and GIS repository ($400,000 per year) 3) TCWRC maintain a real time and interactive tracking system	▪ Tillamook County Economic Development Council ($35,000) (1) ▪ Tillamook Bay Community College (faculty and staff) ($10,000) (1) ▪ TBNEP (hardware) ($42,500) (1) ▪ GWEB ($10,000) (1) ▪ TBNEP (software) ($250,000) (2)

Note: Costs in local actions category are estimates that have been generated. Costs in leveraged sources indicate the commitments and expenditures and their timeframes.

Source: Trenholm, Mark, *Summary of the Tillamook County Performance Partnership* (Eugene, OR: University of Oregon, RARE Program, July 1998).

shared goals and policies can also help the actors to lobby more effectively. For example, several years ago the TRPA developed a shared set of legislative priorities and then each actor proceeded to lobby the federal and state legislatures. This improved the effectiveness of their individual lobbying efforts. Accordingly, the actors are able to leverage new policy networks. Collaborative activities at this level can also serve to legitimize operational level collaboration by recognizing these accomplishments and rewarding actors for their efforts. This can create positive incentives for collaboration that sometimes are missing. The interactions resulting from these efforts can have a wide range of benefits as well. It can improve communication between actors and disseminate information, which helps to reduce information asymmetries. It can also help develop interpersonal or institutional trust. This becomes social capital that can be leveraged in future collaborative activities. These activities can also help to reduce monitoring costs when an effective peer pressure mechanism develops. Peer pressure can also serve as an important incentive that drives additional collaborative activity. The development of these policies also creates new institutional infrastructure upon which other programs can build. For example, other agencies in the TBEP case have linked their programs to its habitat restoration priorities and the Florida Department of Environmental Protection (FDEP) used the nutrient reduction goals as a TMDL for Tampa Bay. These activities could also diffuse to other areas (e.g., RAMP), which could lead to improved watershed governance.

The collaborative activity at the constitutional level can produce public value as well. The creation of new collaborative organizations or the development of shared regulations can reduce asymmetries of power by equalizing relationships and legitimizing the role of the other actors and the constituency groups they represent. It can also create a new policy network as organizations work to influence the collaborative organization's decision-making processes. Conversely, the collaborative organization can become another actor in existing policy networks and work to influence the decisions of other organizations. The collaborative organization can also help to build trust at either the personal or institutional level. The development of peer pressure and social norms and expectations can also serve to create incentives that foster additional collaborative efforts and help increase implementation activities. The collaborative organization can also create institutional infrastructure upon which future efforts can build. The organization can improve the capacity for actors to solve environmental problems. Over time, it might expand its efforts to address new problems. It might also expand its effort outside of the watershed to address other problems.

Potential Problems

While it is clear that collaboration can add public value, it is also important to recognize that it can also create problems and impose transaction costs [Table 4]. Understanding these problems is important because it will help us to better understand why practitioners experience problems in managing collaborative activities. It will also help to explain why practitioners exploit some opportunities for collaboration while ignoring others.

One of the main problems at the project level is the tendency to become engaged in "random acts of environmental kindness". While the collaborative project may have some environmental improvements, the level of effort may be too small to change the underlying problem. This problem appears to result when there is no over riding set of shared policies to

guide efforts or the nature of the funding source does not allow a systematic sustained effort to address a specific problem. In these instances, the real value of the collaborative activity may come through the process itself such as the symbolism associated with a project, the social capital developed, or the opportunities for volunteerism.

Other problems could result when the collaborative effort does not go as planned or the participants have a bad experience. For example, the NBEP's collaborative planning process led to a tremendous amount of conflict. As a result, many state officials have become reluctant to become involved in subsequent collaborative processes. Problems can also result at the project level. For example, agency officials may develop a project intending to rely on volunteers and then had difficulty in recruiting volunteers. These problems are important because they serve as disincentives to future efforts. Moreover, one bad experience appears to have a much stronger influence than one good experience in terms of affecting the willingness to become engaged in future activities.

Another problem is when the shared policies are not incorporated into other decision-making processes or are not in a form that is useful. One of the strengths of the TBEP is that other agencies incorporated their policies into ongoing decision-making processes. One of the weaknesses of the NBEP is that while its plan was incorporated into the *State Guide Plan*, it was in a form that was different from other elements and is not useful to state or local decisionmakers. Another problem surrounding the development of shared policies is when actors who must be involved in implementing policies are not involved in crafting them. In the NBEP, much of the conflict that resulted was because local governments were not involved in the development of these policies but would be affected by their inclusion in the *State Guide Plan*. It is also possible that the major funding agencies for implementation activities will have different policies or may be unwilling to accommodate the collaborative organization's priorities or policies. This is one of the major challenges confronting the TBNEP as it begins implementing its management plan. Often these conflicts and problems are the product of our federal system and the question of whether federal, state, or local priorities should drive decision making.

Transaction Costs

Perhaps the biggest obstacles to collaboration come from the transaction costs associated with collaboration. Three interrelated sets of transaction costs could influence the development and use of collaborative activities: (1) information costs; (2) coordination costs; and, (3) strategic costs. The transaction costs are likely to increase as you increase the number of bargaining partners and the number of routine interactions (Levi 1990, 403). They can also increase when asymmetries of information and power exist. Thus, as jurisdictional complexity increases and the actors' interests become increasingly heterogeneous, transaction costs are likely to increase (Imperial 1999a, 1999b). In some cases, collaboration can reduce transaction costs, particularly information and strategic costs. However, collaboration will almost always increase coordination costs.

