Effectiveness of Environmental Enforcement in Rhode Island: Protection of Water Quality

By

Jessica Almendarez

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SIGNATURE: _____ DATE: _____

Caroline Karp
Senior Lecturer
Brown University

Table of Contents

EXECUTIVE SUMMARY

There is compelling evidence that federal environmental enforcement efforts declined during the administration of President George W. Bush (Eilperin). I selected the Blackstone River as a case study to evaluate trends in federal and state enforcement of the Clean Water Act from 1999-2009, which covers the end of the Clinton Administration, the entire Bush Administration and the start of the Obama Administration. The Blackstone River presents a unique case, running through Massachusetts and Rhode Island. The Rhode Island Department of Environmental Management (RIDEM) regulates the Rhode Island side of the River; the Massachusetts Department of Environmental Management (MADEP) and EPA Region 1 govern the Massachusetts side. Enforcement indicators include: ratio of complaints received to complaint investigations, water quality trends in the river from 305(b) and 303(d) reports, exceedances of NPDES permit discharge limits, compliance history of direct municipal and industrial dischargers, and ratio of penalties assessed to collected. Analysis was based on federal and state databases maintained by RIDEM and EPA, supplemented by interviews with key people involved in environmental enforcement in Rhode Island. Results suggest that inspections and investigations in the RIDEM water division are complaint driven with overall enforcement action decreasing from 2001. Ambient water quality of the river was evaluated via 305(b) and 303(d) reports, which are published every two years. The Blackstone River was reported as %100 impaired in 2008. Reportable noncompliance and effluent violations increased for 18 facilities permitted to discharge to the river. The most frequent effluent violations were suspended solids, fecal coliform, pH, and metals. Funding, staffing, and the directive of government (both state and federal) impact the regulation of point sources. Another comparison yielded a striking difference between RIDEM's water division's penalties assessed and collected, with over a million dollars in uncollected penalties from 1999 to 2008. GAO and OIG recommend that EPA improve reporting of penalties. Federal and state enforcement data are often fragmented and difficult to find. Federal and state agencies should improve enforcement and compliance databases in order to increase transparency and accountability. With environmental enforcement at the forefront of President Obama's administration, improved enforcement and compliance efforts should be expected.

MAP OF THE BLACKSTONE

CHAPTER 1: INTRODUCTION

STATEMENT OF THE PROBLEM

During the administration of President George W. Bush (2001-2009), prosecution of civil and criminal environmental cases declined. Regulation directly relating to water pollution paralleled this slump (Borenstein 2003). Efforts during this period shifted from federal regulation to the states, corporations, and non-governmental organizations. I will explore this federalism trend with respect to enforcement and consequences for the environment, with a focus on the Blackstone River in New England. My overarching goal is to verify whether the level of water quality enforcement responds to the agenda of the government directing it. My hypothesis is that there will be a striking difference between amounts assessed/collected, as well as inability for regulatory agencies to crack down on all polluters in to the state's water systems. The correlation is often attributed to shortage of personnel, but I want to confirm whether or not this is the direct causation. I hypothesize that noncompliance increased during the Bush administration as a result of reduced enforcement.

METHODS

In order to test this hypothesis, I evaluate existing studies of enforcement and compliance of the Clean Water Act between the reporting years 1999 – 2009. I also:

- Study trends in overall enforcement of water quality-related laws by comparing administrative, civil, and criminal Clean Water Act cases in Rhode Island on a year by year basis.
- Evaluate enforcement efforts by the United States Environmental Protection Agency (USEPA), Rhode Island Department of Environmental Management (RIDEM), and the Narragansett Bay Commission (NBC) on the Blackstone River as well as Massachusetts Department of Environmental Protection (MADEP), and Blackstone River Coalition (BRC), from the Massachusetts side of the river.
- Evaluate water quality trends in the Blackstone River using the 305(b) reports from Rhode Island and Massachusetts.
- Compare overall water quality of the Blackstone during these years to effluent exceedences of permitted facilities.
- Compare penalties assessed and collected in both the Rhode Island and Massachusetts sections of the Blackstone River.
- Interview key enforcement officials in the Rhode Island Attorney General's Office, USEPA, RIDEM, and NGOs such as the John H. Chafee Blackstone River Valley Heritage Corridor Commission.
- Evaluate which enforcement strategies are viewed as most effective.

