

Assessing the National Estuary Program: 15 Years of Progress or a Lost Opportunity?

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Abstract: This paper reports the results of an evaluation of four estuary programs in the Environmental Protection Agency's (EPA's) National Estuary Program (NEP) conducted for the National Academy of Public Administration: Narragansett Bay; Delaware's Inland Bays; Tampa Bay; and Tillamook Bay. The paper begins with a summary of the planning and implementation efforts in the four watersheds. We then evaluate the effectiveness of these programs and use a comparative, cross-case analysis to make observations about the NEP's strategy, structure, and process and to identify policy questions related to its future. We conclude by revisiting our earlier observations about the NEP's strengths and weaknesses.

Key Words: Ecosystem management, environmental management, environmental planning, implementation, governance, national estuary program, watershed management, water quality management

Introduction

This marks the third in a series of articles examining the Environmental Protection Agency's (EPA's) National Estuary Program (NEP). Our first article traced the history of the NEP's development and identified lessons that could be learned from previous efforts to manage the nation's estuaries (Imperial, et al. 1992). The second examined the NEP's strategy, structure, and process and tentatively identified its strengths and weaknesses given the limited base of implementation experience at the time (Imperial & Hennessey, 1996). This paper builds on this work by summarizing the results of an evaluation of four estuary programs conducted for the National Academy of Public Administration (Academy) as part of its *Learning from Innovations in Environmental Protection Project* (National Academy of Public Administration, 2000; Imperial & Hennessey 2000). Specifically, we evaluated the estuary programs for the Narragansett Bay (RI, MA) (Tier I), the Inland Bays (DE) (Tier II), Tampa Bay (FL) (Tier III), and Tillamook Bay (OR) (Tier IV) watersheds. Case selection was guided by criteria assuring geographic diversity and differences in ecological settings, environmental problems, institutional environments, and situational histories; factors found to influence watershed management programs (Leach & Pelkey, 2001; Born & Genskow, 2001). We also wanted cases that utilized different implementation structures and watersheds that entered the NEP at different times in order to reflect the evolutionary element of the NEP's design.¹

Our study examined whether implementation improved environmental conditions or enhanced watershed governance. Due a variety of methodological problems, which are discussed in our report to the Academy (Imperial & Hennessey 2000), it proved difficult to link specific implementation activities to changes in environmental outcomes. Consequently, we relied on indirect measures by identifying actions where there was a high probability that the activity would improve environmental conditions.

Equally important to us was whether implementation improved watershed governance. Governance refers to the means for achieving direction, control, and coordination of individuals and organizations with varying degrees of autonomy in order to advance joint objectives (Lynn,

Heinrich, & Hill, 2000; Frederickson, 1996). It is more than the configuration of governmental and nongovernmental organizations. Governance includes enabling statutes, organizational and financial resources, programmatic structures, and administrative rules and routines. It also includes the formal and informal rules, social norms, and structures that govern relationships between organizations (Lynn, Heinrich, & Hill, 2000; Milward & Provan, 2000; Frederickson, 1996). Thus, it is inherently political and involves bargaining, negotiation, and compromise.

Our focus on watershed governance is deliberate. Some researchers and practitioners assume that no watershed is “managed” without having some form of centralized watershed program that emphasizes science, planning, and the preparation of detailed management plans using some sort of participatory planning process. Unfortunately, this conceptualization fails to recognize that every watershed is “managed” in some way by a wide range of governmental and nongovernmental organizations, whose decisions and actions influence the health and integrity of ecological systems. Thus, watershed management is as much a challenge of governance as it is a question of science and designing effective policies. As one respondent in Tillamook Bay put it: “So much of what this work comes down to is less technical, less scientific than we make it out to be. It’s more practical, political, and social and it’s local.” While scientific research helps define problems and set priorities, ultimately implementation reflects participants’ values, ideologies, constituencies, turf, power, and ego (Bardach 1998, p. 199).

The paper begins with a brief discussion of the research design. A more detailed discussion of our methods can be found in our Academy report, *Environmental Governance in Watersheds: The Importance of Collaboration to Institutional Performance* (Imperial & Hennessey, 2000). We then evaluate the four estuary programs and use a comparative, cross-case analysis to make observations about the NEP’s strategy, structure, and process and to identify policy questions related to its future. We conclude by revisiting our earlier observations about the NEP’s strengths and weaknesses.

Research Design

All research designs reflect tradeoffs as a result of time and resource constraints. For example, we could have gathered information about all 28 estuary programs using survey techniques (e.g., Fraser, et al., 1999). Potential problems with this approach are that important contextual differences may be lost or ignored. This was an important concern because previous research highlights the importance of contextual conditions to watershed management programs (Leach & Pelkey, 2001; Born & Genskow, 2001; Imperial, 1999a, 1999b; Ostrom, 1999, 1990; Healey & Hennessey, 1994; Hennessey, 1994; Ostrom, Schroeder, & Wynne, 1993). Moreover, it is difficult to get detailed information on one estuary program let alone 28 programs. Conversely, we could have performed an in-depth evaluation of an estuary program (e.g., Korfmacher, 1998; Poole, 1998; Touhy, 1994, 1993; Colt, 1994; Fletcher, 1990; Leschine, 1990). The problem with this approach is that it becomes difficult to generalize the findings beyond the particular program.

Instead, we chose a qualitative, comparative case study research design (e.g., Tuler, et al. 2002). This design is recommended when you want to understand how a process occurs or are interested in the 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 (Yin, 1994; Agranoff & Radin, 1991; Patton, 1990). While it is impossible to fully represent the differences among all 28 estuary programs using this design, careful attention to case selection helped ensure that we had a representative set of cases. Moreover, our previous research on the NEP (e.g., Imperial & Hennessey, 1996; Imperial 1995; Imperial, Hennessey, & Robadue, 1993; Imperial, Robadue, & Hennessey, 1992)² improved our understanding of the context that these programs work within, the institutions involved, and the politics and management issues. This knowledge improved our ability to collect and analyze data. It also helped us understand the selective perceptions and biases of the respondents and improved our judgments about the validity of their responses. It also provided us with a certain measure of theoretical sensitivity by allowing personal knowledge and experience to aid in understanding, interpreting, and explaining events and validating the conclusions drawn (Greene, 1998; Singleton, Straits, & Straits, 1993; Patton, 1990; and, Strauss & Corbin, 1990). This further improved the validity of our findings.

Data Collection

Our study is based on data collected from two primary sources. Field interviews were conducted with over 150 individuals representing various organizations involved in watershed governance. The individuals and organizations were identified using a snowball sampling technique (Leach, 2002; Leach, Pelkey, & Sabatier, 2002).³ All interviews were confidential and recorded on tape to ensure the accuracy of these data. Telephone interviews were conducted with individuals who could not be reached in the field. Additional contacts and follow-up interviews clarified responses and obtained additional information. Some direct observation of interorganizational events and meetings occurred during site visits. The other primary data source was documents and archival records about the programs, planning, and implementation activities in each watershed. Examining different data sources was important because it allowed a strategy of triangulation to be used to improve the validity of our findings (Yin, 1994).

Systematic qualitative techniques such as coding were then used to examine these data. Codes were derived inductively and deductively from these data and generated based on a start list derived from previous research. As coding continued, patterns emerged and codes were used to dimensionalize concepts. When coding data, quotes and short vignettes were identified to provide context to our observations. As our analysis continued, tables, figures, matrices, and network displays were developed to display data, identify trends, and make observations (Miles & Huberman, 1994). Timelines were used to evaluate potential causal linkages. Detailed case studies were then prepared and sent to principal informants and EPA staff for factual verification (Imperial, 2000a, 2000b; Imperial, McGee, & Hennessey, 2000; Imperial & Summers, 2000).

Cross-case analysis then deepened our understanding of implementation processes and determined the extent to which findings extended beyond individual cases. The basic approach was to synthesize interpretations and look for themes that cut across cases (Miles & Huberman, 1994). Potential rival explanations were contrasted to identify logical inconsistencies and determine their consistency with these data (Yin, 1994). The chain of events was examined to help determine causality. Potential threats to the validity were then analyzed.

The National Estuary Program

The National Estuary Program (NEP) was established by the 1987 Water Quality Act (WQA), which reauthorized the 1972 Clean Water Act (CWA). The NEP is a voluntary program with 28 estuary programs in 18 states and the Commonwealth of Puerto Rico. The programs entered in five tiers, allowing newer programs to learn from older ones. The latest group of programs (Tier V) entered the program in 1995 through a Governor's nomination process.

The NEP provides federal funds and technical assistance to develop a comprehensive conservation and management plan (CCMP) that addresses water and sediment quality, living resources, land use and habitat protection, and other appropriate environmental problems. Each estuary program uses a management conference to develop its CCMP. While the committee structure varies, most programs use some combination of policy, management, science and technical (STAC), and citizens advisory committees (CAC). Collectively, the committees must contain appropriate federal, state, and local officials, industry, interest groups, members of the scientific and academic community, and the general public.

Estuary programs are required to use a structured planning process consisting of a series of seven federally mandated steps that focus on:

- Transferring scientific, technical, and management experience and knowledge among participants;
- Enhancing awareness of environmental problems;
- Providing opportunities to discuss solutions to environmental problems;
- Synthesizing input to decision-making processes; and,
- Build partnerships to obtain commitments for CCMP implementation.

Estuary programs are encouraged to take early action and implement action plan demonstration projects (APDPs) that test, on a small scale, the effectiveness of strategies and technologies that become part of the CCMP. The planning process is intended to be iterative in nature with problems continually redefined and the development of a CCMP often begins prior to the completion of the characterization phase.

The product of the planning process is a CCMP. While estuary programs have flexibility in terms of a CCMP's substance, the EPA requires action plans identifying lead agencies, potential sources of implementation funding, and a schedule for completing priority activities. Each CCMP must also include a federal consistency report, plans for its coordinated implementation, and a monitoring plan.

While the NEP relies on a relatively well-funded and structured planning process, there are few requirements pertaining to implementation. Estuary programs have the flexibility to design an organizational structure to implement their CCMP. The EPA provides limited implementation funding, currently around \$300,000 per year. Much of this goes to maintain a small core staff to support, coordinate, and monitor CCMP implementation. Accordingly, estuary programs are expected to leverage funding from other federal, state, and local programs

to implement their CCMPs. The EPA monitors progress by approving annual work plans and each program undergoes a biennial review in order to review its implementation progress.

