

Retrospective Governance Analysis for the Narragansett Bay Watershed and Airshed Project

An Example of How To Conduct A Governance Analysis in a New or Expanded Area

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Applying the Governance Analysis to the Southeast New England Program (SNEP) for Coastal Watershed Restoration

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Introduction

This document describes how a governance analysis and related methods could be applied by the Southeast New England Program for Coastal Watershed Restoration Program (SNEP). This governance framework is based on the methodology developed by Lighthouse Consulting Group, Inc. (Lighthouse) as part of the Retrospective Governance Analysis for the Narragansett Bay Watershed and Airshed Project funded by the Environmental Protection Agency (EPA), Atlantic Ecology Division (AED), Order number: EP-13-D-000271.

The Retrospective Governance Analysis for the Narragansett Bay Watershed and Airshed Project synthesized existing data, information and knowledge:

1. Identifying key eras of governance at multiple scales of governance (federal, regional, state, municipal) from 1850 to the present, affecting the trajectory of change in the Narragansett Bay watershed; and
2. Documenting examples of institutional learning through successive federal and state policy cycles, in ways that are related to subsequent environmental planning initiatives.

This resulted in the following work products:

1. Narragansett Bay Watershed History Timeline (<http://narragansettwatershedhistory.org/>): An online timeline that captures key milestone events from 1896 to the present that affect the governance of the Narragansett Bay Watershed.
2. Eleven Governance Stories in the Narragansett Bay Watershed that were used to frame the analysis with real examples of governance successes and failures.
3. Detailed Timeline of Actions and Contextual Descriptions: an extensive Excel timeline that covers the time period of 1840 to the present used to develop summary stories and analysis, organized by the 11 governance stories.
4. Master Bibliography: approximately 1,375 documents containing 125,000 pages of material with relevant bibliographic entries with links to the master source, as feasible, and searchable on keywords.
5. Governance Framework: a written analysis on the governance response in the Narragansett Bay watershed.

¹ <https://www.epa.gov/snecwrp/funding-opportunities-southeast-new-england-coastal-watershed-restoration-program>

6. Summary of Methods and Lessons Learned: a concluding report that concisely documents the framework and processes used in developing the framework.

This document has been produced as an extension of the original agreement to ensure that the final documents produced in Phase I are user-friendly, accessible, and replicable in other watersheds

Why understanding the governance history is important

New England is a unique region. It has more than a century of experience in its states searching for ways to identify and work together on issues of common concern related to fisheries, water resources, air quality and land management. Some mechanisms have endured. For example, while the New England Interstate Water Pollution Control Commission has been continually involved since the late 1940s, others have emerged to serve a unifying governance purpose for only a brief period of time.

The elusive search for unifying mechanisms to address regional environmental concerns has been both helped and hindered by federal policy. The New England River Basins Commission was forcibly disbanded just a few years after it issued the last comprehensive regional study and plan for Southern New England in 1975. On the other hand, federal policy supported regional watershed and ecosystem management efforts in other ways. This included establishing the National Estuary Program, designating the Taunton River as a Wild and Scenic River, creating the Blackstone River Valley Heritage Corridor, setting bi-state total maximum daily loads, and creating the Northeast Regional Ocean Council as a partnership of state and federal agencies.

The Southeast New England Region also has state and sub-regional entities that guide land planning, development and decisions on environmental issues. Examples include the Rhode Island Statewide Planning Program, the Southeastern Regional Planning and Economic Development District, and the Cape Cod Commission. Numerous watershed associations and regional groups—for example, Save The Bay, the Blackstone River Coalition, the Taunton River Stewardship Council, and the Wildlands Trust—work to unify the efforts of municipalities, citizens and other stakeholders to protect and restore estuaries, rivers, wetlands and other environments.