DATA ANALYSIS

Initially I want to determine what percent of municipal and direct industrial dischargers are in compliance with their RIPDES and NPDES permits, based on

evaluating a subset of dischargers to the Blackstone River. This information will tell me whether there is a trend in compliance, or lack thereof, which corresponds to different political administrations. I also want to see if there is a trend in water quality exceedences in the Blackstone River itself. If there are trends in compliance with discharge limits or receiving water quality, I then have to determine whether these trends are related to enforcement efforts. I have to examine the obstacles arising from USEPA/MADEP and RIDEM coordination, and evaluate efforts within RIDEM and NBC to overcome asserted funding and staffing limitations. The information available is fragmented and I wish to integrate statistical data and policy efforts. After collecting monetary assessments of penalties from internet databases, I will graph the differences in assessed versus collected penalties. I will also graph the trend in certain effluent exceedences from a select number of permitted facilities.

FURTHER STUDIES

I hope to find that environmental regulation in Rhode Island between 1999 and 2009 resulted in improved water quality and, if possible, suggest methods for further improving water quality through integrated policy approaches. The Clean Water Act drastically repaired the state of the nation's waters, and in most cases, it is nonpoint source discharges and small commercial sources of pollution we are dealing with. Reviewing the underlying legislation will help to understand the direction of current enforcement efforts in Rhode Island.

CHAPTER 2: LITERATURE REVIEW

The Clean Water Act, 33 U.S.C. §1251 et seq. (1972)

BRIEF HISTORY

Typically, the formation of environmental regulation reacts to a disaster, and then molds over time through administrative and judicial action. Media coverage of disastrous pollution events, such as the Cuyahoga River in Ohio catching on fire in 1969, led to the restructuring of water quality regulation in the United States. During Richard Nixon's presidency (1969-1974), Congress introduced environmental legislation for clean air, clean water, national parks, endangered species, pesticides, coastal protection, and ocean dumping restrictions (Flippen 277). The Federal Water Pollution Control Act of 1948 was replaced by the federal Clean Water Act (CWA) in 1972. In 1976, testimony and graphic presentations from the disastrous Kepone case, involving a pesticide used by Allied Chemical Corporation, precipitated reform of the federal act again (Goldfarb 1995). The CWA of 1977 forms the basis of regulating discharges of pollutants into the navigable waters and defines the current quality standards for the surface waters of the United States.

A new policy in 1987 shifted some control back to the states in terms of capital financing of water pollution control projects when Congress replaced the construction grants program with the Clean Water State Revolving Fund. The Fund provides loans to states for municipal sewer and wastewater treatment plant upgrades, and states must

match federal funds with $1 for every $5, a 20 percent match (USEPA | History). According to the USEPA, the state match and loan repayments resulting from these federal capitalization grants are approaching $40 billion in assets.

Elements of the Act

The aspirant goals of the CWA, as pertinent to this study, are to:

- Restore and maintain the chemical, physical, and biological integrity of the Nation's waters.
- Eliminate discharge of pollutants into navigable waters by 1985;
- Prohibit discharge of toxic pollutants in toxic amounts (33 U.S.C. §1251).

Supplemental goals include:

- Retaining an appropriate standard to provide for protection of fish, shellfish, and wildlife, and for recreation in and on the water, wherever attainable;
- Developing provincial treatment management planning processes to guarantee appropriate control of point-source pollutants;
- Also implementing programs for control of nonpoint sources of pollution (33 U.S.C. §1251).

In order to achieve these goals, Congress directed the Administrator of the USEPA to:

- Administer the Act, unless otherwise expressly stated;
- Encourage States cooperation for the prevention, reduction, and elimination of pollution, and formation of uniform State laws or compacts between states;

- Institute national programs for the prevention, etc., of pollution;
- Facilitate technical services to pollution control agencies and related groups;
- Compile and make available results pertaining to research and alignment with the goals of the Act; establish a clearinghouse which shall provide for the dissemination of reports;
- Make grants to aid in research, training, development, or implementation of pollution prevention, reduction, elimination programs.
- Prepare comprehensive programs for preventing, reducing, or eliminating the pollution of the navigable waters, in cooperation with other Federal agencies, State water pollution control agencies, interstate agencies, and the municipalities and industries involved (33 U.S.C. §1251).