The following sections summarize the efforts to develop and implement the four CCMPs. Given space constraints, our discussion is limited to key events, problems, and accomplishments. Additional information about each watershed can be found in Appendix A while detailed analyses can be found in our Academy reports (Imperial, 2000a, 2000b; Imperial, McGee, & Hennessey, 2000; Imperial & Summers, 2000).

Narragansett Bay

The Narragansett Bay Project (NBP) began in 1985 as an effort to “study” the bay and its problems and was initially modeled after the Chesapeake Bay Program (CBP). When the NEP was created in 1987, the NBP became one of the six original Tier 1 programs. The experiences of the Tier 1 and 2 programs, both positive and negative, were important in helping shape many of the EPA’s planning requirements and guidance documents.

The NBP’s management conference originally consisted of executive, management, science and technical, policy, and public education committees. Eventually, they were combined into two committees. The executive committee provided the NBP’s general policy direction and included the EPA, Rhode Island Department of Environmental Management (RIDEM), and the Natural Resource Conservation Service (NRCS). The state’s Coastal Resources Management Council (CRMC) and Division of Planning (RIDOP) were added in 1990 when it became evident that their lack of inclusion might create problems during the CCMP’s approval process. The 45-member management committee included industry, environmental groups, scientists, federal agencies, RIDEM programs, and other state agencies. There were few local government representatives and Massachusetts’ officials were never actively involved in the process. The management committee exercised significant control over the CCMP’s contents through most of the planning process. The executive committee rarely debated specific recommendations until the CCMP’s controversial approval process. This relationship differed from the other cases where the executive committee exercised greater control.

Planning process

The planning process lasted from 1985 until 1992 at a cost of \$10 million. Over 75 percent of the funding went to over 110 scientific and policy-related research projects on Narragansett Bay and its problems (Imperial, McGee, & Hennessey, 2000). The heavy emphasis on science was a common feature of many Tier I programs such as the Albermarle-Pamlico Estuary Study (APES) and the Long Island Sound Study (LISS) (Korfmacher, 1998; Hennessey, 1994; Imperial, Hennessey, & Robadue, 1993; Imperial, Robadue, & Hennessey, 1992).

Unlike the other cases, no focal issue emerged. Research concluded that the bay suffered from a “low-grade fever” resulting from several smaller interrelated problems. While a few participants and EPA staff suggested taking a strategic approach and addressing a limited set of problems, NBP staff and most committee members rebuffed these suggestions and decided to focus the CCMP on a wide range of problems (Imperial, McGee, & Hennessey, 2000).

The CCMP's development began when staff synthesized available research and presented their recommendations to the management committee in the form of a "briefing paper." It was an iterative process and portions of briefing papers were often reviewed several times before they became draft CCMP chapters. The original intention was that these decisions would be made by consensus and result in a CCMP with broad public and stakeholder support. Unfortunately, a number of problems emerged:

- The lack of a focal problem resulted in an ambitious plan with no priorities.
- There was little local government involvement until the draft plan was completed.
- The lengthy planning process combined with imposition of deadlines near the end of the process created a sense of urgency. Committee members were then reluctant to rehash old issues even though consensus no longer existed.
- The CCMP's detailed recommendations forced participants to debate the details of proposals rather than reach agreement on general goals, policies, and actions.
- The CCMP focused on contentious issues and changing legislation, policies, and regulations rather than nonregulatory actions where there was stronger agreement.
- The decision to include the CCMP in the *State Guide Plan* near the end of the planning process created concerns that some of the plan's provisions would become binding (Imperial, McGee, & Hennessey, 2000).

These problems combined with the legacy of distrust between the RIDEM and CRMC, poor communication among stakeholders, conflicting personalities, and the inclination for many of the agencies to adhere to traditional policies rather than embrace the recommended policy changes created conflict when the draft CCMP was released for public comment in 1992. As one RIDEM official noted:

I don't know that they ever achieved unanimous decisions on the bay project [NBP] though. I don't recall that on a lot of their recommendations. There were some strong opinions against some of the recommendations that were in that plan, including people here in the department [RIDEM] who didn't buy into everything that was in it either. I don't think its fair to say that they really reached consensus. CRMC didn't buy into a lot of what was in there. It was a very difficult process and I think we all learned a lesson from it. If nothing else, how not to do it in the future.

The final approval process was very much a "free for all" and for some time the CCMP's fate was in doubt. As one EPA official recalled: "There were so many problems at one point we thought the whole thing was going to go down in flames." However, conflicts surrounding the draft CCMP were ultimately resolved and EPA approved the final CCMP in 1992. It contains more than 500 recommendations, 41 of which were high priority.

Most informants shared common reflections about the CCMP. First, it lacked focus and was too ambitious. As one respondent noted, "the NBP CCMP looks like the bible. The new ones [other CCMPs] are more like *USA Today*." Second, many participants were "turned off" by the long, adversarial nature of the planning process. As one respondent recalled: "There was so much burn out when the CCMP was completed . . . people walked away, never wanting anything

to do with this program again because it was so contentious, long, tedious.” Another RIDEM official noted: “they [NBP] were just all over the place. From sea level rise to CSOs to septic system maintenance, all over the place. People’s energy went into developing a plan and fighting about what was important. When the plan was done, it was this big thud of relief. There was very little implementation. People virtually distanced themselves from that plan because it was so contentious at the end.” Third, many participants were skeptical of the CCMP’s projected cost of \$392 million, even though \$341 million was already required to address combined sewer overflows (CSOs). This occurred at a time when the state was mired in a prolonged recession with declining agency budgets and a hiring freeze was in place. As one observer noted: “It’s sad the program has to unveil itself now . . . You would have to spill blood in the water to focus attention on the Bay (*Coastlines*, 1991, p. 9).”

CCMP Implementation

Implementation has always been an uphill battle. The NBP even died for about a year following the CCMP’s approval. The period of inactivity coincided with the NBP’s reorganization as a program buried within the RIDEM’s bureaucracy. This was a challenging time. As one EPA official recalled: “The program barely remained alive for several years. There was no way to keep the staff on board, which is another reason it [the NBP] evaporated, there was not a presence . . . It’s been difficult for them to rebuild.” It was a major challenge to survive, let alone implement the CCMP. Funding was restored in July 1993 and implementation efforts improved as EPA funding increased. In May 1995, the program embarked on an effort to “reinvent” itself. Its name was changed to the Narragansett Bay Estuary Program (NBEP) and staff placed a renewed emphasis on partnerships and collaboration.

From 1993 to 1999, the NBEP leveraged approximately \$2.2 million in competitive grants, non-federal matching funds, and in-kind services beyond the EPA’s annual funding and implemented more than 60 discrete projects. Implementation has tended to focus on habitat restoration and protection. Notable projects included a critical resource-mapping project and a habitat restoration charrette. More recently, the NBEP, CRMC, and Save The Bay were awarded a \$270,000 grant from NOAA to develop a collaborative coastal habitat restoration program and database. The NBEP continues to sponsor workshops and special events such as the Narragansett Bay Summit 2000.

Another notable accomplishment was the designation of all state waters as a no-discharge zone, a first for any state. Various RIDEM programs collaborated to draft a marina pump-out siting plan. The RIDEM worked with Rhode Island Marine Trades Association (RIMTA) to identify marina owners willing to install pumpout facilities. Grants funded the construction of enough pumpout facilities to meet EPA’s requirements. The RIDEM then worked with the CRMC to amend its regulations to include new requirements for pumpout facilities to create incentives for marina’s to participate in the program (Imperial, McGee, & Hennessey, 2000).

The NBEP’s premier accomplishment may be its leadership and participation in the Greenwich Bay Initiative (GBI). The GBI is a coalition consisting of the City of Warwick, RIDEM, CRMC, and numerous other organizations. Over \$7 million in grant funding was obtained to support implementation. The centerpiece is a \$130 million bond referendum to

expand sewers to remove failing onsite sewage disposal systems (OSDSs) in Warwick. The RIDEM stepped up efforts to identify failing OSDSs and a program was created to provide grants and loans to homeowners to upgrade or replace OSDSs. Warwick also approved new stormwater regulations, a watershed overlay, and revised its harbor management plan (Imperial, McGee, & Hennessey, 2000).

Of the four cases, the NBEP's implementation is clearly the most problematic. No respondents outside of the NBEP staff reported using the CCMP as the basis for making decisions and the implementation activities noted above are only loosely-based on CCMP recommendations. More troubling is the fact that no state funds have been allocated to support implementation, a source of frustration for many respondents. As one EPA official lamented: "its outrageous that we've spent an inordinate amount of time on the phone to come up with a match on a \$15,000 grant." Even with efforts such as the Narragansett Bay Summit, there appears to be little interest in revising the CCMP or embarking on another planning process. These problems are discussed in greater detail in a subsequent section.

Delaware's Inland Bays

Watershed planning in the Inland Bays dates back to the late 1960s. This history is important because it laid the groundwork for the Delaware Inland Bays Estuary Program (DIBEP). In 1984, just prior to the DIBEP, the Governor's Task Force on the Inland Bays (GTFIB) released its report and subsequently the Governor created an Inland Bays Monitoring Committee (IBMC) to oversee a five-year implementation effort. When the 1987 WQA was debated, state officials successfully lobbied to be designated as an estuary of national significance. Their hope was to use the NEP to build upon the work of the IBMC. When the NEP was created, the Inland Bays was added as a Tier II program (Imperial, 2000a).

Over \$2 million was spent between 1988 and 1995 to develop their CCMP. The management conference collectively involved over 200 individuals (Imperial, 2000a; Poole, 1998). The executive committee consisted of the Secretaries of the Department of Natural Resources and Environmental Control (DNREC) and the Delaware Department of Health and Social Services (DHSS), EPA Region III, and the Sussex County Administrator. The implementation committee consisted of officials from federal and state agencies, Sussex County, the General Assembly, and chairs of the STAC and CAC. It evaluated the results of research projects, approved work plans, and developed consensus on CCMP priorities. The STAC consisted of scientists and technical experts from various agencies. The IBMC initially served as the CAC and when it ended in 1989 its members joined the CAC or other committees.