Accordingly, when viewed over time, governance networks for the SNEP have formed, disappeared, and experienced profound change in response to new programs, problems, capacities, funding opportunities and leaders at the federal, state, local and regional levels. The power of the historical perspective is that it demonstrates that when viewed over a long period of time, environmental governance of the SNEP region is constantly evolving as new institutions, programs and planning processes are created or reconfigured, while others cease to exist. The governance framework developed by Lighthouse uses the analysis of these attempts to create or reconfigure governance networks to provide key insights into what makes the governance system healthy (or not) over the different historical periods, and it identifies the attributes of healthy

network governance processes. Moreover, the framework used to describe the changing patterns of intergovernmental relations in the watershed can be used to describe the evolution of governance efforts in other watershed settings. It can also be used to understand how governance networks for other environmental policies have evolved. This can be applied in today's context to reveal network leverage points and clarify what it means for a given actor to be effective in carrying out their chosen role in what otherwise appears, at times, to be unpredictable bursts of extraordinary effort and attention on an issue followed by long periods of seeming inaction—as the many different actors work behind the scenes to evolve and adjust existing governance systems to better deal with emerging concerns.

How this methodology can be applied to SNEP and other watersheds or programs

As an example of how to apply this approach to other watersheds, this document explains how to develop a timeline and bibliography and to create a governance framework for the SNEP based on the EPA-funded process already completed in the Narragansett Bay watershed. It would involve working with SNEP to identify additional important stories and events related to land use and water pollution control that occurred in the geographic area encompassed by the SNEP and then applying the methodology developed by Lighthouse. This effort would include completing the following tasks.

Task 1: Identify additional pollution control stories

The first task would be to work with SNEP staff to identify additional governance narratives that would guide data collection and expand the analysis to include the broader geographic region encompassed by the SNEP. These governance narratives would primarily be located outside of the Narragansett Bay watershed and focused on watershed restoration as feasible. Possible narratives could include:

- The Wood-Pawcatuck River system, which straddles the Rhode Island and Connecticut border.
- A comparison of regional approaches to the management of on-site sewage disposal systems in the Salt Ponds, Narrow River and Buzzards Bay watersheds.
- The New Bedford Harbor water pollution control and Superfund cleanup efforts.
- The development and implementation of the Buzzards Bay Project.
- The emergence of the Cape Cod Commission, its role in guiding development, and the revisions of its Section 208 Plan.
- The evolving Massachusetts watershed approach (“watershed management roulette”).
- A comparison of the different governance approaches in the Southern New England National Estuary Programs—i.e., that of Long Island Sound, Narragansett Bay, Buzzards Bay and the Massachusetts Bays.
- A look at the leaders and governance networks over time in Southeast New England.

The analysis could also include narratives like the transition from the Metropolitan District Commission, which was created in 1919 to manage parks, waterworks and sewage, to the establishment of the Massachusetts Water Resources Authority and the effects on some municipalities in the Narragansett Bay Watershed. Finally, it is possible to expand the existing narratives to include other parts of the SNEP region that had originally been written for the Narragansett Bay watershed. The goal of these additional narratives is to broaden data collection and build upon the existing timeline such that it reflects the broader SNEP region rather than just the Narragansett Bay watershed.

Task 2: Data collection

The selection of the governance narratives is important because it drives data collection. Data collection would largely consist of secondary information available through libraries, online catalogs, database and journal subscriptions, searchable online newspaper archives (*Providence Journal*, *Boston Globe*, *The Standard-Times*, *The Herald News*, *Cape Cod Times*, *The Barnstable Patriot*), special document collections at the University of Rhode Island and other libraries, and the archives of government agencies and nongovernmental organizations located in the SNEP region. Materials include books, monographs, journal articles, government plans and reports, legislation, websites, policy documents and digital newspaper articles. Broader historical documents about the colonial period in Connecticut, Rhode Island and Massachusetts would be used to provide additional historical context. These materials would be digitized and processed using optical character recognition technology such that the material is searchable based on keyword searches. These materials would then be added to the fully searchable collection of 1,375 documents containing 125,000 pages of materials related to the Narragansett Bay watershed to create a master bibliography related to watershed governance efforts in the SNEP region. This effort would also provide the opportunity to address any perceived deficiencies with the current bibliographic database or allow additional enhancements to occur to make these materials more usable to EPA and the public.