The Act employs a variety of enforcement mechanisms to help achieve compliance, including:

- Requiring the owner or operator of any point source to maintain record of effluent in regard to effluent or pretreatment standards; and installing and using monitoring equipment to compile such reports;
- Permitting the Administrator to authorize a representative to enter and inspect the effluent source, monitoring equipment, or records;
- Notifying an alleged violator, and if not resolved after thirty days, the Administrator shall issue a compliance order or shall bring a civil action; if violations are widespread—the Administrator shall notify the State;
- Imposing a maximum $25,000 per day civil penalty for violation of an order issued by the Administrator. The seriousness of the penalty, economic

benefit resulting from the violation, and other criteria factor into the calculation of the penalty (33 U.S.C. §1251);

There are several ways to understand trends in enforcement and compliance:

- Outcome—whether water quality has been restored, maintained;
- Permit Compliance—whether permittees complied with obligations regarding NPDES permits, reporting, and other standards;
- Agency Effort—have federal, state agencies enforced the law via collecting penalties, requiring permittees to abate the problem;

The goal of this paper is to evaluate federal and state efforts to enforce the CWA in terms of Outcome, Compliance, and Agency Effort and to evaluate whether the political and economic climate may have influenced the and measure the political and economic climate that may have influenced the result.

IMPLICATIONS OF THE ACT

The CWA made it illegal to discharge any pollutant from a point source into navigable waters, unless a permit was obtained (USEPA | History). Point sources, such as industrial, municipal, and other facilities were required to obtain permits from the USEPA's National Pollutant Discharge Elimination System (NPDES). During the early years of the Act, regulatory efforts focused solely on traditional point source discharges and disregarded runoff from streets and other sources. The 1977 amendments granted the USEPA the power to establish wastewater standards for industry, maintained existing requirements to set water quality standards for all contaminants in surface waters, and

funded the construction of sewage treatment plants under the construction grants program (USEPA | History).

The CWA expanded the roles of the USEPA and US Army Corps of Engineers and created a system of cooperative federalism, with implementation responsibilities delegated to state agencies. This system of cooperative federalism involves federal agencies exerting authority over state agencies via use of funding and cross-cutting measures. Wastewater and other discharge standards set by the CWA function by establishing national baseline pollution standards, and more specifically, technology-based standard-setting. In recent years this has included “elements of harm-based standard setting” based on the “Best Available Technology Economically Achievable,” otherwise known as "BAT." These performance standards must be both available and economically achievable among dischargers with similar economic tasks. The consequential technology-based effluent limitations are referred to as TBELs. The CWA experienced revisions in 1981, and in 1987 the construction grants program was replaced with the State Water Revolving Fund (USEPA | History). During this period, focus on “nonpoint” runoff increased and regulation on urban storm sewer systems and construction sites was initiated.

The elements of the Act described above are designed to return waterbodies to fishable and swimmable standards. The language of the CWA is reminiscent of the Public Trust Doctrine, which “incorporates societal protections that go beyond strict human utility” (Plater 1065). The ability of some polluted waterbodies to return to the fishable/swimmable standard is largely attributed to controls over point source dischargers which are in compliance with TBELs. Waterbodies that “can attain the

fishable-swimmable criterion through the operation of TBELs alone are called "effluent-limited" waterbodies, (Notovny). Between 1970 and 1980, the CWA stringently enforced TBELs.

LIMITATIONS OF THE ACT

As stated above, the regulatory system of the CWA incorporates a federal-state relationship to carry out its objectives. In this model, authority descends from the USEPA to the environmental protection agencies, with standards enforcement coming from agencies and designated control authorities, supplemented by citizens via the citizen suit provision (33 U.S.C. §1251). Initiation of national policies implies mandatory, uniform and clearly stated requirements. At the state level, implementation of the federal statute requires corresponding state legislation to establish regulatory authority and administrative agency action to adopt rules and regulations. Moreover, improvements in science and demands by industry lawyers increase the complexity of the CWA's system. Occasionally, efforts to reform the prescriptive-federal standards either seek to improve the efficiency of the program, or are a fraudulent effort to undermine them. Yet the system has a safeguard, if a state agency is systematically undercutting the federal program, the USEPA can rescind State program delegation or citizens may also urge the USEPA to become involved. Citizen intervention has been the major element in shifting social governance in environmental law from the old model (where government agencies hold the sole responsibility for environmental/industry counterbalance) to a pluralistic system where a diversity of interests is actively involved in the legal process. This

assures that the public and individual values are not overwhelmed by economics and industry. This reform shift will be explored later, with regard to political party relationships.