Planning Process

Previous planning efforts identified excessive nutrients and habitat loss as important issues. The DIBEP's early years were largely oriented towards researching problems while later years focused on developing the CCMP, getting it approved, and developing the Center for the Inland Bays (CIB), its implementation structure. During the planning process, a volunteer water quality monitoring program was established and several demonstration projects were implemented. There were also two sustained efforts to install best management practices

(BMPs) and improve watershed governance. The first was the governor's Inland Bays Recovery Initiative (IBRI), which began in early 1990. The second was the NRCS's hydrologic unit area (HUA) project for the Inland Bays. It lasted between 1990 and 1998 and \$2.5 million was spent on BMPs that reduced nitrogen loading by more than 2,700 tons. Collectively, the two efforts hired four conservation planners, developed nutrient management plans for 48,000 acres, created 436 nutrient management budgets, and instituted the "We C.A.R.E." technical assistance program. New erosion, stormwater management, and marina regulations were established. There were also several attempts to replant submerged aquatic vegetation (SAV) (Imperial, 2000a). As one respondent recalled: "It was one of the neat galvanizing activities we had during that time. We had a sector of the department that was 150 percent behind the NEP."

The six-year planning process was time-consuming and involved countless committee meetings, educational seminars, workshops, and public meetings. As one respondent recalled: "We ran around like chickens with our heads chopped off because it is so difficult to try and do everything by committee." Near the end of the process, two major conflicts emerged. First, the poultry industry objected when agriculture was portrayed as the major source of nutrients. As one participant noted: "They [Farm Bureau] had some genuine concerns about how agriculture was being portrayed. It was not what agriculture was being asked to do." DNREC staff worked with industry officials to rewrite the controversial section and as one participant recalled: "There were 2 – 3 meetings on the issue. I won't use his name, but when the so-called 'godfather of the farming community' was brought in and his words were 'I can live with this' there was relief."

While this resolved the conflict, it had some lasting consequences. Some were angry and critical of the DNREC for "caving in" and "watering down" the plan. As one participant noted: "The only negative comment I would have [about the planning process] is that a lot of the plan got changed in the final hours." The Sierra Club even withdrew its support and joined American Littoral Society in suing the EPA and DNREC to force the development of a total maximum daily loading (TMDL) for the watershed in 1998. Others were surprised: "[I]t was surprising to find out that the farm people were upset with what was in there [CCMP]. . . . I found it hard to understand because they had representatives there every meeting. It isn't like we shunned them or kept them out. They were there every meeting and should have been reporting back to the respective organization what was going on. Evidently, that wasn't done."

The second conflict occurred when EPA headquarters staff recommended rejecting the CCMP. The EPA believed that the CCMP failed to satisfy its approval requirements. As one EPA staff member noted: "The DIB, we came close to flunking them. They had to work hard to get their CCMP up to our standards." Another EPA official described it as a "tortuous process between EPA headquarters, the EPA region, and the DIBEP to document minimal consistency with key program requirements such as financing and monitoring plans." This was the latest in a series of conflicts between EPA and the DIBEP. As one state official recalled: "it was all just bumps and scrapes with the EPA the whole way because they wanted the seven purposes and we didn't want to do the purposes because we had already been there and done that."

It was clear to the DIBEP that EPA headquarters was ready to reject the CCMP so state officials mounted a behind the scenes effort to pressure EPA to approve their plan. The CCMP's fate literally hung in the balance until the morning of the signing ceremony in June 1995.

Apparently, a personal phone call from the governor to the EPA administrator triggered a flurry of activity culminating in EPA's approval of the CCMP later that day. Interestingly, the conflict with EPA became an important galvanizing event. As one participant recalled: "Despite all of the differences between DNREC staff, the farmers, our two Secretaries, the environment and whatever, despite all of those differences and approaches and attitudes and political status and everything else, it just brought us together. And it was like we had found the enemy." For the first time, all of the stakeholders put aside their differences and worked towards a common goal.

CCMP Implementation

The CCMP contains 17 action plans and various time frames, none of which extends beyond 2000. Full implementation was estimated to cost over \$39 million between 1996 and 2000, excluding infrastructure investment. It also identifies nine goals, which are really high priority implementation activities similar to those identified by the GTFIB (Imperial, 2000a). Thus, these "goals" are different than the measurable goals found in Tampa Bay and Tillamook Bay's plans or the vague goals found in the NBP's CCMP.

Participants explored several implementation structures. These discussions led to the 1994 *Inland Bays Watershed Enhancement Act* establishing the Center for the Inland Bays (CIB). The CIB is a 501(c)(3) nonprofit organization supporting educational, restoration, and land acquisition efforts. It also serves as a neutral forum for discussing issues and building partnerships to implement the CCMP. The CIB's board consists of the Secretaries of DNREC and the Department of Agriculture (DDA), the Sussex Conservation District (SCD), Sussex County Association of Towns (SCAT), Sussex County, the STAC and CAC chairs, and two appointed residents. The EPA is a non-voting member.

Since the CCMP was not written with the CIB in mind, board members undertook an effort to prioritize implementation. Early implementation efforts were also hampered by the lack of dedicated funding, inadequate staff resources, and issues related to developing a new organization (e.g., liability concerns, hiring procedures, etc.). Implementation activities have since expanded as funding stabilized and the CIB's staff expanded.

Implementation efforts occurred in a number of areas. Several point sources have been removed. Since 1988, sewer systems expanded by almost 200 percent and more than \$158 million was spent to remove more than 14,000 OSDs. Sussex County revised its comprehensive plan in 1997 to strengthen its land use policies and reference the CCMP's nine goals. A water use plan designed to reduce user conflicts was developed. The DNREC and the CIB created three tributary teams to develop strategies to implement the TMDL's recommendations. DNREC's Open Space Program preserved approximately 1,592 acres at a cost of over \$13 million while NGOs such as the Nature Conservancy acquired significant land holdings. The DDA's farmland preservation program preserved more than 37,594 acres in Sussex County from future development. The CIB sponsored projects to restore SAV and worked with other actors to conduct restoration projects. The most notable project is located at James Farm, a 150-acre tract donated to Sussex County and leased by the CIB (Imperial, 2000a).

Steps were taken to address NPS problems on agricultural lands. Conservation plans now exist for 60,000 acres of farmland. In 1999, the EPA promulgated standards to begin regulating some poultry growers while the General Assembly passed legislation requiring the DDA to begin regulating the poultry industry. More recently, Purdue committed to building a plant to pelletize 80,000 tons of manure annually while the Governors of Maryland and Delaware announced plans to explore burning manure at a regional power plant. Research is underway on genetically modifying broiler hens or corn and determining whether enzymes can be added to food to reduce manure's phosphorus levels. Others are examining whether adding alum to poultry litter reduces nutrient loadings (Imperial, 2000a).

The DIBEP is a complicated case. On the one hand, the DIBEP made progress implementing their CCMP and the CIB expanded the capacity for public education, scientific research, and habitat restoration. The CIB also serves as a neutral forum to discuss issues. While this improves communication and elevates issues on state and local policy agendas, it has limited its ability to address controversial issues related to agricultural and land development – issues of great concern to many participants. This was a source of frustration for many respondents. As one respondent observed:

The thing that's been the most upsetting for me is the setting up of the Center for the Inland Bays. I thought it would be the once thing that would take over all of the things that I was doing. . . . They are the biggest waste of taxpayers' money I've ever heard of in my life. . . . It has not been effective at all because of the way they are set up. They are set up with a board appointed by the state that is there to protect their own turf and they don't give a continental damn about the Inland Bays.

Many respondents also view progress on controversial issues as their main measure of success and frequent criticisms were “all we do is talk and there is no action” or “everybody is spinning their wheels.” Others were supportive of the CIB and recognized that it likely could not function if it focused primarily on controversial issues. Moreover, it is questionable whether it is appropriate to blame the CIB for failing to “solve” problems that others have been unable to make progress on over the last three decades.

While the CIB has made progress, implementation efforts today are only loosely-related to the CCMP and are guided more by the watershed's TMDL, decisions of staff and board members, and funding opportunities. The CCMP also lacks measurable goals for monitoring progress or providing direction. One respondent noted the danger this causes: “We've never been able to follow one issue to completion to anyone's satisfaction.” Another suggested that as a result their efforts lack focus and address “every issue you can imagine.”

Tampa Bay

Tampa Bay entered the NEP through the EPA's governor's nomination process in 1990 (Tier 3). Local officials believed it would help them attract additional resources to address watershed problems. Since its inception, it has been a partnership consisting of six local governments (Hillsborough County, Pinellas County, Manatee County, Tampa, St. Petersburg, and Clearwater) and three regulatory agencies (EPA, Florida Department of Environmental

Protection (FDEP), and the Southwest Florida Water Management District (SWFWMD)). The Tampa Bay Regional Planning Council (TBRPC), its Agency on Bay Management (ABM), the U.S. Army Corps of Engineers (COE), Environmental Protection Commission (EPC) of Hillsborough County (EPC), Tampa Port Authority (TPA), the Florida Marine Research Institute (FMRI), and other organizations also participate to a lesser extent.

The management conference's policy committee was comprised of politicians and high-ranking agency officials representing six local governments and three regulatory agencies because participants recognized that implementation would primarily be a local responsibility. The policy committee set the direction, made administrative and budgetary decisions, and supervised the planning staff. The management committee consisted of upper-level managers from governmental and nongovernmental organizations and the co-chairs of the CAC and the technical advisory committee (TAC). The CAC was appointed by the policy committee and includes interest group representatives. The TAC was larger with an open membership consisting of more than 200 individuals and a core group of 50 to 60 environmental professionals from federal, state, regional, and local agencies, and academia. The TAC provided objective assessments of scientific and technical information for the policy and management committees.

Planning Process

Early technical work examined gaps in research and synthesized technical information on the bay's problems. Gradually, the technical work shifted to developing measurable goals for nutrient reduction, seagrass restoration, and habitat restoration. Planning efforts then shifted to developing action plans, getting the CCMP approved, and developing the Interlocal Agreement (IA) that created the Tampa Bay Estuary Program (TBEP).

While technical work progressed, nearly \$1 million for demonstration projects was obtained to demonstrate that they were "doing something". Several notable public outreach efforts were undertaken. For example, the Tampa Bay NEP, the Sarasota Bay NEP, and Florida Cooperative Extension Service (CES) established the Florida Yards and Neighborhoods Program. The program educates homeowners about how to reduce NPS runoff and has since been expanded to 18 counties. A collaborative environmental monitoring program was created to coordinate the watershed's 36 programs. Data collection and storage was standardized, sampling sites were coordinated, and common QA/QC procedures were agreed upon.