Information costs occur as a result of searching for and organizing information. It also includes the cost of errors resulting from an ineffective blend of information. One of the clear

advantages of collaborative activities is that they often improve the information available to decisionmakers. This may occur in a variety of ways. The production of technical manuals and reports for decisionmakers is one mechanism. For example, the TBEP produced a report to guide habitat restoration activities that included new sites for acquisition and restoration. This appears to have improved agency decisions. It can also occur through regular meetings of groups such as the Tillamook County Performance Partnership (TCPP) or the Center for the Inland Bays (CIB) or through the informal permit review process developed between the Rhode Island Coastal Resources Management Council (CRMC) and local governments to implement the Salt Ponds Special Area Management Plan (SAMP). Information costs also reduced through the synthesis and distribution of environmental monitoring data. The TBEP has developed a particularly effective program in this regard. While these activities result in benefits, the failure to synthesize and distribute information can impose costs. In general, our cases do not contain many examples of information costs resulting from collaborative activities above those already present in the system. Perhaps the most frequent problem would be the failure for the collaborative organization to meet frequently enough to reduce existing information costs.

Coordination costs include the costs invested in negotiating, monitoring, and enforcing agreements about the development and implementation of a resource management plan (Ostrom, et al. 1993, 120). In most cases, coordination costs are going to increase when you undertake collaborative activities. Many practitioners implicitly know this and resist participating in activities because of these costs. In some cases, organizations simply lack the slack resources to allow staff to participate in or to contribute to collaborative activities. For example, one reason the Rhode Island Department of Environmental Management (RIDEM) has resisted participating in the informal permit review process developed to implement the SAMP is the lack of staff capacity. In the DIB and TBNEP, the local governments other than the county lacked the capacity to participate in these efforts. In other cases, participants resist participating because they see no corresponding benefits. This was a problem early on in the development of the TBNEP's management plan when the Oregon Department of Environmental Quality (DEQ) became disengaged because they did not see how they could benefit from their participation. In this instance, their lack of participation became a self-fulfilling capacity and the DEQ missed out on some important opportunities. Clearly, an important measure of value for any proposed collaborative activity is whether it is worth the participant's cost of attending meetings. In some cases, the resistance is real and the coordination costs well exceed any value resulting from the effort. In other cases, the actors need to try and persuade reluctant participants or alter the nature of the collaborative relationship so that there is value and incentive for participation are created.

Strategic costs are also important. A well designed collaborative activity or organization often minimizes the potential for strategic behavior by taking steps to minimize these costs. Conversely, the potential for strategic behavior often serves to minimize the opportunities for collaboration. Strategic behavior results when individuals use asymmetric distributions of information, power, or other resources to obtain benefits at the expense of others involved in collaborative decision making (Ostrom, et al. 1993).

Information Asymmetries

Information asymmetries are common in collaborative decision making. Information is often widely dispersed and costly to obtain. Few participants are likely to fully understand how ecological systems function and technical experts are often housed in different agencies. As a result, scientists, agency officials, interest groups, and the public may disagree on the nature of problems and associated management actions. This can cause conflict, particularly when the collaborative organization does not take the time to reduce the information asymmetries among its participants. This is likely to be one of the causes of the conflicts experienced during the approval of the watershed management plans for the Narragansett Bay Estuary Program (NBEP) and the Delaware Inland Bays (DIB).

In many of our cases, it was also true that few participants understood how the entire portfolio of government programs operated. For example, the Tahoe Regional Planning Agency (TRPA) has an exceptionally complicated regulatory program that few government officials fully understand, let alone the general public. The efforts to restore and protect the salmon in Oregon have also resulted in a very complex portfolio of watershed-based programs that interact in complex ways. There are also sophisticated regulatory frameworks governing Rhode Island and Tampa Bay with regulatory authority divided among different agencies. Accordingly, it should not be surprising that one of the main functions that collaborative organizations such as the Center for the Inland Bays (CIB), Tillamook County Performance Partnership (TCPP), and Tampa Bay Estuary Program (TBEP) perform is to create neutral forums for discussing problems, engaging in activities to educate decisionmakers and the general public, and to improve communication to enhance the mutual understanding of how these programs operate.

Power Asymmetries

Asymmetric distributions of power create other opportunities for strategic behavior. The actors frequently derive their power from different sources and the distribution of power may differ from issue to issue. Legitimate power results from the authority established as the result of the position in a formal organizational hierarchy (French and Raven 1959). The director of a state environmental regulatory agency would command more respect than a low-level policy analyst. It is unlikely that the director of an agency will always be willing to share decision making with lower level staff in other agencies. This is one of the reasons that collaborative organizations frequently uses elaborate organizational structures such as the one depicted in Figure 2, which is typical of three of our NEPs (DIB, TBEP, and TBNEP). This allows the organization to have policymakers at one level, managers at another, and technical specialists at an even lower level. In the TRPA, they use a two-tiered structure of politically appointed representatives and an advisory commission comprised of managers. These status differences are important and problems often develop when the structure fails to account for these differences. The NBEP relied on one large decision making committee and these status differences, combined with information asymmetries and a poorly managed decision-making process, caused problems. In addition, these status difference could cause unintended censoring of group discussions. For example, a low-level staff person may not be willing to share opinions that run counter to their bosses if they are involved in a group decision-making process. This could lead to the problem known as groupthink.[17]

Coercive power results when others fear the negative consequences associated with failing to comply with demands (French and Raven 1959). This often involves having one organization utilize some type of legal or formal authority to force the collective group to act in a certain way. This power appears most likely to be utilized when an actor has a better alternative to negotiation than the one provided by the group. One example is the Rhode Island Coastal Resources Management Council's (CRMC's) use its federal consistency authority to force the NBEP to make changes in its management plan. The EPA can use its ability to levy sanctions or withdraw funding through its biennial review process to influence the CIB, NBEP, TBEP, and TBNEP implementation activities. During the development of the TRPA's regulations, several actors used the judicial process to try and better protect their interests. Problems and conflicts within the collaborative that increase transaction costs when one actors decide to use this best alternative to negotiation and in effect try to veto the group's decision. However, these alternatives can also provide incentives to work towards consensus is several actors have these other options available to them.