METHODS OF THE ACT

The CWA contains several basic tenets consistent among all environmental regulatory systems: planning and priority-setting, standard-setting, permitting, monitoring and surveillance, enforcement" (Plater 304). The USEPA describes this process as follows (USEPA | History).

In the above image, setting goals and water quality standards (WQS), aligns with the planning and priority-setting, and standard-setting. Under the CWA, water quality standards translate the goals of the Act into measurable benchmarks. These standards apply to the "waters of the United States," defined in the CWA as surface waters—rivers,

lakes, estuaries, coastal waters, and wetlands. Additionally, it implies, interstate waters, intrastate waters used in interstate and/or foreign commerce, tributaries of the preceding two, territorial seas at the cyclical high tide mark, and wetlands adjacent to the aforementioned (USEPA | History).

After establishing appropriate WQS, waterbodies are monitored, typically by the states. Most of the waters in the United States are "not monitored several times a year or even once over a period of several years" due to inadequate funding to carry out ambient monitoring on the expected scale (USEPA | History). This uncertainty must be taken into account when evaluating the level of enforcement. Further uncertainty is factored in for human inference when the instruments measuring quantities of pollutants are not continuously analyzing levels in the water.

305(B) AND 303(D) REPORTS

Under the CWA, States must report on the State of the State's Waters every two years, and produce a list of "impaired waters" that are not meeting the State's designated uses.[1] A waterbody not meeting the stated WQS is considered "impaired" and is added to the "303(d) list," as required by the CWA. The 303(d) list includes both potential and current impaired waterbodies. The list emphasizes waters damaged by "pollutants," based on direct evidence of impairment, evidence that discharge standards are not being met, and/or computer modeling of waterbodies or (USEPA | History). Once placed on the 303(d) list, the waterbody is under control of the state, federal or territorial agency, which is then responsible for strategizing an attainment plan.

[1] 33 U.S.C. §1251, 305(b) and 303(d).

NPDES AND OTHER PERMITS

Section 402 of the Act requires discharging facilities to obtain a permit through the National Pollutant Discharge Elimination System (NPDES). The USEPA authorized 44 states to administer their own permitting programs and the remaining six states function relegate to the NPDES. The permit sets discharge limits on various pollutants. Although many states issue the permits, the USEPA "continues to review state water quality standards, retains authority to object the issuance of particular permits…and enforces the terms of individual NPDES permits when a State has failed to institute enforcement proceedings" (Save the Valley v. USEPA). Therefore, NPDES programs do not completely remove the USEPA of monitoring duties.

In addition to NPDES permits, states must submit certification to the USEPA prior to discharging that the discharge does not otherwise conflict with the CWA. Licensing under section 401(a) of the CWA includes "attainment of applicable state ambient water quality standards" as well as "downstream states whose water quality may be affected," (USEPA | History). Dischargers who apply for the 401 may also be subject to the 404 permits from the U.S. Army Corps of Engineers. Section 404 presides over "placement of dredged or fill material into 'waters of the United States,' which includes wetlands, intermittent streams, rivers, lakes, bays, and portions of the oceans (USEPA | History). Some permit applications under section 404 are also subject to the National Environmental Policy Act (NEPA) process of preparing an environmental impact

statement (EIS). The permitting process may be viewed as onerous; it is certainly thorough.

NONPOINT SOURCES

Historically, nonpoint sources account for substantial amounts of pollution. Typical sources of nonpoint pollution are runoff from storm sewer systems and farming. In the CWA, nonpoint sources are defined by exclusion, or anything that is not a point source, and are associated with nutrients, pathogens, clean sediments, pesticides, and salt. Since they are more difficult to regulate than point sources, nonpoint sources are culpable for increasing proportions of pollution. According to the most recent 303(d) report, "more than 40 percent of all impaired waters were affected solely by nonpoint sources, while only 10 percent were caused by point source discharges alone" (USEPA | History) .

AUTHORITY UNDER THE CWA

This systematic approach to improving water quality relies on communication between federal and state agencies. The state agencies involved include: State Departments of Natural Resources or Environmental Protection, Department of Health, State Water Resources Commission, and County Health Commissions. Wastewater treatment plants and municipal governments also have jurisdiction in many states for permitting sanitary and industrial wastewater discharges.

State agencies face several limiting factors. Each agency must function under personnel shortages, budget constraints, reliance on available scientific data, and the demand to demonstrate successes. In response to the physical limitations of monitoring, the CWA requires permittees to perform and intensive and frequent self-monitoring, and report exceedences to governmental agencies. Results are often submitted to the public, increasing the accountability of each regulatory agency as well as the polluter. Later, issues involving self-monitoring and public accountability will be discussed.