There were also efforts to restore habitat. By 1996, 24 habitat restoration projects covering 85.6 acres were completed by various agencies. Local governments expanded their efforts to manage stormwater. The counties are developing watershed management plans at the sub-basin level to address stormwater problems. The cities of Tampa, St. Petersburg, and Clearwater were also involved in numerous activities. For example, Clearwater developed watershed management plans for 8 sub-basins and \$23 million in restoration projects are included in the city's capital improvement program (CIP) with future expenditures estimated at between \$93 and \$117 million (Imperial, 2000b).

Early efforts to develop the CCMP focused on developing "preliminary action plans." An iterative process was then used to review each draft. Eventually they became draft CCMP

chapters. Once the committees approved the CCMP, it was subject to public comment while focus groups with interest groups were used to solicit feedback. In general, the CCMP was well received and little controversy surrounded its December 1996 approval. The process did require what many respondents characterized as a “painstaking consensus-building process.” The same respondents, however, felt strongly that the process was necessary because it allowed them to build the relationships and trust that led to the IA.

CCMP Implementation

The CCMP contains 41 action plans addressing water and sediment quality, bay habitat, fish and wildlife, dredging and dredged material management, and, spill prevention and response. However, respondents were quick to note that there was no expectation that action plans would be implemented as specified in the CCMP. Instead, action plans were to serve as a starting point for determining how to achieve the plan’s goals.

The heart of the CCMP is its measurable goals for nutrient reduction and habitat restoration. Nutrients are capped at existing levels (1992 – 1994 average), which equates to reducing nitrogen by roughly 17 additional tons per year or 84 tons per year by 2000. These reductions are expected to allow seagrass beds to return to 1950 levels, an increase of 12,350 acres over what existed in 1992. In October 1996, the Tampa Bay Nitrogen Management Consortium (NMC) was established to develop a plan to achieve nutrient reductions. The NMC contains a wide range of governmental and nongovernmental organizations committed to achieving the non-local government portion of the CCMP’s required nitrogen reductions. The CCMP also includes the goal of restoring 100 acres of wetlands every five years, roughly equivalent to the rate of current restoration. The partners also agreed to policies designed to restore the historic balance of wetland types. To assist in these efforts, the TBEP identified and ranked 138 restoration sites and recommended 28 land acquisition sites (Imperial, 2000b).

Once the CCMP was approved, the partners turned their efforts towards making it more than just a “plan” and explored several options. Due to the leadership of several influential committee members, they agreed to develop an independent alliance of government entities pursuant to Chapter 163 of the Florida Statutes, which required developing an Interlocal Agreement (IA) (Khator, 1999). Developing the IA involved a complicated and time-consuming process of negotiation. Two overarching issues framed the debate. Regulators were concerned with accountability and wanted local governments to identify projects and provide information on funding, outcomes, and implementation schedules. Local governments were only willing to develop five-year work plans and use annual supplements to specify details and changes. In return, they wanted more regulatory flexibility and expedited permit reviews for implementation efforts (Imperial, 2000b; Khator, 1999).

After numerous drafts and endless meetings, an IA was signed in February 1998.⁴ The “Chapter 163” organizational form provided the freedom to construct an organization without the complicated financial reporting requirements associated with creating a Section 501(c)(3) organization. TBEP staff are directed by a policy board (i.e., board of directors), a modified version of the policy committee, with 8 voting members (Tampa, St. Petersburg, Clearwater, Hillsborough County, Pinellas County, Manatee County, FDEP, and SWFWMD) and one

nonvoting member (EPA). The IA also established a management board, CAC, and TAC similar to those used during the planning process (Imperial, 2000b).

The IA commits its signatories to the CCMP's goals, all of which are to be achieved collectively with the exception of the nitrogen reductions allocated to each local government. Each signatory submitted a five-year action plan and annual supplements describing the actions taken to achieve these goals. The regulatory partners agreed to extend, as appropriate, certain forms of regulatory flexibility and to expedite permits reviews for projects in approved action plans. The IA also includes provisions for a sunset review every five years and each partner is required to provide financial support for the TBEP (Imperial, 2000b).

At the time of our site visit, the EPA had contributed approximately \$861,000 for implementation and oversight, which was matched by \$665,000 in cash from local governments and the SWFWMD. These expenditures do not include the costs of in-kind services associated with actions by the IA's partners. While these expenditures have not been estimated systematically, they are substantial. For example, the costs of habitat restoration projects completed by SWFWMD, FDEP, and local government partners easily exceed \$3 million while the EPC's environmental monitoring costs annually exceed \$550,000 (Imperial, 2000b).

Significant progress has been made in achieving some of the CCMP's goals. The initial five-year work plan has commitments for over 200 activities. The 105 projects in the NMC's action plan should produce nutrient reductions of approximately 120 tons of nitrogen per year with half coming from industry. These efforts are expected to exceed the CCMP's goal by 60 percent or 30 tons per year. In terms of habitat restoration, 1,600 acres will be restored including 250 acres of low-salinity habitat, exceeding the five-year goal of 150 acres (Imperial, 2000b).

Some partners incorporated CCMP goals into other programs. The FDEP and EPA used the IA's nitrogen reductions to satisfy the requirements for developing a TMDL for Tampa Bay, making it one of the first in the state. The SWFWMD incorporated the nitrogen goals into its revised Surface Water Improvement and Management (SWIM) plan and the EPA agreed to incorporate them into municipal separate storm sewer systems (MS4) permits. Various agencies adopted the TBEP's priorities for habitat restoration and land acquisition. Manatee County incorporated applicable goals, objectives, and actions into its comprehensive plan. Other local governments incorporated their five-year action plans into CIPs.

While these accomplishments are notable, the TBEP's greatest challenges may lie ahead. Nutrient reduction and restoration goals may become harder to achieve in the future. As one respondent noted: "We're in it for the long haul. The next five years will be harder and the ones after that even more so. We've done the easy part." Accordingly, there may be diminishing returns and higher costs associated with future nitrogen reductions and habitat restoration projects. It is also questionable whether it is possible to "hold the line" given current growth projections. As one respondent noted: "You have got to bring in the private sector and they have to figure out how to do that effectively . . . It has got to be more of a feature because EPA is decreasing their funding which means everybody else has to increase their funding." It may be challenging, however, to bring in additional local government and industry partners because they were not involved in the years of interaction and negotiation that produced current agreements.

Despite these concerns, the respondents were hard-pressed to identify substantive problems. All praised the program, often in glowing terms like those of this local official:

[TBEP Director] did not pay me to say this either . . . but this has been the most impressive, and I have been in government for more than 20 years, and I have never seen anything like this where you had the support of politicians and scientists and even the commercial side and the residential side, the citizens, actually wanting to do something so much that they were willing to sit around a table and work it out. I mean it was incredible.

Given the strong political commitment and success of its first five-year action plan, there is reason to believe that the TBEP will continue making progress towards its goals.

Tillamook Bay

There is a long history of watershed management efforts for Tillamook Bay. The first efforts occurred in 1979 when the Department of Environmental Quality (DEQ) began to identify sources of bacterial loadings. In 1981, Tillamook Bay became one of 21 watersheds in the NRCS's Rural Clean Water Program (RCWP). Approximately \$6 million was spent over 15 years to install agricultural BMPs and Tillamook Bay had the highest landowner participation in the RCWP (Gale, et al., 1993). These efforts improved water quality and provided the foundation for the Tillamook Bay National Estuary Program (TBNEP) (Busse, 1998).

Tillamook Bay entered the NEP through the EPA's streamlined governor's nomination process in 1993 (Tier 4). The TBNEP was supposed to undertake an expedited planning process but organizational and staffing problems ended up extending the planning process by more than a year. The program is currently on its third director (including two interim directors) and its third set of core staff. The policy committee made a poor choice when selecting its first director, which had virtually no experience managing staff, contracts, or a \$1 million budget. As one respondent observed: "When I first became involved with the NEP, I remember telling someone that it looked like a graduate school bullpen. The attitude was that I've got my project and I don't need anyone to tell me what to do. These were people that didn't lend well to supervision and they didn't understand the concept of teamwork." While these problems were eventually resolved, the interpersonal conflicts and morale problems that spilled over to committee meetings slowed down the planning process.

Tillamook Bay used a management conference structure consisting of policy, management, science and technical (STAC), citizens advisory (CAC), and financial strategy advisory (FSAC) committees. Many of the committee members served on similar committees in previous planning efforts. As one respondent noted: "the NEP wasn't an immaculate conception; we've been dealing with these issues for a long time."

The nine-member policy committee consisted of representatives of EPA, Oregon Watershed Enhancement Board (OWEB), Department of Environmental Quality (DEQ), Cooperative Extension Service (CES), chair of the management committee, and elected officials

from Tillamook County, a local city, the Soil and Water Conservation District (SWCD), and a local port commissioner. It established the program's objectives, priorities, and direction. It also appointed the 20-member management committee comprised of federal, state, and county officials. It also included representatives from the commercial fishing and shellfishing industries, dairy industry, scientists, and the general public. The management committee appointed members to three subcommittees. The STAC consisted mostly of state officials and faculty from Oregon State University. The CAC was a small group of local citizens who assisted in developing the CCMP and implementing various public education activities. The FSAC developed funding strategies to support implementation.

Planning Process

Earlier planning efforts identified bacterial contamination, sedimentation, and degraded salmon habitat as priority issues. Flooding emerged as an issue in 1996 when a devastating flood caused over \$53 million in damage. Fortunately, this occurred early in the planning process and consequently flooding was eventually added as a priority issue. This did not occur immediately because there was some concern that it would raise controversial issues (e.g., dredging) and dominate the planning process to the detriment of other issues. The EPA also forced participants to limit the CCMP's focus to actions that demonstrated a linkage between flooding and improving environmental conditions. This eliminated many recommended actions.

While technical work was progressing, the TBNEP was busy in other areas. Efforts to install BMPs and restore habitat initiated prior to the TBNEP continued. Public outreach efforts such as fact sheets, a newsletter, an internet site, interpretive signs, special events, and a speaker series for schools and NGOs were initiated. A "challenge grant" program was created that awards small grants to schools, educators, and community groups to do educational and scientific research. A volunteer water quality monitoring program was created. More recently, the TBNEP collaborated with the Economic Development Council of Tillamook County (ECDTC), Tillamook County Soil and Water Conservation District (SWCD), and Tillamook Bay Community College (TBCC) to establish the Tillamook Coastal Watershed Resource Center (TCWRC). The TCWRC is home to the TBNEP's GIS system and provides training to citizens and local officials involved in the Oregon Watershed Enhancement Board's (OWEB's) watershed management efforts.