Social network analysis would be used to visualize the evolution over time of the governance networks for the Narragansett Bay, Buzzards Bay, Cape Cod and Massachusetts Bays watersheds. There are good records, some dating to the 1960s, of participants in task forces, commissions, public meetings and planning efforts. This is especially true after the early 1970s with the introduction of open meeting law requirements and greatly expanded outreach programs to engage citizens and foster coordination and collaboration across agencies responsible for setting and implementing policy. Participant lists, involved agency staff, plan or policy authorship, and technical support could be identified for key meetings and collected documents that have occurred in the watersheds, which are referred to as “events” in affiliation network studies. These events and their participants could be documented over time. A matrix would then be created, listing names in one column and every “event” with which they were affiliated during the timespan of the study, across the subsequent columns. Network analysis software would be used to trace the role of individuals over time, via the events, locations and roles they play. This, in turn, can be used to understand leadership patterns or how information might have been shared amongst groups within the region, or the extent to which watershed management efforts were/are

fragmented and isolated from each other. The relative power of meetings can be measured by examining the network characteristics of the attendees, as well as the change in engagement or leadership roles of individuals over time. This software was not applied in the Narragansett Bay effort, but this specific approach to network analysis would be an important addition for SNEP given its wide geographic scope and interest in bi-state watershed efforts.

Task 3: Timeline and narrative development

Key timeline and milestone events that emerged as part of data collection covering the SNEP region could not only be used as part of the specific narrative of that region, but also be added to the existing timeline/milestones database already developed as part of the Retrospective Governance Analysis for the Narragansett Bay Watershed and Airshed Project. A series of key word searches would then be used to code and analyze these digital materials. Key word searches would be used to identify key events associated with the development of each narrative. The qualitative analysis of these materials would eventually produce a detailed timeline for each narrative. Further qualitative analysis within and across narratives would be used to identify themes linked to the governance framework. As coding and cross-case analysis continued, additional themes would be identified and events would continue to be added to the timeline. Reflective essays would be developed to make sense of each governance narrative and to further facilitate cross-case comparisons based on the governance framework developed by Lighthouse. The individual timelines could then be combined into the earlier timelines developed by Lighthouse.

Task 4: Developing narratives into more detailed case studies

The original report produced by Lighthouse was informed by 11 governance narratives or storylines that weave through the final report:

- "A Sensible Approach to a Complicated Problem" (Walter Shea's 1947 Plan).
- Before and After the Comprehensive Conservation and Management Plan for the Narragansett Bay Estuary.
- The Blackstone River: Two Centuries of Conflict and Cooperation in Watershed Management and Narragansett Bay.
- The Decade of Environmental Planning: Southern New England Study (Level B plan) and the New England River Basins Commission Story.
- Watershed Stewardship for the Taunton River and Mount Hope Bay.
- The Evolution of Open Space and Regional Land Capability Planning.
- Section 208 Comprehensive Water Quality Management.
- Total Maximum Daily Loads and Nutrient controls for Narragansett Bay.
- The Mercury Total Daily Maximum Loads and Metals in Narragansett Bay.

- Prelude and Epilogue to the 2003 Fish Kill in Greenwich Bay.
- Field's Point and Narragansett Bay Commission: A Tale of Two Successes.

The additional work would produce five or six narratives focused on the broader region that would drive the timeline development and provide examples that support the governance framework. To make the lessons from this long history of watershed governance more accessible to decision makers and the public, some of these narratives could be combined and expanded into four to six self-contained case studies that describe each case in terms of the governance framework. Some case studies would highlight a particular time period and the patterns of intergovernmental relations associated with that period. Others would allow the application of the complete framework to the case study because its history dates back to the early 1900s. Each case could also include lessons and advice to practitioners on sustaining the healthy and useful life of watershed governance efforts. Potential candidates for detailed case studies include:

- Fields Point and the Development of the Narragansett Bay Commission: An Urban Water Pollution Control Success Story.
- New Bedford Harbor and the Legacy of Contaminated Sediments.
- A Half-Century of Large-Scale Regional Approaches to Water Pollution Control: From a River Basin Commission to the National Estuary Program.
- Innovative Local Level Approaches to the Management of On-site Sewage Disposal Systems in the Salt Ponds, Narrow River, Greenwich Bay and Buzzards Bay Watersheds.
- A Comparison of the Approaches for Engaging Municipalities in Regional Issues of Land Use and Water Pollution Related to Estuaries Taken by National Estuary Programs, Regional Planning Agencies, and Civil Society Organizations.