Reward power works in the opposite direction. Individuals or organizations comply because doing so presumably yields some positive outcome (French and Raven 1959). An example would be if one organization controls the implementation funding, others are likely to cooperate to obtain funding. In the TBEP case, the Southwest Florida Water Management District (SWFWMD) controls a lot of the implementation funding that is available. This creates the potential for it to exert influence over the TBEP's implementation efforts. The same is true for the Oregon Department of Forestry (ODF) in the Tillamook County Performance Partnership (TCPP) that is being used to implement the TBNEP's management plan.

Expert power results from the expertise, knowledge, or special skills that someone brings to a collaborative process (French and Raven 1959). Some individuals may be experts in their fields, which will cause others to be reluctant to question their knowledge. In some of our cases, this role was filled by staff at a local university. In both of the Rhode Island cases (SAMP and NBEP), the Coastal Resources Center (CRC) at the University of Rhode Island (URI) was an important actor and exerted influence because of its technical expertise. Faculty affiliated with the Sea Grant and Cooperative Extension programs at the University of Delaware fulfilled similar roles in the DIB. In other instances, participants deferred to the actors or agencies with technical expertise in a given area. One of the major sources of problems appears to occur when the group refused to recognize this technical expertise. This was one of the causes of conflicts experienced during the development of the NBEP's management plan.

Connection power can result when an individual is tied to important persons inside or outside of the group (French and Raven 1959). Actors within a collaborative may have a close connection or relationships with influential members of Congress or the legislature or other elected officials. This can be both a bane and a curse. It can help the group because it can leverage these policy networks to lobby more effectively for new legislation or budgetary allocations. For example, in Lake Tahoe many of the actors that were at odds and in a perpetual "state of war" during most of the 1970s and 1980s began to work together and collaborate on ways to restore the lake in the during the 1990s. Each year, the group develops a legislative agenda and the key actors use their existing policy networks to lobby federal and state

legislatures for implementation money. This has proven to be highly effective. The counter example would be the agricultural industry holding the DIB's management plan hostage by going to the governor to force the changes it wanted in the plan.

Finally, individuals may derive their power from their skills of argument and persuasion and the ability to convince others to undertake tasks in specified ways (Majone 1989). In many of our cases we were able to identify one or two individuals who were able to use their skills of argument or persuasion to influence the group. For example, Khator (1999) describes the important role of what she called a "champion" in the development of the interlocal agreement used to implement the management plan for the Tampa Bay Estuary Program (TBEP). Since participation in these collaborative efforts is often voluntary, leadership and the ability of individuals to persuade and the group to overcome institutional inertia and to make necessary commitments appears to be important.

Protecting Turf

The tendency for an organization to protect its "turf" is another type of strategic behavior that can increase transaction costs. Turf refers to the exclusive domain of activities and resources over which an agency has the right to exercise operational or policy responsibility (Bardach 1996). In many respects, "turf" is the actualization of our federal system in which agencies located at different levels of government are issued directives to perform specified functions. In many instances, these programs are designed to protect certain constituency groups or interests. The overlap in functions and conflicts between these organizations is an important part of our federal system (V. Ostrom 1989; Imperial 1999a, 1999b). All else being equal, the individual or organizational preference is likely to be towards maintaining or increasing turf since it secures the agency's strategic position and enhances long-term survival by developing continued support from these constituency groups and the legislators that control the organizations resources (Bardach 1996, 177).

Since collaborative activities often recommend new policies, programs, changes in interorganizational relationships, or distribution of power, it is reasonable to expect conflicts about turf (Imperial 1999b). These conflicts could lead to strategic behavior or they could create disincentives that limit individual or organizational level participation in collaborative efforts. Some of the common threats to an agency's turf include:

- Threats to job security or career enhancement;
- Challenge to professional expertise;
- Loss of policy direction;
- Undermining traditional priorities; and,
- Anxiety over accountability (Bardach 1996, 178 -179).

Staff may view the collaborative activities as a threat to their staffing levels or job security. This appears to be a particular problem when there are few slack resources and upper level management does not recognize or reward collaboration. In these instances, line managers are often reluctant to allocate their staff collaborative efforts when they might not get rewarded or could get penalized if they fail to meet management's expectations in core program areas. This

phenomena was observed in most of the state water quality agencies. Many of these agencies have an organizational culture that in not supportive of collaborative efforts and they often view these activities as threats to their existing resources.

Another threat may be the challenge to individual or agency's expertise. One of the consequences of collaborative activities is that they expand the decision-making domain and validate new opinions. Thus, actors will often have to give up some of their claim to professional expertise and validate the opinions and expertise of other actors. In our Rhode Island cases, this appears to be one of the obstacles to collaboration between the RIDEM and the CRMC. As the CRMC has developed its technical expertise over the last 15 years, the RIDEM has resisted acknowledging this expertise or sharing decision making with the agency.

Another potential threat to an actor's turf is through the loss of policy direction. Many collaborative activities result in the development of shared policies. Clearly, the outcome of these struggles influence turf since actors are expected to change their policies. It is natural for actors to fight over new policies and try to protect their interests. In some cases like the NBEP and TRPA these discussions result in severe conflicts that take a long time to resolve. In other cases like the TBEP and the SAMP, the discussions took time but the conflict was more manageable and involved give and take. While in the TBNEP, the actors were dissatisfied with the present set of policies and looked forward to the opportunity to develop shared goals. The costs of these changes and who should bare these costs is also a potential problem.

Collaboration could also alter traditional agency priorities. In some cases, the new responsibilities are a welcome addition to an agency. The RIDEM welcomed the creation of a new program within the agency and it helped improve their problem solving capacity. In the TBEP, local governments welcomed the changes to their environmental monitoring programs because it improved their effectiveness. However, it also possible that the agency will view the new program as an unwelcome competitor for existing resources. For example, when the NBEP completed its plan, the state was mired in a deep recession and the agencies were experiencing budget cuts. Many agencies were reluctant to commit to new programs or initiatives in this environment of declining budgetary resources since implementation efforts would have to compete with traditional priorities and core programs. It is also possible that these efforts will undermine the traditional priorities or core constituencies of a program.