The CCMP's development began late in 1995 when a group of ten individuals representing land owners and dairy operators developed the Preliminary CCMP. This document provided the basis for discussion during 1996 and 1997. The TBNEP held 14 public meetings in early 1997 to solicit input. With the CAC's assistance, more than 300 recommended actions were identified. By July 1997, the CAC refined this list to 24 high priority citizen actions, which were forwarded to the management committee. Subcommittees were then created for each CCMP chapter. An iterative process involving numerous drafts resulted in a draft CCMP released for public comment in September 1998. Most comments were supportive in nature.

The major frustration for respondents was the CCMP's approval process. The EPA made the TBNEP go through a second public notice period, putting the process further behind schedule. Participants were unaware that the Governor was going to make the agencies sign the

CCMP. This caused additional delay as the CCMP worked its way through various chains of command. The partners signed the CCMP in June 1999 at one of the Tillamook County Performance Partnership's (TCPP's) first meetings. However, the participants had to wait until December for EPA's final approval. This frustrated respondents because implementation was delayed while staff edited the plan and made required changes. Despite the delays and "endless meetings," most respondents felt that the time spent was crucial to the CCMP's widespread acceptance and the development of the TCPP. As one participant noted, the consensus-based process was "a little more painful, but it's worth it because at the end you have a better product and better buy in. . . . I think you have to go through the building of relationships and have the committees wrestle with the issues."

CCMP Implementation

The CCMP contains 21 policies and 63 actions designed to achieve three goals. It also contains numeric targets and specific timeframes ranging from 2000 to 2010 that can be used to monitor implementation. However, respondents were clear that they were more concerned with achieving goals and targets than implementing the action plans described in the CCMP. Thus, these goals and targets are the heart of the CCMP, which may give the plan a longer "shelf life" than the Narragansett Bay and Inland Bays CCMPs.

Considerable attention also focused on making the CCMP more than just a "plan". As one respondent recalled, early in the process people were saying: "Oh my god, you're going to do another government plan, spend millions of dollars, and put it on the shelf." Various implementation structures were analyzed, however, two policy committee members became "champions" for using a "performance partnership" to implement the CCMP.

The TCPP was established in July 1998 by a resolution of the Tillamook County Board of Commissioners. It has a two-tiered administrative structure. An executive board provides overall guidance and direction for the TCPP's staff. The executive board is a subset of the 61-member performance partnership, which consists of federal, state, county, and local officials, special districts, industry representatives, environmental interest groups, and citizens. The objective was to "reinvent" government in Tillamook County. As one policy committee member put it: "Our concept is focus on what you want to achieve, get people around the table, and do something. Quit planning." The TCPP also allowed the TBNEP to reinvent itself. Near the end of the planning process it received bad press as characterized by one participant: "We didn't have a local director, we brought in all of these outside scientists, and we spent \$5 million. All we have is a plan." The TCPP concept garnered stronger community support and positive press coverage because it focused on implementation.

Implementation efforts over are expected to cost between \$80 and \$160 million and obtaining this funding will be a major challenge. The EPA has committed to four years of funding at approximately \$300,000 per year. The TCPP's strategy is to improve communication, coordinate existing programs using shared targets, and then leverage existing federal and state resources to pay for actions that focus on five priorities common to a number of resource management efforts (Trenholm, 1998). As a Tier IV program, Tillamook Bay has the shortest implementation history of the four cases. However, it has managed to make some notable

progress, in part because the CCMP is designed to build upon existing programs. Since 1994, the ODF spent in excess of \$21.4 million on road improvements designed to reduce erosion and sedimentation. Culverts and bridges were built, as were new forest roads. Old forest roads were closed while others were improved and hundreds of thousands of cubic yards of rock was spread. In 1998 alone the ODF installed 20 boulder weirs, 11 off-channel alcoves, 8 jump pools, and 429 root wads weighing between 1,000 and 9,500 lbs. in headwater streams to improve salmon habitat. The ODF plans to continue these efforts and leverage additional funding from future timber harvests to expand these activities. The TCPP and its partners have also had some luck leveraging funding from other sources (Imperial & Summers, 2000).

Despite the progress, concerns remain. Some respondents questioned whether the performance partnership concept will work in practice. As one respondent noted: “The naive I see is people saying ‘let’s have the agencies pool their resources and we’ll have enough to do what we need to.’ The idea that this organization and this one have pots of money and we’ll throw it together and they’ll be happy with how it’s being used – well, we’ll just see about that.” Other respondents noted that the complex nature of federal and state grant programs with different priorities, grant restrictions, and cost-share requirements makes it difficult to combine resources and focus on a shared set of priorities. Tillamook County is also small, sparsely populated, and in poor financial shape due to the flood damage. This makes it difficult to compete for grant funds and satisfy cost share requirements.

The TCPP also has a great deal of flexibility built into its organizational structure. The danger, as one respondent noted, is that: “You have to keep focus, because you can get so wrapped up in the bureaucracy of keeping the staff employed, keeping the GIS stuff up to date, that you begin to lose the real intent. The real intent of the TCPP is to help agencies, land owners, interest groups implement the CCMP and other goals.” The TCPP may ultimately prove to be too adaptive, get captured by changing political priorities, and become unable to sustain long-term commitments to the activities specified in the CCMP. A related concern is that the TCPP is relatively informal, relies on personal relationships, and is heavily dependent on the leadership of local politicians and agency officials. It is unclear what will happen when leadership changes due to local elections and staff turnover. Despite these uncertainties, the TCPP’s commitment to systematically address problems and monitor progress, its political support, and implementation progress offer reason to be optimistic about its future.

Assessing the Four Estuary Programs

The four cases illustrate the wide range of implementation activities and the diversity of experiences. As noted in Table 1, most implementation efforts were nonregulatory and designed to improve environmental conditions directly (e.g., restoration projects, or infrastructure investment) or indirectly (e.g., public education, changing decision making, etc.). Frequent activities included constructing sewers to remove OSDs (e.g., Inland Bays), installing stormwater BMPs (e.g., Tampa Bay), restoring habitat (e.g., Inland Bays, Tampa Bay, and Tillamook Bay), and installing BMPs to address other problems such as nutrient loadings from agriculture (e.g., Inland Bays and Tillamook Bay). There were many examples of new scientific studies as well efforts to educate homeowners (e.g., Tampa Bay) or farmers (e.g., Inland Bays and Tillamook Bay). Some form of collaborative planning was also used as an implementation

Table 1: Different Types of Implementation Activities

	Inland Bays	Narragansett Bay	Tampa Bay	Tillamook Bay
Education/Training				
▪ General public	X	X	X	X
▪ Schools	X		X	X
▪ Special events/Conferences	X	X	X	X
▪ Homeowners			X	
▪ Farmers	X			X
▪ Industry	X	X		
▪ Decisionmakers			X	X
Best Management Practices				
▪ Urban				
▪ Agriculture	X			X
▪ Forestry				X
▪ Homeowners			X	
Habitat Restoration/Protection				
▪ Land acquisition	X		X	
▪ Restoration projects	X	X	X	X
▪ Planning/capacity building		X	X	X
Planning/Work Groups				
▪ Specific issue(s)/ad hoc		X	X	
▪ Sub-geographic areas/subbasins	X	X		
▪ Land use planning	X	X	X	X
▪ Water use plans	X	X		X
Infrastructure Investment				
▪ Installing sewers to remove OSDSDs	X	X		
▪ Upgrading OSDSD		X		
▪ Stormwater retrofits			X	
Regulation				
▪ Growth controls				
▪ Regulatory streamlining			X	
▪ Stormwater and erosion control	X		X	
▪ Marinas	X			
▪ Agriculture	X			X
▪ Forestry				X
Financial Incentives				
▪ Tax credits				
▪ Financial incentives for BMPs				X
Scientific/Environmental monitoring				
▪ Research projects	X	X	X	X
▪ Volunteer monitoring program	X			X
▪ Coordinated monitoring/reporting			X	
▪ Interagency database/inventory		X	X	X

strategy in each watershed.

The central question is whether these implementation efforts were successful? This is a difficult question to answer because there are many ways to evaluate institutional performance and determine implementation “success” (Imperial, 1999b). It also requires determining what is being implemented. That is, what is being carried out, accomplished, fulfilled, produced, complied with, or carried out (Pressman & Wildavsky, 1984, p. xxi).

During our Academy project, the EPA and some estuary program officials suggested that CCMP implementation was successful due to the accomplishments summarized in Table 2. We do not find this argument particularly compelling. After all, if you give any organization in the four watersheds \$300,000 a year, they are likely to do something with the money that could be called an “accomplishment”. Using this logic, no estuary program could result in an implementation failure provided it spent its money appropriately. There would also be no point in developing a CCMP since “success” does not depend on whether the accomplishment is related to a CCMP recommendation. Moreover, this perspective fails to recognize that even though there are “accomplishments,” there can also be serious problems and deficiencies that should be factored into any decision about a program’s success [Table 2]. Successful implementation clearly requires something more than implementing a few projects.

What Are Estuary Programs Expected to Accomplish?

One cannot determine whether a program succeeds or fails without having some goal, objective, or policy against which “success” is judged (Pressman & Wildavsky, 1984, p. xxii). At a basic level, one could examine whether implementation improves environmental conditions. This is problematic for a number of reasons that are discussed elsewhere (Imperial & Hennessey, 2000, pp. 8.70 – 8.75). It is also interesting to note that no respondent pointed to improved environmental conditions as being a program accomplishment. Instead, they pointed to a specific project or noted some intangible benefit such as capacity building, leadership, or improved trust and personal relationships.