The project team would work with EPA and SNEP staff to determine which case studies within the SNEP region would be most appropriate. A good case study should follow at least one iteration of the policy cycle, describing the origin of the problem, the struggle to characterize it and develop viable actions, the factors leading to a policy choice, the struggle for implementation, and the reassessment and evaluation of the effort. This story should be placed within the broader context of the streams of problems, policies and politics within a municipality, state and region, to help reveal how an environmental issue is able to draw upon the resources available in the network of governance to gain attention, political support and the resources needed to carry it out. The network of actors will shift over the cycle. Gaining a critical mass of public attention for an issue gives way to a focus on selecting and advocating for viable solutions. Implementation is in effect another world of actors, especially for solutions that require collaboration among and compliance by public entities, citizens and firms who need to make financial investments or conform to regulations. As time goes on, evaluation and assessment close the loop. An unpopular or poorly executed watershed policy may be reversed or terminated. Or adaptations required to meet its overall objective. A good case study will reveal how these challenges are met, and in the process validate or suggest modifications to the characteristics of a healthy governance network.

Each detailed case study could be developed as a standalone document that would be available for public distribution (e.g., as a report, journal article, web-published document, etc.). A shorter version of the case study would then be included as part of the final report.

Task 5: Final report

The final step in this process would be to develop a final analysis oriented around applying the framework and would include the case study material (or a shortened version thereof). The report would begin with an introduction that describes the project and the region covered by the report. Chapter 2 would describe the framework and be similar in structure to the current report but include examples from across the region. Chapters 3-6 would be the case studies applying the framework. The goal of the cases would be to demonstrate how the application of the framework adds richness that helps in better understanding watershed governance. Collectively, the cases would also document the history of land use and water pollution control across the SNEP region. Chapter 7 would be a summary of lessons learned which build on the factors that contribute to sustaining healthy and useful watershed governance efforts identified in the recent Lighthouse report. Chapter 8 would consist of a summary and conclusions.

Final Deliverables

This project would produce the following deliverables:

- Expanded timeline covering significant events associated with the governance of water pollution control issues in the SNEP region.
- A searchable bibliography of digitized materials documenting the history of watershed governance in the SNEP region.
- Five to six additional governance narratives for the SNEP region related to land use and water quality governance episodes located in areas outside of and/or overlapping with the Narragansett Bay watershed.
- Four to six case studies that demonstrate the application of the governance framework developed by Lighthouse.
- A narrative and visual depictions of the nature of leadership, social connections, and the likely influence and information flow among sections of the Southeastern New England regional governance network over time.
- A final report that applies the governance framework developed by Lighthouse to the broader region encompassed by SNEP.

Scalability for SNEP

The advantage of our approach to applying the governance framework to the larger region encompassed by the SNEP is that it is scalable based on resource availability. For example, any new analysis would certainly improve upon the previous work by Lighthouse—using the lessons learned in building the timeline and bibliography to make the process more efficient and effective. This includes the value of setting out the evolution of the federal, regional and state legal and administrative frameworks and organization and ensuring there is meticulous tracking of timeline entries and quotations. While completing this project, Lighthouse could make similar improvements to fill gaps and enhance the usability of the current bibliography and timeline materials. The fact that the governance framework is already developed only enhances the ability to develop governance narratives. This includes searching the base of existing materials using new combinations of keywords to better highlight how the attributes of effective network governance operate in particular episodes and cases—in particular, highlighting the roles of different types of actors in problem analysis, policy formulation, decision making, implementation and evaluation. This allows for building upon the existing work done is assessing governance in the Narragansett Bay watershed while simultaneously incorporating new materials for the larger region covered by SNEP. The development of the case studies proposed in this scope of work would also allow for developing in more depth those governance narratives which are of particular interest and usefulness to and which better meet the needs of EPA. Finally, the additional governance narratives, cases, and associated timeline and bibliographic materials also could be developed incrementally—i.e., over a period of time and as resources become available.

Summary

By applying this analysis in their watersheds, watershed managers will gain critical insights into the attributes that make the governance system healthy (or not) over the different historical periods. This can be used in today's context to advance restoration efforts by revealing network leverage points and to clarify what it means for a given actor to be effective in carrying out their chosen role in what, at times, may be an unpredictable landscape. When matched with other, more traditional analysis such as the study of the physical or historical changes in the watershed area, managers are provided with a full view of how the area has responded, both positively and negatively, to change. Such historical insight is valuable for informing future management cycles.