In addition to delegating permitting authority, the CWA retains administrative and criminal prosecution capabilities. Administrative law litigation under the CWA compels agency action by injunction or mandamus to obtain USEPA enforcement in particular cases. Criminal prosecution, resulting in jail time, can be incurred by simply lying on pollution reports, performing "knowing endangerment," or other actions (United States v. Smithfield Foods).

CHAPTER 3: CRITIQUE

LIMITATIONS OF THE ACT

There are inherent limitations to the media and resource-specific legislative format of the CWA. Ecologically, the CWA fragments regulation of an intermedia resource, instead of adopting a holistic solution to environmental problems. This scenario has been described as contradictory to the "First Law of Ecology: Everything is connected to everything else" (Commoner). For example, deposition of air pollutant is a major cause of water pollution, but air deposition is covered not at all by the CWA and only indirectly by the Clean Air Act.

Interpretation of the Act's statutory language further complicates regulation of water quality. Supreme Court rulings in the past decades have molded the scope of the Clean Water Act. In early 2001, The Supreme Court overturned a 15-year-old interpretation of the definition of navigable waters protected under the Clean Water Act, ruling that the federal government was not authorized to regulate dredging and filling of isolated ponds and wetlands (SWANCC v. Army Corps of Engineers). The imminent ambiguity of "isolated" in future rulings skirted with the purview of a large portion of previously federally protected waters. The administrator of the USEPA at that time, Carol M. Browner, feared the ruling would "make it even more difficult to effectively protect against the loss of wetlands" (Greenhouse). In fact, Browner was correct. This narrow Supreme Court decision surfaced in a case involving a Michigan landowner, John Rapanos, who unlawfully filled in several wetlands. However, the Justice Department

argued that comprehensively protecting the nation's waters involves "core federal interests, and is thus well within Congress's purview" (NYT Ed. 10/2002).

These Supreme Court decisions, which narrow the regulatory reach of the federal government, continue to impede agencies enforcing the Clean Water Act. An internal USEPA report released to Congress in 2008 revealed that the agency had "dropped or delayed more than 400 cases—or 50% of its docket—involving suspected violations of the CWA" and in every case the reason was that "regulators did not know whether the streams and wetlands in question were covered by the law" (NYT Ed. 04/2009). This uncertainty about of the definition of "waters of the United States" under the CWA caused 147 enforcement actions to be dropped between 2006 and 2007 (Clean Water Action). Confusion over the jurisdiction of the Act has also caused delays in permitting decisions. The Army Corps of Engineers cited a three month increase in permitting time, due to stricter permit applications and instruction booklets (Clean Water Action). This ruling has clearly muddled the proficiency of the CWA regulators. Although significant progress has been made in repairing water quality, the statutory goals of the CWA have not been entirely met.

Current efforts aim to clarify the statutory language of the Act. In 2007, companion bills in the House and Senate proposed to broaden the protection of waters to include the millions of acres of wetlands and thousands of streams left exposed under the prior decisions. These bills intend to resolve the issue by removing the word "navigable" from the law and by detailing the waters to be protected—"large rivers, tiny streams, ponds, lakes and wetlands" (NYT Ed. 05/2007). Extending protection to previously denied non-"navigable" waters would better serve the purpose of the CWA, since these

"isolated" bodies are usually connected through water tables or tributaries. It would also improve the USEPA's ability to perform one of its main duties: restoring the waterbodies of the United States to acceptable standards. . Another current bill from the US Senate, the Clean Water Restoration Act, intends to resurrect the broad reach of the pre-Supreme Court rulings, Clean Water Act. In addition to shifts in interpretation, the CWA is also susceptible to swings in political administrations.

POLITICAL ADMINISTRATIONS

Reform of environmental regulation involves the participation of industry and commerce, government regulatory agencies, and active citizen groups. The government agencies often compromise between the industry/commerce dynamic, and active citizen groups.

The politics of environment is genuinely partisan. The League of Conservation Voters' National Environmental Scorecard declared, in 2001, "congressional GOP membership typically has annual scores averaging less than 20 percent and its leadership close to 0 percent, and the Democrats' average is above 80 percent, with its leaders at 83 percent (League of Conservation). The percentages refer to their scale which assigns 100 percent to the strongest environmental commitment and a score of zero reflecting consistent voting against environmental and public health legislation. Thus, GOP leadership is expected to consistently vote against environmental legislation. Although anti-environmental agendas are never explicitly stated, this trend prescribes expectations to both the Republican and Democratic parties.