Alternatively, one could examine whether an estuary program implemented its CCMP. This analysis would clearly produce some disappointing results for all four programs. Moreover, such an analysis would be unfair for two reasons. First, implementation researchers have long noted that implementation is a dynamic and constantly changing process (Pressman & Wildavsky, 1984). Enactment of a program signifies the starting point of an evolutionary process of experimentation, goal definition, and the search for an appropriate implementation strategy (Mazmanian & Sabatier, 1983). Thus, a program may start out trying to accomplish one set of objectives but end up accomplishing others (Lester, et al., 1987; Pressman & Wildavsky, 1984). These activities are likely to be continuously transformed as implementors learn from their experiences (Majone & Wildavsky, 1979; Browne & Wildavsky, 1983). Changes also occur as organizations adapt to changes in their political, social, and economic environment as well as respond to “new” problems. Thus, theory suggests that implementation efforts may change as an estuary program evolves. Indeed, changes can be observed in all four programs since their inception. When viewed over time you also see a gradual shift in focus from point sources to problems such as nonpoint pollution and habitat protection.

Table 2: Selected Accomplishments and Future Challenges

Case Study	Accomplishments	Challenges
Delaware Inland Bays	<ul style="list-style-type: none"> ▪ Hydrologic Unit Area (HUA) program ▪ Inland Bays Recovery Initiative ▪ Water Use Plan ▪ TMDL and tributary strategies ▪ \$158 million in sewer infrastructure ▪ \$13 million in land acquisition ▪ Restoration project at James Farm ▪ Awareness of atmospheric nitrogen loadings and research on <i>Pfiesteria</i> ▪ Creation of CIB & state budget line item 	<ul style="list-style-type: none"> ▪ Center for the Inland Bays (CIB) is still a relatively new organization ▪ Agricultural nutrient loadings are still a major problem ▪ Revised comprehensive plans in 1988 and 1997 but development continues ▪ CCMP is becoming out of date ▪ Development of tributary strategies is changing agency priorities ▪ Collection of projects not a program
Narragansett Bay	<ul style="list-style-type: none"> ▪ Greenwich Bay Initiative ▪ Designation of state as “no-discharge zone” for recreational boating ▪ Hazardous Waste Reduction Project ▪ Improved planning capacity in RIDEM 	<ul style="list-style-type: none"> ▪ Collection of projects not a program ▪ State provides no implementation funding ▪ CCMP is no longer being implemented by the NBP partners
Tampa Bay	<ul style="list-style-type: none"> ▪ Interlocal Agreement ▪ Nutrient Management Consortium ▪ Efforts to coordinate monitoring programs ▪ State land acquisition programs ▪ Stable implementation funding ▪ Estimation of atmospheric nitrogen loadings 	<ul style="list-style-type: none"> ▪ Lack of linkage with land use planning ▪ Need to address localized water quality problems ▪ Need to bring in other local government and industry partners
Tillamook Bay	<ul style="list-style-type: none"> ▪ Tillamook County Performance Partnership (TCPP) ▪ Funding for BMPs in state forests ▪ Development of the Tillamook Coastal Watershed Resource Center 	<ul style="list-style-type: none"> ▪ Limited financial resources at the county level ▪ TCPP is developing as an organization ▪ Flooding events distract public attention and resources from other NPS problems

Second, almost none of the respondents we interviewed viewed the goal of their program as implementing CCMP recommendations. In Narragansett Bay, it was clear that the CCMP was never used to guide agency decision-making and NBEP implementation efforts are at best only loosely-related to its CCMP. However, given its ambitious scope, vague goals, and 500 recommendations, nearly any activity taken to improve environmental conditions is “loosely-related” to the plan. The Inland Bays made some progress in implementing its nine high priority actions, but current efforts are no longer based on CCMP recommendations. The CIB also lacks specific goals, policies, and objectives, which make it difficult to hold the CIB accountable for its progress. Tampa Bay and Tillamook Bay present a different situation. The respondents in both programs indicated that they never intended to implement action plans as they are specified in the CCMP. The action plans appeared to be designed primarily to satisfy the EPA’s requirements. Instead, the focus for most respondents was to try and achieve the CCMP’s measurable goals and targets. The action plans are viewed as a starting point for identifying the activities necessary to achieve these goals.

For these reasons, it was clear that our analysis of CCMP implementation had to focus on what the estuary program and its participants were trying to accomplish and whether they were successful in making progress towards this end. We identified several possible measures:

- Did the estuary program implement projects designed to achieve CCMP recommendations based on some sort of prioritization process?
- Did the estuary program implement activities that, individually or collectively, offered some possibility of making progress towards specific, measurable goals contained in the CCMP or some other policy document agreed to by its participants?
- Does the estuary program make decisions that, individually or collectively, are designed to advance or achieve clear goals or policies contained in the CCMP or some other policy document agreed to by its participants?
- Is there a process that is used to collectively modify CCMP goals, policies, or recommendations and institutionalize these changes so that future implementation efforts can be judged against them?

Each criterion offers a sound foundation for a government program in that it has a clear purpose and the organization can be held accountable for its actions (or lack thereof). Thus, a lack of implementation does not refer to a failure to do something. Instead, it refers to a failure to do what is expected (Pressman & Wildavsky, 1984, p. xxii). Thus, the question is not whether an implementation activity is an “accomplishment,” it is whether these activities individually or collectively accomplish what was expected.

Using these standards, the NBEP is clearly a failure. It is not doing what it was originally intended to do (i.e., implement CCMP recommendations). It lacks any clear goal or objective so it is impossible to determine what is being accomplished. It has also been unable to create a process that could be used to develop new goals, objectives, or measures of success. Moreover, it has been unable to maintain any sustained stakeholder involvement or participation in implementation efforts that systematically address an environmental problem. This is particularly problematic given the NEP’s emphasis on stakeholder involvement and consensus decision making.

The CIB has achieved a moderate level of success. It has made some progress towards its nine priority recommendations and has implemented projects that address some of the CCMP recommendations. However, current implementation efforts are no longer guided by the CCMP. More troublesome is the absence of any specific goals or policies upon which to evaluate future implementation efforts. This is disappointing because the CIB provides a forum for developing a revised set of shared goals, policies, and objectives and institutionalizing them. Accordingly, as time moves on, the CIB’s success will be increasingly difficult to evaluate unless it takes steps to clearly articulate its goals and policies in ways that improve accountability.

Tampa Bay and Tillamook Bay represent fairly successful implementation efforts at this point in time. Both programs make decisions and have undertaken a wide range of implementation efforts designed to achieve specific and measurable goals, policies, and objectives contained in their CCMPs. They also have developed implementation structures that

provide a mechanism for collectively modifying CCMP goals, policies, and objectives and institutionalizing these policy changes. They also measure progress towards their goals and make this information available in ways that enhance accountability.

We are hesitant to go further with these generalizations about implementation “success” because it is also important to recognize the different contextual conditions that estuary programs find themselves in. For example, the CIB may appear moderately successful when compared to the likes of Tampa Bay. At the same time, it is a significant development in terms of the Inland Bays’ governance system because it enhances local capacity for addressing watershed problems. Estuary programs were also created to address problems that have not been adequately addressed by the existing portfolio of government programs. Thus, it would be unfair to be overly critical of an estuary program that failed to do what a myriad of federal, state, and local programs have also failed to do, particularly given the limited resources provided by the EPA. Moreover, our determination of implementation “success” is strictly related to whether the estuary program accomplished what it set out to do; individual implementation activities may in fact be notable accomplishments even if the overall implementation effort is ineffective.

Observations About the NEP: Areas for Improvement and Policy Questions

Our comparative analysis led us to draw conclusions about the NEP. We also identified some future policy issues. The following sections summarize some of the findings found in our Academy report (Imperial & Hennessey, 2000).

The NEP Emphasizes Planning and Not Implementation

One of the frequent criticisms that respondents had about the NEP was that it emphasizes “process” over “results”. In other words, it emphasizes planning and scientific research at the expense of implementation and improving environmental conditions. This is a troubling finding because a CCMP is just a plan – environmental conditions and watershed governance do not improve until the plan is implemented. The NEP’s emphasis on process is illustrated by:

- The heavy emphasis on scientific research and public participation during planning and implementation;
- The disproportionate funding spent on planning compared to implementation;
- The use of new planning efforts as implementation activities; and,
- The EPA’s detailed planning requirements and absence of comparable implementation requirements.

EPA staff also appear to view their main role as ensuring that the estuary programs produce high quality plans. One EPA Headquarters official even described the CCMP as “the ultimate product of our funding.” Unfortunately, we uncovered no data suggesting that the quality of the CCMP was a prerequisite for an estuary program’s implementation success. Respondents in both Tampa Bay and Tillamook Bay, which both have high quality plans, were quick to point out that it was the measurable goals and targets that were the true product of the planning process and suggested that much of what was included in their CCMP’s was done to satisfy the EPA.

What is curious is why the NEP has detailed requirements for planning but is relatively uninvolved in implementation. On the one hand, if implementation is a state and local responsibility and EPA maintains only a supportive role, then why does EPA actively intervene and control a CCMP's contents. If implementation is going to be a state and local responsibility, then why not give these officials the freedom to develop a CCMP that meets their needs. On the other hand, if the EPA provides millions of dollars to develop a CCMP, then it is reasonable to expect that they should have an interest in ensuring that the plans are implemented. It is also reasonable, if not appropriate, for the federal government to have an interest in how its limited implementation funds are spent. At a minimum, one would hope that EPA ensures federal tax dollars are spent implementing CCMP recommendations – something it does not do.

What has resulted may be the worst of all possible scenarios. The EPA spends a disproportionate amount of funding on planning compared to implementation. Its programmatic requirements result in reports, documents, and other materials that often are for the EPA's consumption and further exacerbate planning costs. At the same time, the EPA has no intention of holding an estuary program accountable for CCMP implementation.

The NEP Offers Little Financial Support for CCMP Implementation

The EPA's role in CCMP implementation has been a source of some criticism since the NEP's inception. Early estuary programs like the NBP operated on the assumption that when the CWA was reauthorized, a significant source of implementation funding would be included. In part, this explains the ambitious scope of its CCMP. However, the EPA has long maintained that implementing CCMPs is primarily a state and local responsibility and that an estuary program was not supposed to result in a new program but was to be implemented through existing programs (Imperial, Robadue, & Hennessey, 1992). This view is consistent with the NEP's enabling statute, legislative history, and the "new federalism" embodied in the 1987 WQA. Conversely, critics argue that the federal government has a significant responsibility for funding efforts to improve environmental conditions in these "estuaries of national significance".