Another threat to an actor's turf may come from anxiety over accountability. Collaborators may be reluctant to make commitments that allow others to hold them accountable for specified actions. This appears to have been one source of conflict in the NBEP case. Actors were anxious about how the plan's inclusion as an element of the *State Guide Plan* might be used to hold them accountable for implementation at some future date. They may also be concerned about committing to outcomes that they have little control over such as budgetary resources, uncertainty over cause and effect relationships, or the presence of other factors that would influence policy outcomes. One of the common ways that these cases have addressed these concerns is through constructing monitoring systems that are based on peer pressure (e.g., DIB, TBNEP, and TBEP). For example, instead of reporting on what every actor committed to in its five year action plans, the TBEP reported on the group's progress towards their collective

commitments. It reported the information in a manner that allowed for peer pressure monitoring. However, no effort was made to make any actor standout.

While turf is defined here in organizational terms, organizations are some measure of the people who work and operate within them. Thus, individual attitudes and personalities often influence collaborative activities (Bardach 1996, 179). Some individuals may refuse to participate in collaborative activities because they dislike other individual(s) that they have to work with. This is also one of the reasons that trust is such a big factor. Individuals may resist participating in a collaborative activity because of a past history of distrust. Both interpersonal and institutional distrust were important obstacles to collaboration in the SAMP, NBEP, DIB, TRPA, and TBEP case studies. Another problem is that many agencies have staff who do not enjoy working in the type of team-based work environment that is required by collaborative activities while others relish these opportunities to build personal relationships. Our data suggests that it is older staff and individuals working in programs with well defined responsibilities (e.g., command and control regulatory programs) that appear to have a negative view towards team-based work. Finally, some individuals will view collaboration as a threat to their self worth if it changes their organization or its responsibilities. Accordingly, some struggles are a reflection of "personalities and egos" in the sense that participants are often more concerned with the perception of "winning" or "losing" than they actually are about their turf (Bardach 1996, 179). This can often lead to irrational behavior that increases strategic costs.

Other Transaction Costs

Three additional forms of strategic behavior also deserve mention: free riding, shirking, and rent seeking (Ostrom, et al. 1993). Free riding occurs when participants in a decision-making process benefit from the group's efforts without contributing to them while shirking involves avoiding taking the required actions. Some agencies will participate and devote resources to the planning effort while others may free ride on the group's efforts. For example, a member of one of the collaborative organizations benefits from the other's actions even though it may undertake no actions. Fortunately, many of the actors have developed mechanisms to limit free-riding. The SAMP, TRPA, and TBEP rely on formal requirements for action. Others have systems that help actors monitor other actors, which has allowed them to develop effective peer pressure mechanisms. The SAMP monitors local adherence to zoning through its permit review processes. The TRPA monitors local government implementation of its regulations that were delegated through Memorandums of Understanding (MOU). The TBEP requires actors to submit actions plans detailing their activities. The TBEP, TBNEP, and DIB have also developed effective peer pressure mechanisms where the activities of group members are reported to the group, which creates incentives for the actors to avoid shirking or free-riding.

Rent seeking occurs when the results of collaborative action yield unearned benefits to some participants (Ostrom, et al. 1993). There are a number of ways that rent-seeking behavior can occur. Agencies or interest groups might advance policies or recommendations that advance their individual interests. For example, a representative of a large manufacturing firm may support policies that would cause weaker competitors to go out of business. This appears to have been what happened with the electroplaters and marine trades association in Rhode Island. Both were represented by industry leaders who were willing to accept new regulations because it

helped increase their competitive advantage within their respective industries. At the same time, government agencies may advance recommendations for initiatives which they would like to undertake, but only if some other agency provides funding. This form of strategic behavior presents problems because it becomes difficult to discern the true motives and preferences of the individuals engaged in bargaining. Finally, one actor in a collaborative effort may use the groups efforts to its own advantage. For example, the NBEP receives federal funding to implement a state plan with recommendations affecting federal, state, and local agencies. Instead of using the funding to support the work of the collaborative the NBEP has become a line-item program in the RIDEM and uses the funding for its own purposes. In this instance, the RIDEM's rent-seeking behavior limited the ability to improve the capacity for collaboration. Collaboration is now limited to isolated projects.

Other Challenges for Practitioners

Other related problems could also cause strategic behavior. Some participants (e.g., an industry trade group or environmental group) might be afraid of getting co-opted so they are reluctant to actively participate in a collaborative process. Participation may also violate an organization's mission. For example, an environmental organization may view the compromise inherent in collaborative decision making as a watering down of the organization's mission to aggressively fight for stringent environmental controls. In other instances, groups may participate, but not in good faith. They will wait until the end of the process and then use their connection or coercive power to exact the changes they want or "water down the plan. This occurred in both the NBEP and the DIB.

A previous history of conflict between potential collaborators can also cause problems and lead to strategic behavior. The collaborative process could become, intentionally or otherwise, a forum for discussing these conflicts. This happened during the NBEP when the program's director decided to use the planning process to resolve disputes between the Rhode Island Department of Environmental Management (RIDEM) and the CRMC. However, this only served to further increase the level of conflict in the process when the staff began to take sides in the disputes. These problems can be formidable obstacles to collaboration. Moreover, these obstacles may be difficult to overcome when: 1) conflict is the result of basic ideological differences; 2) one or more stakeholders has the authority to take unilateral action; 3) constitutional issues or precedents are sought; 4) past decision-making efforts were unsuccessful; and, 5) issues are threatening because of past conflict (Gray 1989; and, Selin and Chavez 1995).