Changing presidential administrations are purportedly accompanied by subsequent shifts in the level of environmental enforcement. The Clean Water Act was enacted under the Nixon presidency, and the Act remained relatively stable until the Clinton administration when Congress experienced a Republican majority.

The decline of environmental enforcement during the Bush administration is demonstrated by several studies and records. A study by the nonpartisan Transactional Records Access Clearinghouse (TRAC) revealed that federal prosecutions of environmental crimes decline by 23 percent after President Bush takes office (TRAC). Civil lawsuits against polluters also decline during this period. In relation to the CWA, EPA litigation during this time declines by over 39 percent (Environmental Integrity Project). Evidence collected in 2003 further advances this argument. According to a study by Knight-Ridder in 2003, "the first Bush and Clinton administrations averaged 134 notices of water pollution violations a month; the current administration (George W. Bush) is averaging 35 a month—down 74 percent (Borenstein). The second Bush administration counters these statistics by claiming anti-pollution laws are being enforced more effectively, with a focus on encouraging positive behavior cites.

Water pollution possibly increased during George W. Bush's presidency as a result of his approval of several statutes. In 2000, the Clinton administration revised regulations of point source pollution, in which each state assesses and assigns maximum allowable levels of pollution for each body of water within its borders. President Clinton adjudicated that each state has up to 15 years to set these pollution levels with an additional ten years to cleanup. In 2002, President Bush considerably relaxed these standards by urging "voluntary efforts" and suggested to raise the scientific threshold for

polluted waters (NYT Ed. 08/2002). This would give states more leeway in determining which waterbodies require cleanup, further delaying restoration of polluted waters. The Bush administration legalized the dumping of mountaintop mining wastes into valley and streams. It also failed to address the lack of available resources for new waste treatment facilities (NYT Ed. 10/2002). These decisions do not facilitate improvement in environmental enforcement. A New York Times investigation in 2009 found that "companies and other workplaces had violated the Clean Water Act more than 500,000 times in the last five years, but fewer than three percent of polluters had ever been fined or otherwise punished" (Duhigg). State environmental agencies defended their efforts by reporting inadequate budgets and a proliferation of polluters. Yet the Government Accountability Office further revealed "widespread inconsistencies in how the CWA was enforced," mainly due to disorganization, lack of reliable data, and poor planning by state and federal regulators (Duhigg).

Several of the environmental staff under the Bush administration raised concerns about the agenda of the administration. The White House Council of Environmental Quality became fraught with former anti-environmental lobbyists during this time, including the chair—James L. Connaughton (Phoenix). An aftershock of decreased environmental enforcement was the retirement of several USEPA administrators during Bush's presidency. One administrator who was referred to as a "driving force behind the agency's pursuit of utilities that started in the Clinton administration," personifies the dissatisfaction among some top officials (Lee). Resignations were expected to continue as the administration failed to enforce environmental statutes. Eric Shaeffer, head of the USEPA's Office of Regulatory Enforcement, stated he was "fighting a White House that

seems determined to weaken the rules that [USEPA employees] are trying to enforce" (Lee).

Politics also comes to life at the state level, although the environmental motivation of governors and mayors is not always clear. Environmental broadcasts by state officials occur less frequently. Rhode Island presents an interesting case, due to the collision of a progressively environmental citizenry and a beleaguered budget. These factors frequently clash during an environmental crisis, and result in the transient diagnosis of the political leader. For example, in September 2001, astounding levels of the gasoline additive MBTE were found in the water supply of Pascoag, RI.[2] Residents were unable to drink, cook, or shower safely for nearly two months and awaited the response of Governor Lincoln C. Almond (Pascoag Turnip). Although disapproved for his hesitation on allocating a $400,000 USEPA grant headed for Pascoag, Governor Almond is only a part of the story. Limited legal resources restricted the ability of the RIDEM to hold the polluters accountable before they filed for bankruptcy (Waterman).