While these differences reflect an unsettled debate based on different views of federalism, we do have empirical data on how well the NEP's approach to CCMP implementation has worked in practice. Initially, the EPA provided no funding for CCMP implementation. As a result, many of the early Tier I and II programs struggled just to stay alive, as indicated by the Narragansett Bay experience. After a policy change, the EPA began providing about \$300,000 a year to support CCMP implementation. These funds support a small core staff and a few projects. This was an important development because these funds increased an estuary program's capacity for organizing and coordinating implementation efforts and enhanced their ability to leverage other funding sources to support CCMP implementation. Some estuary programs have also been able to get some dedicated state or local funding. For example, the CIB managed to get a small state appropriation and the TBEP is supported by contributions by its partners.

This strategy of leveraging funds works with varying degrees of success but appears to be most effective in resource rich environments. In Tampa Bay, the CCMP redirects existing state

and local funding towards shared priorities. Similarly, in Tillamook Bay the state forest has significant resources to allocate to restoration projects. However, leveraging appears to be less effective in resource poor environments when estuary programs rely primarily on other federal and state grant programs for implementation funding. Respondents in all four watersheds noted that few EPA or USDA programs prioritize their grants to support CCMP implementation. Instead, estuary programs compete for this limited funding while the proliferation of watershed management programs in the U.S. makes this an increasingly competitive process.

Moving Beyond Random Acts of Environmental Kindness

The biggest problem with relying on “leveraging” external funds to support CCMP implementation is that it becomes difficult to systematically address specific problems over a long period of time. Federal and state grant programs have different timeframes and other grant restrictions that limit the projects that can be funded. At times, they are also designed to act as “green pork” and distributional concerns are often embedded within grant programs. For example, respondents reported that the EPA and state-EPAs often try to spread Section 319 money around their state. Another problem is the frequently changing priorities of grant programs, which respondents referred to as a “flavor of the month” mentality on the part of the EPA and state-EPAs. This is further compounded by new federal initiatives such as Section 6217, the Clean Water Action Plan, total maximum daily loadings, and comparable state and regional initiatives that shift priorities for implementing agencies. Accordingly, heavy reliance leveraging external grant funds results in implementation efforts driven primarily by changing federal and state priorities, grant restrictions, and cost-share requirements rather than CCMP goals, objectives, and priorities.

These factors make it difficult for an estuary program to undertake a sustained effort to achieve specific, measurable goals or targets. Individual implementation activities may be well designed, provide environmental improvements, and garner public or political support. The danger is that when viewed over the long-term in the aggregate, the projects will amount to nothing more than what respondents in Tillamook Bay referred to as “random acts of environmental kindness”.⁵ In other words, the collection of implementation activities is too limited in number, scope, scale, duration, or magnitude to significantly improve environmental conditions. This certainly is the case in Narragansett Bay. At the other end of the continuum are Tampa Bay and Tillamook Bay, which are designed to systematically address specific problems and have measurable goals. The experiences in the Inland Bays fall somewhere in between. Efforts to install sewers to remove OSDs have certainly been systematic. Conversely, there is no systematic approach to other implementation efforts such as habitat restoration or installing certain agricultural BMPs.

More Can Be Learned from Individual Estuary Programs

An important feature of the implementation process is the policy-oriented learning that stimulates policy change (e.g., Sabatier & Jenkins-Smith, 1999, 1993) and the diffusion of innovations (e.g., Rogers, 1995). Our analysis suggested that the NEP’s administration improved as EPA learned from the experiences of early programs such as Narragansett Bay and the Inland Bays. Thus, it was not surprising to find that the planning process for Tampa Bay and

Tillamook Bay went more smoothly or that their plans were technically superior. The NEP has also experimented to some extent with its own procedures by trying to streamline the planning process for the Tier IV and Tier V programs. The NEP also provides some opportunities for the programs to learn from each other's experiences. Estuary program staff pointed to the annual program managers meetings as being the single best opportunity for exchanging ideas. However, they also suggested that the frequency of the meetings should be increased and that smaller issue oriented or regional meetings should be used to stimulate additional information exchange. Others suggested increased interactions with watershed efforts outside of the NEP.

Unfortunately, while several EPA officials referred to the NEP as an "experiment" or a "demonstration", a number of important "experiments" were never carried out. Respondents in several estuary programs noted that the EPA has been less than supportive when it comes to approving CCMP's critical of EPA programs or policies. This is unfortunate. The EPA could have used the NEP to experiment with changes in its base programs on a limited basis. In Tillamook Bay, Oregon's watershed management efforts were designated as a "reinvention lab" pursuant to Vice President Al Gore's National Performance Review (NPR). The Reinvention Lab designation was intended to ensure a focus on outcomes and increased local flexibility rather than on inputs and mandated processes from the federal level. However, we were unable to identify any example of where the estuary program was granted flexibility by the EPA or treated any differently than other estuary programs. State and local officials were also unable to identify any example of where the EPA offered to experiment or provide this flexibility. As a result, important opportunities for policy-oriented learning were lost (Imperial & Summers, 2000).

There are also a number of ways that this "demonstration" program could better transfer its experiences to other watershed management efforts. The NEP's guidance documents are out of date and should be updated to reflect the broad base of planning and implementation experience because many local watershed efforts could benefit from this experience. Given the resource intensive nature of the planning process, individual estuary programs produce numerous technical reports and scientific studies that are of interest to watershed management programs around the country. The EPA and individual estuary programs could do a better job of making this technical information accessible over the internet. Given modern information technology, there is no reason that every report and program document should not be available over the internet. Similarly, many estuary programs have funded innovative "demonstration" projects and conducted other innovative implementation activities, many of which are poorly documented. The EPA could also require that each estuary program's biennial reports are available over the internet to further improve accountability.

Does an Estuary Program Ever End?

Two important policy questions emerged from our analysis: (1) under what conditions should an estuary program end; and, (2) under what conditions should the EPA terminate implementation funding. These questions are important and their resolution has important implications for the program's future. It is doubtful that Congress intended that estuary programs would last forever. It is also unlikely that any CCMP would serve as a useful policy document for more than five or ten years. Even the measurable goals and targets guiding implementation in Tampa Bay and Tillamook Bay are likely to need periodic revision. Yet,

there are no requirements for updating a CCMP, the EPA has no policy requiring them to be updated, and it is unclear when an estuary program ends. At the same time, programs like the NBEP are moving into their second *decade* of CCMP implementation.

Narragansett Bay illustrates why this issue requires attention. The Narragansett Bay Estuary Program (NBEP) is a small program buried deep within RIDEM's bureaucracy. The Implementation Committee designed to oversee implementation has been ineffective and meets infrequently. The NBEP has had difficulty maintaining active stakeholder involvement over the last decade. The original NBP partners no longer implement the CCMP because the priorities of most federal, state, and local agencies have changed dramatically over the last decade. "Discussions" have been underway about developing a new CCMP or surrogate policy document for years. However, two years after the Narragansett Bay Summit in 2000, there is still little interest by any of the major stakeholders in developing a new CCMP. For all intents and purposes, the only remnant of the original NBP is the small program office housed in RIDEM and its staff now decide how to spend EPA's limited implementation funding.

Furthermore, Rhode Island has never contributed any dedicated funding or FTEs to support CCMP implementation, a strong indicator of the priority the program has within the RIDEM. If anything, RIDEM has used the NEP's implementation funding to address other agency needs and to implement other EPA programs (e.g., Section 319). Given the state's current budgetary and political climate, it is unlikely that significant resources for a new planning effort are forthcoming. It is also unlikely that the current level of EPA implementation funding could support a new planning effort. If the EPA allowed the NBEP to reconvene the management conference and develop a new plan, it is questionable whether some of the major stakeholders would participate in the process (Imperial, McGee, & Hennessey, 2000).

The EPA's response to these findings was less than encouraging. Their position was that without the NBEP even less would be accomplished. While this may be true, it is also true that the EPA could give \$300,000 a year to any of the major stakeholders (e.g., RIDEM, CRMC, RIDOP, Save the Bay, etc.) and ask them to undertake activities, apply for grant funds, and participate in and support other activities that affect Narragansett Bay and a set of "accomplishments" would result. Moreover, when asked about the standards used to monitor their progress, respondents in the estuary programs suggested that the EPA is satisfied as long as an estuary program is visible, contributes to the "picture of the NEP as a whole", and the program does not show a total disregard for the NEP requirements or misuse its funding.⁶ Some even suggested that the NEP is nothing more than "green pork" – it provides EPA with a lot of visibility at relatively low cost. While this undoubtedly is true, it creates an important accountability problem. The EPA claims credit for an estuary program's successes but escapes blame for failures by claiming that CCMP implementation is a state and local responsibility.

There is little reason to believe that these policy issues will be addressed in a timely fashion. A substantive CWA reauthorization or significant modifications in the NEP's enabling statute are not imminent. The EPA has been "discussing" and "talking about" when an estuary program ends or should be required to update its CCMP for some time but has chosen to maintain the status quo. Meanwhile, with every passing day this issue grows in importance and soon a growing number of estuary programs will find themselves with outdated CCMPs. While

the EPA's Biennial Review process and annual work plans provide some impetus for improving CCMP implementation, the EPA tends to highlight a few issues and suggests a few minor changes to complete by its next Biennial Review. These processes are not a substitute for a viable CCMP or measurable goals and policies.

We find the current status quo condition to be counterproductive. It assumes that is somehow it is better to have a bad program like the NBEP than no program at all. Given the limited federal funding available to address coastal environmental problems, it is inappropriate to waste funds on "random acts of environmental kindness" or provide funds to estuary programs that are not implementing their CCMPs. It also punishes programs like Tampa Bay and Tillamook Bay that could use this limited funding much more effectively. Having a program like the NBEP remain in place in perpetuity may also be counterproductive from the standpoint of enhancing watershed governance. Its existence serves to inhibit the cycles of planning that proved to be important in improving watershed governance in the other three watersheds.

The status quo also serves to prolong the inevitable decision about the NEP's future. If the NEP was designed to serve as a demonstration program, then perhaps the effort has outlived its usefulness. If this is the case, many of the issues related to improving CCMP implementation noted in previous sections are largely irrelevant and it is time to start phasing out older estuary programs. After all, if implementation is largely a state and local government responsibility, these officials can still decide to continue their implementation efforts or perhaps start a new watershed planning effort of their own.