However, a previous history of conflict does not create an insurmountable barrier to collaboration. The actors in Lake Tahoe have a history replete with conflict and turf fights but they were able to overcome these differences. The actors in the TBEP have developed an effective collaborative arrangement to deal with nutrient loading problems but the same group of actors is still embroiled in other conflicts surrounding water supply issues. The key to overcoming these problems appears to be for the collaborative effort to find a focal issue of interest to all actors that is not subject to conflict and be willing to agree to disagree on these issues. Moreover, the actors must be willing to respect the other organizations' authority and right to disagree on these issues.

Clearly, the challenge for practitioners is to determine when collaboration is useful and when it has the potential to add value. It is not a panacea for solving organizational problems or addressing problems related to communication, coordination, or integration. The key for practitioners appears to be to undertake collaborative activities that provide public value while minimizing the problems and transaction costs resulting from these activities. When successfully undertaken, the value of collaboration can well exceed any increase in transaction costs. Since collaborative activities are almost always likely to increase coordination costs, the key appears to be minimizing information and strategic costs while keeping coordination costs as low as possible.

Accountability and Collaboration

Accountability is an important principle of public administration. Accountability "involves the means by which public agencies and their workers manage the diverse expectations generated within and outside the organization (Romzek and Dubnick 1994, 160)." A central challenge for practitioners who are involved in crafting collaborative arrangements to implement watershed governance is to develop effective accountability mechanisms.[18] There are a number of ways that collaborative efforts can be held accountable. At a fundamental level, this involves determining whether the collaborative activities have fulfilled their mission or objective. In other words, were their plans and policies implemented or has the activity achieved the desired policy outcome. However, there are a number of challenges associated with evaluating the outcomes or performance of collaborative organizations (Imperial 1999a). Accordingly, administrative accountability mechanisms often play an important role. It is also interesting to note that the more effective watershed governance programs, defined here in terms of accomplishing the program's goals or objectives, tended to be those that used a greater range of administrative accountability mechanisms. Conversely, the failure to employ an accountability mechanism effectively often led to problems that were observed in these programs. Our data suggest that the failure to use some accountability mechanisms can increase coordination costs or allow actors to become engaged in strategic behavior. They can also help to add some of the different types of public value that were discussed in the previous section.

A wide range of collaborative activities were used in our cases [Table 6]. The activities used in our six case studies are summarized in Table 6. There are a number of what are termed cross-cutting mechanisms that were used to varying degrees by these programs. The Tampa Bay Estuary Program (TBEP), Tahoe Regional Planning Agency (TRPA), and Tillamook Bay National Estuary Program (TBNEP) all have clear and measurable goals or policies. The TRPA and the Salt Ponds Special Area Management Plan (SAMP) also contain regulations that are implemented in a manner which lets the public or interest groups monitor their adherence to rules. All of the programs are subject to various sunshine requirements such as open meetings. However, some programs including the Delaware Inland Bays (DIB), TBEP, TBNEP, and TRPA specifically set aside time for public comment at their meetings. The TBEP built sunset provisions into its interlocal agreement to force the actors to revisit the usefulness of the collaborative organizations and to create an incentive for revisiting its goals and the effectiveness

Table 6: Effective Use of Accountability Mechanisms in the Six Case Studies

Accountability Mechanisms	DIB	NBEP	SAMP	TBEP	TBNEP	TRPA
Bureaucratic Accountability						
▪ Staff works for collaborative organization	X			X	X	X
▪ Staff accountable to agency director	X	X	X	X	X	X
Legal Accountability						
▪ Approval of annual work plan/budget	X	X		X	X	
▪ EPA's Biennial review process	X	X		X	X	
▪ NOAA's Section 312 Evaluations			X			
▪ Statute/Regulations subject to judicial challenge			X			X
▪ NEPA Environmental Impact Statements (EIS)			X			X
▪ CZMA's federal consistency provisions		X	X			
▪ Controls placed by other statutes	X		X	X	X	X
Professional Accountability						
▪ Policy committee defers to management comm.				X	X[e]	X
▪ Management Committee defers to STAC	X			X		
Political Accountability						
▪ Citizens advisory committee	X			X	X	
▪ Public hearing on budget				X		X
▪ Sunshine requirements	X	X	X	X	X	X
▪ Public notice/comment	X		X	X	X	X
▪ Reporting/monitoring requirements	X			X	X[a]	X
▪ Distribution/posting of minutes	X[b]			X	X	
Cross-Cutting Mechanisms						
▪ Sunset provisions				X		
▪ Peer pressure/social norms or expectations	X			X	X	
▪ Each actor reports on its activities	X			X	X	
▪ Measurable goals or policies			X	X	X	X
▪ Binding regulations/requirements			X	X		X
▪ Permit review process is participatory/open			X			X
▪ Monitoring environmental outcomes in a manner that monitors progress toward goals				X		X
▪ Incorporation of policies into other documents subject to other accountability mechanisms		X	X	X	X[d]	X

X = undertaken; X[a] = Planned; X[b] = sporadic; X[d] = only some actors; X[e] = only during the planning process

of the program. Both the TBEP and the TRPA also have provisions that require them to monitor and report on environmental conditions and their progress towards goals. In addition to improving accountability, this activity also serves as an incentive for both programs to periodically assess their programs. Some programs such as the DIB, TBEP, and TBNEP report on the actors taken by different actors [Table 5]. This helps create a peer pressure mechanism and social norms and expectations for a specified level of implementation activity. Finally, the Narragansett Bay Estuary Program, SAMP, TBEP, TBNEP, and TRPA all have parts of their programs included in other policy documents or programs, which makes them subject to review by other agencies outside of the watershed.