Federal funding also seems to imply environmental activism. In 2005, Rhode Island's governor, Donald Carcieri, accepted a $213,140 grant from the USEPA to expand water quality monitoring along the state's coastal beaches. Congress' Federal Beach Act, of 2000, funded the project (Rosner). However, a recent act by Governor Carcieri has environmentalists and certain state officials concerned about the environmental pioneering of the state. Carcieri is one of 20 U.S. governors who urged President Obama to reconsider the USEPA's progress on regulation for greenhouse gas

[2] In mice, MBTE causes fatal tumors and severe trauma to the nervous system and liver (Houston Refining).

emissions due to economic concerns (Werner).[3] For environmentalists, the Governor's stance might represent reluctance, and for Attorney General Patrick Lynch, it "undermines specific commitments made in litigation in which my office represents the State" (Scharfenberg).

In contrast, under President Barack Obama the federal government has placed significant weight on environmental efforts. According to USEPA spokeswoman Andora Andy, "this [current] administration has made it clear that water is a top priority" (Duhigg). Andy is referring to an overhaul in enforcement of the Clean Water Act, with additional focus on drinking water via the Safe Water Drinking Act. Head of the USEPA, Lisa P. Jackson, outlined reforms in the Clean Water Act necessary to improve enforcement, at a hearing in early 2009. Her points included setting strict benchmarks for state regulators, compelling companies to submit electronic pollution records for transparency and ease of detecting and punishing violators, and developing "more innovative approaches to target enforcement to the most serious violations and the most significant sources" (Duhigg). These initiatives are aimed at repairing the environmental health that was neglected during the past political leadership, and environmental groups are hopeful that the current administration will carry out as it proclaims.

RHODE ISLAND

In a state nearly surrounded by water and interspersed with streams, rivers, lakes and ponds, comprehensive water regulation is essential. Rhode Island has approximately

[3] Letter to President Obama, March 2009. EPA responded by restating the imminent threat of increased GHGs and rejecting the claim that regulation of GHGs will threaten the economy

1,498 miles of rivers, 20,917 acres of lakes and ponds, and close to 72,000 acres of forested wetlands (Office of Water Resources). Rhode Island's water systems are regulated by an amalgamation of federal, regional, state, and local agencies. The USEPA's New England chapter is responsible for Region I states, including Rhode Island and Massachusetts. This agency assists states in monitoring and assessing their respective waterbodies by setting goals and coordinating strategies with states. The USEPA'S New England office stresses the importance of states collecting statistics and quantitative information to ensure efficiency. Objectives are set based on national standards and then readjusted to suit the region's idiosyncrasies. Also on the regional level, the New England Interstate Water Pollution Control Commission (NEIWPCC) has integrated Rhode Island and other New England states since 1947. As a not-for-profit interstate agency, the NEIWPCC encourages interstate cooperation through activities and forums, educates the public about key water quality issues, supports research projects, trains environmental professionals, and provides leadership in water management and protection (NEIWPCC). The agency's focal interests are water protection, wetlands restoration, nonpoint source pollution, water allocation, and underground storage tanks. The NEIWPCC is regulated by a panel of 35 Commissioners—five from each participating state—who are appointed by their state governors or are otherwise qualified for their position (NEIWPCC).

The Rhode Island Department of Environmental Management (RIDEM) governs environmental issues in the state, under jurisdiction from the EPA. Through various partnerships, the RIDEM provides assistance to municipalities, businesses, and individuals, enforces laws created to protect the environment, and conducts research to

resolve environmental issues. The RIDEM is also responsible for governing the state's NPDES program, or RIPDES for Rhode Island.

The Office of Water Resources and the Office of Compliance and Inspection are integral divisions within state environmental regulation of water. The Office of Water Resources (OWR) protects the state's surface waters, groundwaters, and wetlands through the state's Water Quality Standards Program. This program designates uses and water quality goals for the state's waters, and ensures compliance with the CWA (Office of Water Resources). The OWR orchestrates the control of wastewater discharges, promotion of nonpoint source abatement, prevention of groundwater pollution and wetland alteration. It also recognizes the significance of the hydrologic cycle and maintaining unpolluted groundwater supplies which are essentially tied to surface water. In addition to monitoring, the OWR reports water quality results through the Integrated Water Quality Monitoring and Assessment Reporting process. These results direct the agencies restoration efforts. The USEPA recently recommended that states merge these two reports to create a single Integrated Report.