Conversely, if the true purpose of the NEP was to protect and restore estuaries of national significance, then the EPA could open up another Governor's Nomination Process and allow the Tier I and II programs the opportunity to develop another CCMP or exit the program. EPA officials noted that the management conference can be terminated and reconvened under current regulations but an additional appropriation to support the new planning efforts would be needed. EPA officials even suggested that there might be the potential to double the size of the NEP given previous interest. Lake Pontchartrain Basin in Louisiana and Mississippi was even added as an "estuary of national significance" in 2000 (Pub .L. 106 – 457). A major expansion of the NEP would be consistent with the view that the federal government has an important role in developing and implementing a CCMP.

A third possibility is that the long overdue CWA reauthorization results in a new national watershed planning program, which hopefully subsumes and builds upon lessons learned by the NEP. While it is unclear which future is desirable or appropriate, these policy questions must be addressed at some point.

Summary and Conclusions

Based on our analysis, it is appropriate to revisit some of our earlier conclusions about the NEP's strengths and weaknesses (Imperial & Hennessey, 1996). We still believe that one of the NEP's strengths is that it offers a flexible, ecosystem-based approach to addressing environmental problems at the watershed level. It is also clear that the physical, social, cultural, economic, institutional, and political environment have a strong influence on the planning and

implementation process. The implication of this finding is that it suggests that it is appropriate for implementation priorities to be set at the watershed level. Moreover, while it was important to understand how ecological systems function, it is equally important to understand “the ecology of governance.” That is, the tradeoffs among problems (not just environmental problems) and how institutions addressing these problems function and interact. This information is critical because it helps practitioners identify appropriate ways to enhance watershed governance and improve environmental conditions.

Another strength is that the NEP provides a role for science in watershed governance decisions (Imperial & Hennessey, 1996). However, for science to inform policy it must be “nested” in a decision-making process. Scientific research is of little use if the information generated is not salient to decisionmakers. Moreover, while scientific research rarely tells decisionmakers exactly what to do, it does help define problems, shapes debate on policy alternatives, and often provides a general enlightenment function that can enhance policy-oriented learning.

Unfortunately, it appears that the proper use of science remains a problem for many estuary programs. There remains a disturbing tendency to fund “state of the art” computer models or scientific studies. While these projects may result in impressive presentations at the annual program manager’s meeting or articles in professional journals, they often fail to provide the information decisionmakers really need. The estuary programs also tend to maintain an active research agenda during the implementation phase even though research suggests that science tends to have little influence on this stage of the policy process (Healey & Hennessey, 1994). While the research may prove useful in the future, it rarely has a direct influence on CCMP implementation. It also utilizes limited resources that could otherwise be devoted to implementation activities.

There can also be no doubt that public participation and consensus-based decision making are important characteristics of the NEP’s planning process. Respondents often pointed to consensus decision making as being “a necessary evil” in that it took a long time and created conflict but it also produced relationships and trust that enhanced implementation.

The NEP also promotes learning and helped improve the problem solving capacity in these watersheds. While there is clearly room for improvement, the NEP’s design and use of demonstration projects facilitates learning both within and across the estuary programs. There is also a great potential for other watershed efforts to learn from the NEP’s experiences if the EPA made this a greater priority. The NEP also improved the capacity for watershed governance in the four watersheds. In less-developed institutional environments such as the Inland Bays and Tillamook Bay, the estuary program improved the local capacity for addressing watershed problems. In well-developed institutional environments, the estuary program performed other capacity building functions. In Narragansett Bay, the NBEP enhanced the RIDEM’s ability to participate in collaborative projects and implement some of its programs. In Tampa Bay, the TBEP improved watershed governance by integrating decision making and coordinating implementation efforts.

What has become increasingly clear since our earlier study is that watershed management requires advanced governance and there is no substitute for a well-managed program. Careful consideration must be given to the committee structure and rules governing access (i.e., who gets to decide), how things are decided (e.g., what does consensus mean), what can be decided, and what the consequences of decisions are. Issues such as program leadership, staffing and recruitment, personnel management, budgeting, contracting, and grants management also had an important influence on planning and implementation activities. Administering these programs also proved to be a complex endeavor requiring a formidable set of professional skills to manage activities and coordinate intergovernmental relationships. For example, serious problems resulted in Tillamook Bay during the early stages of the planning process due to an inexperienced program director and poor staffing decisions. Conversely, many Tampa Bay respondents pointed to their director's experience as being an important factor contributing to the program's success.

We also underestimated the severity of the obstacles confronting CCMP implementation. The program clearly emphasizes planning, public participation, and scientific research at the expense of implementation. During the implementation process, a sizable portion of the EPA's limited implementation funding continues to support an outreach coordinator and a staff scientist. Our criticism is not that these functions are unnecessary during CCMP implementation – in a perfect world they are. The problem is that if you only have \$300,000 per year, these limited resources are better spent on staff who can write grant proposals as well as organize, manage, and participate in implementation efforts – activities with greater potential to improve environmental conditions and enhance watershed governance.

It is also clear that the NEP's strategy of "leveraging" other funding sources is unlikely to meet with significant success given the scope of activities recommended in CCMPs and the limitations placed on existing funding sources. Moreover, given the magnitude of the problems in these estuaries of national significance, a sizable funding source is warranted. A stable and flexible revenue source, however, is equally important. It allows an estuary program to plan and budget with confidence and enables participants to shift their implementation efforts as warranted (Imperial & Hennessey, 2000; Gale, et al., 1993).

The NEP is at a critical point in its development now that all 28 programs are implementing their CCMPs. While these implementation efforts will undoubtedly result in numerous "accomplishments," this does not necessarily equate to implementation "success." It has proven difficult for many estuary programs to move beyond "random acts of environmental kindness" to systematically implement projects that improve environmental conditions or enhance watershed governance. If estuary programs are to continue indefinitely, then major changes are needed. At a minimum, Congress and the EPA must decide when an estuary program ends. If it will not end, then some process that ensures CCMPs are updated and revised or that a comparable set of measurable goals, policies, or objectives is developed. The EPA must also decide how its limited implementation funding is spent and greater attention must be given to ensure that estuary programs systematically implement projects that offer some possibility of cumulatively improving environmental conditions.

In the not too distant future, a growing number of estuary programs are going to find themselves in a situation similar to Narragansett Bay and Inland Bays. It is incumbent upon Congress and the EPA to address the aforementioned policy issues. Otherwise, limited implementation funding will be wasted on random acts of environmental kindness. It will become impossible to hold estuary programs accountable for their actions. Constituency involvement and support is likely to wane. Moreover, the lack of any perceptible progress may erode the political support that estuary programs worked so hard to develop.

We would hate to see a program that started with such promise begin suffering the sort of slow agonizing death that is sure to result if the current status quo situation prevails. Instead, we hope that Congress and EPA find ways to address the NEP's shortcomings, reinvigorate estuary programs, and provide other coastal watersheds with an opportunity to develop similar programs designed to improve environmental conditions and enhance watershed governance.

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Endnotes

¹ No Tier V program was selected because we wanted programs that completed the planning process and had at least some implementation experience.

² We have also been involved to varying degrees with an estuary program. Mark T. Imperial worked for the University of Rhode Island's (URI's) Coastal Resources Center (CRC) from 1989 to 1991 where he researched the NEP and had some involvement with the Narragansett Bay Project (NBP). He also worked for the Coastal Resources Management Council (CRMC) from 1991 to 1994 where he was also involved with the NBP. Imperial also worked as a consultant for the CRC on two projects, including a project funded by EPA and the U.S. Agency for International Development (AID) examining the NEP (Imperial, 1995). Tim Hennessey has also had periodic involvement with various activities of the Rhode Island Department of Environmental Management (RIDEM) and the NBP over the last decade.

³ Interviewing a wide range of individuals representing a wide range of organizations is important. A recent study of watershed partnerships indicates that information obtained from watershed coordinators is often systematically biased towards success. It also found that the differences between participants and nonparticipants are not nearly as great as the differences between the coordinators and everyone else (Leach, 2002).

⁴ Rather than sign the agreement, the EPA and the COE signed MOUs as adjinders to the IA. The COE was willing to sign the IA, however, the EPA's legal counsel resisted. Many respondents were bewildered by this and failed to understand the EPA's logic. Rather than embarrass the EPA, the two federal "partners" signed MOUs.

⁵ We are grateful to the respondents in the Tillamook Bay that crystallized this problem for us. This is the terminology they use to discuss the problem in addressing the NPS and habitat problems affecting salmon.

⁶ Only one estuary program, the Albermarle-Pamlico Estuarine Study (APES), received a failing grade during the EPA's Biennial Review process. They lost one year of implementation funding after they agreed to changes specified by the EPA.

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Appendix A: Summary of the Four Case Study Watersheds

	Narragansett Bay	Inland Bays	Tampa Bay	Tillamook Bay
Physical Environment				
Water body	Narragansett Bay (RI, MA)	Inland Bays (DE)	Tampa Bay (FL)	Tillamook Bay (OR)
Size of watershed	1,600 square miles	300 square miles	2,300 square miles	570 square miles
Population	Over 2,000,000	131,000 ^a	Over 2,000,000	17,000
Focal problem(s)	None	Nutrient loading	Nutrient loading & seagrass loss	Shellfish closures, sedimentation, & endangered species
Sources/causes of problem(s)	Diverse sources & causes	Chicken farms, OSDS, point sources, & stormwater	nutrient loading from diverse sources & habitat loss	bacterial loading & sedimentation from agricult., forestry, & urban sources
Planning Process				
Duration	1985 – 1993	1989 - 1995	1990 – 1998	1993 – 1999
Driving force	Congress	State officials	State and regional agencies	State agencies & Tillamook County
Program	EPA’s National Estuary Program	EPA’s National Estuary Program	EPA’s National Estuary Program	EPA’s National Estuary Program
Jurisdictional complexity	High	Low	Medium – High	Low – Medium
Level of conflict	High.	Medium	Low	Low
Implementation Activities				
Coordinating Agency	RI Dept. of Env'tl. Mgt.	Center for the Inland Bays	Tampa Bay Estuary Program	Till. Cnty. Perform. Partnership
Organizational form	Line program in RIDEM	Nonprofit Organization	Intergovernmental partnership	Intergovernmental partnership
Level of conflict	Low	Low	Low	Low
Shared policies/regulations	No	No	Yes	Yes
Primary Funding Sources	Federal grants	Federal Grants	Federal, state, regional, & local agencies	Federal Grants; OR Dept. of Forestry
Funding amount/stability	Low/Low	Low/Medium	High/High	Medium/Medium

Note: All assessments of high, medium and low are based on comparisons among the six programs. ^a Measured at the county level