These programs also rely on four other categories of accountability mechanisms that can be classified according to the nature of the relationship. Bureaucratic accountability mechanisms are based on superior-subordinate relationships where expectations for the program are controlled by those at the top of the bureaucratic hierarchy (Romzek and Dubnick 1994, 161). In all of our cases, staff are accountable to a program director that authorizes these collaborative activities. However, in the DIB, TBEP, TBNEP, and the TRPA the director and staff are also accountable to a collaborative organization. This adds capacity for collective action and reduces the opportunities for rent-seeking that might occur if staff worked for one actor. This is what happened in the NBEP case. Moreover, it means that the staff must remain neutral and can not take sides in disputes among the partners of a collaborative. The staff can then help to broker agreements and resolve disputes, which helps in building and maintaining partnerships. This is a very different situation than when the staff advocated particular positions and took sides in disputes among partners in the NBEP case. This type of activity exacerbated the existing level of conflict and reduced opportunities for collaboration.

Legal accountability mechanisms are primarily based on lawmaker-law executor or principal-agent relationships. In this case, a controlling actor (e.g., legislature, external agency, judge) outside the organization imposes requirements on the actors within an organization (Romzek and Dubnick 1994, 161). These relationships are often based on a fiduciary relationship. For example, all four NEPs (e.g., DIB, NBEP, TBEP, TBNEP) have a fiduciary relationship with the EPA. In return for federal funding, the estuary programs must be engaged in certain activities. The EPA can monitor and influence these activities when it reviews and approves the annual work plans submitted pursuant to its grant applications. Each program must go through a biennial review process that allows the EPA to monitor its activities and withdraw funding or request modifications in these programs. The Rhode Island Coastal Resources Management Council (CRMC), which is the lead agency for the implementing the SAMP, is subject to an even more elaborate review process by its federal counterpart NOAA pursuant the CZMA's Section 312 evaluation process. In the TBEP, each partner is required to submit a five-year work plan that contains all of the projects that it will implement to fulfill its obligations pursuant to the interlocal agreement. This work plan must then be approved by the TBEP. The TRPA and the SAMP are both subject to the Environmental Impact Statement (EIS) provisions of the National Environmental Policy Act (NEPA) when they make major changes to their programs. Other statues also place important constraints on the activities of these programs. The TRPA is subject to the provisions of a federal-state compact. The SAMP is subject to provisions contained in the CRMC's enabling statute and the CZMA. The TBNEP and the Tillamook County Performance Partnership (TCPP) are subject to the requirements of the Endangered Species Act and a wide range of other plans and programs at the federal and state level. The TBEP is subject to federal and state stormwater management requirements. The DIB is currently subject to a Total Maximum Daily Loading (TMDL) developed pursuant to the Clean Water Act. All of these processes provide mechanisms to improve the accountability of these collaborative activities.

Professional accountability mechanisms are often relied upon when government agencies address technically difficult or complex problems and is based on a lay person-expert relationship. In these situations, public officials or decisionmakers "defer" to skilled or expert

professional staff to provide advice and appropriate solutions to problems (Romzek and Dubnick 1994, 161). There are two main mechanisms that are used in our cases. Typically, the programs rely on some sort of tiered committee structure such as the one depicted in Figure 2. In the TBEP, TBNEP, and TRPA cases, a committee of policy makers defers to a committee of managers to make decisions. In the DIB, TBEP, TBNEP cases, a Science and Technical Advisory Committee (STAC) was created that allowed the policy makers and managers to defer to technical experts. One of the important findings from our cases was the importance of managing these relationships. In some instances, the policy level committee did not provide enough oversight (e.g., NBEP and TBNEP) or allowed too much discretion, which led to problems.

Political accountability mechanisms are the result of the pressures placed on public administrators as a result of democratic processes and is based on a constituent-representative relationship. If "deference" characterizes professional accountability, "responsiveness" is the core feature of political accountability (Romzek and Dubnick 1994, 162). The cases utilize a variety of mechanisms to enhance their political accountability. All of the cases are subject to some sort of sunshine requirements and are required to hold public meetings. Others such as the DIB, TBEP, TBNEP, TRPA, and SAMP have public notice and comment provisions for elements of their programs. The DIB, TBNEP, and TBEP have established citizens advisory committees (CACs) to enhance their political accountability. Some programs such as the DIB post their minutes on the internet while the TBEP and TBNEP distribute the minutes to those who request them. The DIB, TRPA and the TBEP report on their progress to the public and the TBNEP plans to become engaged in similar activities.

The central question surrounding this accountability mechanism becomes who does the public administrator represent. This is often a tricky question because it could include the general public, elected officials, agency heads, agency clients, special interest groups, or future generations of citizens. Regardless of the constituency, the administrator is expected to be responsive to their priorities and needs (Romzek and Dubnick 1994, 162). The presence of conflicting constituency interests appears to be the source of many of the conflicts that surrounded some our collaborative organizations. Historically, this has been an obstacle to collaboration in the TRPA as development and environmental interests were at "war" with one another. In recent years, these groups have found opportunities to work together. The conflicts between the CRMC and the Rhode Island Department of Environmental Management (RIDEM) that served as obstacles to collaboration in the NBEP and SAMP are, in part, rooted in the fact that the two agencies were created to protect different constituency groups. The expectations of conflicting constituency groups can also be the source of some public dissatisfaction with collaborative organizations. The Center for the Inland Bays (CIB) and the TBEP both serve as neutral forums that resist taking stands on controversial issues in order to maintain the viability of the organization. However, in both cases there are many in the public and in environmental organizations that would like to see these organizations taking positions. Moreover, in the CIB case, a number of people and many environmental organizations recognize that while it serves an important function, the organization does not address the main problem in the watershed, the rapid rate of land development.

Another source of variation was the presence of organized interest groups. In some cases there were well-organized interest groups. There were well-organized and politically powerful interest groups representing both the environment and development interests in NBEP, SAMP, TBEP, and the TRPA cases. These groups helped improve political accountability because of their political influence and ability to mobilize interests either for or against the effort forced the collaborative organization to weigh each side's interests during the planning process to find an acceptable balance. In DIB and TBNEP, there was a much more asymmetric relationship with the agricultural interests being well-organized and politically powerful but no comparable environmental groups existed. As a result, near the end of the planning process in the DIB case the agricultural interests were able to "water the plan down" by exerting political pressure because there was no counter-balancing pressure for stringent environmental controls. This did not happen in the TBNEP case because the program did a better job of building consensus. Moreover, the agricultural interests had a history of supporting environmental protection efforts in the watershed.

It is also important to observe that the accountability mechanisms described above differ in terms of their level of formality, directness, durability, and coerciveness (Gormley 1994, 141). Catalytic controls tend to stimulate change but bureaucratic discretion is retained (e.g., public meetings, public comment periods, lay representation on a board) (Gormley 1994, 146). The other end of the continuum would be coercive controls that stimulate change and limit bureaucratic discretion by requiring a specific action, which sometimes causes bureaucratic resistance or circumvention (e.g., judicial review, legislative oversight, directives) (Gormley 1994, 148). Hortatory controls lies somewhere in between these two sets of mechanisms. They often involve more pressure than catalytic controls but provide bureaucrats with more discretion in how they respond (e.g., sunset laws, reorganization, partial preemption, cross-over sanctions). Their efficacy often depends on the credibility of the threat (Gormley 1994, 147).

Summary and Conclusions

Collaboration is one way to improve the governance of watersheds. This need not occur through one centralized collaborative program. Rather, it often involves a collection of collaborative activities at the operational, collective-choice, and constitutional level, which may or may not be related to one another. The activities can improve environmental conditions directly through collaborative efforts that result in restored habitat or the installation of BMPs. It can also occur indirectly through changes in decision making, more effective allocation of existing resources, and improved problem solving capacity. Moreover, these efforts can add public value through improved communication, coordination, and the integration of policies. The paper also illustrates the wide variety of opportunities that exist for collaboration in our federal system that has produced a rich institutional environment with numerous programs operating at the federal, state, and local level. Moreover, nongovernmental organizations often play important roles in these collaborative efforts. The challenge for practitioners is to find opportunities for collaboration that add public value and enhance the operation of existing programs while minimizing the problems and transaction costs that can result from these activities. It is also important that these efforts find mechanisms to enhance their accountability.

However, practitioners are cautioned to use collaboration wisely. Even when opportunities for collaboration exist, it is not always a good idea. Collaboration is merely a tool. When used incorrectly or in inappropriate situations it can cause more problems than it solves. Collaborative decision making can distort information and participants may bargain to the lowest denominator such that no group's interests are threatened by the management plan (e.g., DIB). Collaboration also has the potential to increase transaction costs because it is time consuming, costly, and can stimulate a wide range of strategic behavior with little corresponding public benefit. In fact, this was exactly what happened with the NBEP. Collaboration should be valued only if it produces better organizational performance or lower costs than can be achieved without it (Bardach 1998, 17). We would join with Bardach (1998, 17) in offering the following advice:

> "We should not be impressed by the idea of collaboration per se. That collaboration is nicer sounding than indifference, conflict, or competition is beside the point. So, too, is the fact that collaboration often makes people feel better than conflict or competition. I do not want to oversell the benefits of interagency collaboration. The political struggle to develop collaborative capacity can be time consuming and divisive. But even if no such struggle were to ensue, the benefits of collaboration are necessarily limited."

Even the most imaginative practitioner will be constrained by the realities of a federal system that places government organizations at the federal, state, and local level in conflict with one another. These organizations often represent different constituencies and may have competing or conflicting values and missions. Moreover, there is always the underlying tension of whether federal, state, regional, or local government priorities should govern decision making at the watershed level. Because these fundamental conflicts exist, there will always be limits on how much these actors are, or even should be, willing to sacrifice for the sake of collaboration, no matter how noble the goal. Moreover, no amount of creativity will overcome the shortage of resources (e.g., staff, money, etc.) that serves as obstacles to government action or the reality of how funding is allocated in our federal system (Bardach 1998, 17).

Collaboration's utility as a tool for improving watershed governance is inherently constrained by the ability of practitioners to find opportunities at the operational, collective-choice, or constitutional level action where actors can work together. Moreover, this activity should be limited to those opportunities and actions that can add public value to existing institutions or results in the creation of new institutions that add value. It is important for practitioners to recognize that collaboration should not be viewed as some sort of magical elixir that will cure resource management problems or improve the implementation of watershed management plans. Collaboration can create more problems than it solves. Nevertheless, collaboration remains an instrumental tool for practitioners who seek to improve the governance of a watershed.

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Endnotes

[1] Since 1992, all four federal land management agencies, the National Park Service, the Bureau of Land Management, the Fish and Wildlife Service, and the Forest Service, have announced that they are, or soon will be, implementing ecosystem-based approaches to managing their land resources (Haeuber 1996; GAO 1994). Other federal agencies have also engaged in notable ecosystem-based management activities including: Natural Resource Conservation Service (NRCS); National Oceanic and Atmospheric Administration (NOAA); Department of Defense (DOD); Department of Energy (DOE); Bureau of Indian Affairs (BIA); Bureau of Mines; Bureau of Reclamation; Minerals Management Service (MMS); National Biological Survey; U.S. Geological Survey (USGS); Environmental Protection Agency (EPA); and, the National Aeronautics and Space Administration (NASA) (CRS 1994). In addition, the National Performance Review (Executive Office of the President 1993) recommends that the President issue an executive order establishing ecosystem management policies across the federal government and that they be phased in using demonstration projects.

[2] In recent years, the Environmental Protection Agency (EPA) has embraced the "watershed approach". The strategy is based on the premise that water quality and ecosystem problems (e.g., habitat protection) are best solved at the watershed level. It emphasizes targeting priority problems and promoting a higher level of stakeholder involvement. It also recognizes that complex problems often require complex solutions that require the expertise and authority of multiple agencies at different levels of government. Many EPA and state water quality officials also believe that this integrated approach to environmental management will help them to address to address problems like nonpoint source pollution and habitat protection that many believe are not adequately addressed by current regulatory programs.

[3] For more discussion of some different perspectives on ecosystem-based management see: Imperial 1999b; Slocombe 1998, 1993a, 1993b; Grumbine 1994; Machlis, et al. 1997; Haeuber 1996; and, Gunderson, et al. 1995.

[4] For some competing theories used to explain intergovernmental management see: Agranoff and McGuire 1999b; Foa, et al. 1993; Leibschutz 1991; Williamson 1985; Chubb 1985; Pfeffer and Salancik 1978; Bensen 1975; and, Pressman 1975.

[5] For more discussion of institutional analysis and the IAD framework see: Ostrom 1999, 1998, 1990, 1986; Ostrom, et al. 1994; Ostrom, et al. 1993; V. Ostrom 1994, 1989, 1980; Imperial and Yandle 1998; Koontz 1997; Crawford and Ostrom 1995; Fermin-Sellers 1995; Schlager and Ostrom 1993; Sproule-Jones 1993; Blomquist 1992; and, Kiser and Ostrom 1982. For more specific discussion on how the IAD framework can be used to examine watershed governance programs see: Imperial 1999a, 1999b.

[6] What differentiates institutional analysis from most forms of organizational analysis is the focus on rules. Rules are an implicit or explicit attempt to achieve order and predictability among humans (Ostrom 1986). Rules are prescriptions that forbid, permit, or require some action or outcome and the sanctions authorized if the rules are not allowed (Crawford and Ostrom 1995). Rules can be formal (e.g., laws, policies, regulations, etc.) or informal (e.g., social norms). Since "rules are not self -formulating, self-determining, or self-enforcing" (V. Ostrom 1980, 312), they are formulated in human language and subject to problems of lack of clarity, misunderstanding, and varied interpretations. The stability of rule-ordered interactions therefore depends upon the development of shared understanding of rules (Ostrom, et al. 1994, 40). This often requires building trust by monitoring and enforcing rules. Enforcement can take the form of formal (e.g., cease and desist order, civil penalties, criminal penalties, etc.) or informal (e.g., a verbal comments or facial expressions demonstrating displeasure) sanctions.

[7] Institutional analysis is therefore an attempt to examine a problem that a group of individuals (or organizations) face and how the rules they adopt address a problem(s). The IAD framework does not advocate a particular type of institutional arrangement (e.g., markets or hierarchies) nor does it rely on a single measure of institutional effectiveness. Rather, the IAD framework draws attention to the various factors that influence institutional design and the importance of understanding the problems and the ecological system, the culture of the individuals trying to solve the problem, and the institutional setting that the individuals are embedded within (Ostrom 1990, 55).

[8] Qualitative research employs an intense investigative process that contrasts, compares, replicates, catalogues, and classifies objects and events to provide decisionmakers with the information necessary to improve program performance (Denzin and Lincoln 1998a, 1998b; Maxwell 1996; Miles and Huberman 1994; Caudle 1994; Scheirer 1994; Patton 1990).

[9] Imperial worked as a research assistant with the CRC from 1989 to 1991 and worked as a policy analyst for the CRMC from 1991 - 1994.

[10] A detailed discussion of the procedures used to ensure the validity of our findings is beyond the scope of this paper but it included: All data was collected using the procedures recommend in the literature (e.g., Maxwell 1996; Miles and Huberman 1994; Yin 1994; Patton 1990); All sampling decisions and interview procedures were documented as will techniques used in the data analysis; The investigators worked with the principal contacts at each site to identify appropriate interview respondents; A snowball sampling technique was used to ensure a diverse range of actors were interviewed; Follow-up phone interviews were conducted as necessary until a complete picture of the integrated watershed management program emerged; Detailed field notes will be prepared for each interview; All interviews will be recorded on audiotape to ensure that there is an accurate record; Strict confidentiality will be maintained both during and after the study; Detailed timelines were developed to examine potential cause and effect relationships; To ensure that the record of events was accurate, the principal contacts will be sent a draft of the findings for "factual" verification; and, The interview data and archival records were analyzed using systematic procedures recommended in the literature (e.g., Maxwell 1996; Miles and Huberman 1994; Yin 1994; Patton 1990).

[11] Triangulation is one of the recommended strategies when using quantitative research methods (Yin 1994; Rossi and Freeman 1993; Singleton, et al. 1993). Triangulation involves using independent measures derived from different sources to support, or at least not contradict, a research finding (Miles and Huberman 1994; Yin 1994; and, Singleton, et al. 1993).

[12] A variety of arguments are advanced to support the use of collaborative decision making. It can help ensure that affected stakeholders are part of decision making. It helps ensure diverse perspectives and interests are considered when decisions are made. Moreover, it helps bring in additional knowledge, information, approaches, and alternatives that can lead to a broader perspective on defining problems and formulating policy. The process also has the potential to improve interorganizational relationships and build the trust necessary to overcome collective action problems. Accordingly, collaborative decision making can help improve the implementation of the management plan because its recommendations and policies may already have broad-scale acceptance by key stakeholders.

[13] For more discussion of the TBEP see: Khator 1999.

[14] For more discussion of these efforts see: Imperial 1999a.

[15] The NBEP has not done this. In part this is do to the general lack of collaboration, the RIDEM's reluctance to share credit with other agencies, and the program's unwillingness to collect this information from other agencies involved in the plan's implementation.

[16] For a detailed discussion of the process by which innovations are diffused see: Rogers 1995.

[17] Groupthink results from the tendency for groups to seek and enforce unanimity; dissent is suppressed and conformity is encouraged. Irving Janis (1972) argued that groupthink occurs when the pressures for group conformity or consensus are so extreme that the group acts as if it had only one mind. This can rob the group of its critical and evaluative capacities. See also Janis and Mann 1977.

[18] Sometimes, agency administrators or the legislature does not sanction collaborative activity. For an example of this type of bureaucratic behavior see O'Leary (1994). This is one reason why it is important to develop effective accountability mechanisms.

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