The Office of Compliance and Inspection (OC&I), is the regulatory compliance and enforcement component of the RIDEM for air pollution, water pollution, and waste issues (RIDEM). This office is comprised of several compliance and enforcement related programs, with duties such as complaint response/investigation, compliance monitoring, issuing enforcement actions from RIDEM, and guaranteeing evaluation of environmental violations. The OC&I often works in coordination with the OWR. Each calendar year, the OC&I releases a summary of "Enforcement Activities," which includes counts of complaints, compliance monitoring, and enforcement actions for each of its regulated

media (air, water, etc). In addition, they also release "Monthly Enforcement Summaries," which provide detailed accounts of the enforcement actions carried out in that month.

As a particularly water-invested state, Rhode Island has several NGOs that aid in water pollution prevention and cleanup. Included in this group is: Clean Water Action, Narragansett Bay Commission, Narragansett Bay Estuary Program, Conservation Law Foundation, and RI Sierra Club. Additional groups will be discussed as the paper shifts toward regulation of the Blackstone River.

BLACKSTONE RIVER

The Blackstone was marked for industrial development after the opening of Slater Mill, one of the first cotton mills in the United States, in the late 1700s. In the time following, hydropower sites started to line the river and industries multiplied. By the late 1800s, the Blackstone River supported these companies by supplying hydropower and water (Kerr). Unfortunately, it also became a convenient site for disposing of industrial waste and sewage.

Many of the pollutants that were discharged—such as dyes, heavy metals, varnish, solvents, and paints—still remain in the river's sediment. In 1971 the Blackstone was labeled "one of America's most polluted rivers" by an article in Audubon magazine, and in 1990 the Blackstone River was classified as a class C, suitable only for boating and other secondary contact recreation (Kerr). At this time, the combination of pollution with the large flow of the river produced significant amounts of oxygen

consuming materials (BOD), fecal coliform bacteria, polychlorinated biphenyls (PCBs), petroleum hydrocarbons (PHCs), and various metals (cadmium, copper, nickel, copper, chromium, lead) (Kerr).

Restoration of the Blackstone has a historical as well as an ecological impetus. The River gained national significance as the birthplace of the American Industrial Revolution. In 1986, Congress established the John H. Chafee Blackstone River Valley National Heritage Corridor Commission to protect and celebrate the Valley's history (Blackstone River Coalition). This commission does not own or manage any of the land in this watershed, but rather partners with non-profit and private organizations, as well as local, state, and federal government agencies. President Clinton declared the Blackstone an American Heritage River in 1998. As a result, the River entered a program designed to help river communities seeking federal assistance (Blackstone River Coalition). Ecologically, the level of pollution in the Blackstone Watershed further signifies the importance of restoration efforts by various agencies. In July 2002, the USEPA and U.S. Army Corps of Engineers selected the river as one if their eight demonstration pilot projects to coordinate the planning and implementation of urban river cleanup and restoration (Blackstone River Coalition).

The interstate position of the River commands both Rhode Island and Massachusetts agencies. Beginning in Worcestor, Massachusetts, the Blackstone River flows south into the Seekonk River at the head of Narragansett Bay. Water quality in the Massachusetts section of the River is archived on the Massachusetts Department of Environmental Protection (MA DEP) website, while the Rhode Island portion is governed by the RIDEM. A map provided at the end of the text diagrams the federal and

state agencies involved in the Blackstone River.[i] Local organizations also work to improve the river through volunteer cleanups, providing public information regarding river improvement, and organizing water quality monitoring programs. A few of these groups are the Blackstone River Watershed Association, Friends of the Blackstone, the Blackstone River Watershed council, Blackstone Headwaters Coalition and the Massachusetts Audubon Society (John H. Chafee). Community involvement in cleanup of the Blackstone River ebbs away at residual pollution and helps ensure a cleaner river for the future.

Fiscal Support in Rhode Island

Environmental enforcement trends may also parallel the availability of funding. Allocation of funds on a statewide basis is prone to several factors, including economic prosperity of the state and deliberation of governmental agendas.

Rhode Island draws from several initiatives to fund pollution abatement and water quality restoration projects. In 1999, Rhode Island established a State Revolving Fund (SRF) under the authorization of the CWA to assist community wastewater and drinking water efforts. Managed by the R.I. Clean Water Finance Agency (RICWFA) and OWR, the SRF provides sub-market rate loans for construction and enhancement of wastewater collection systems and treatment facilities. According to RICWFA, the fund reduces the cost of financing such projects by at least 33% (RICWFA). In a display of cooperative federalism, RICWFA channeled $426,314,600 to the SRF from the American Recovery and Reinvestment Act of 2009, to aid wastewater abatement, nonpoint source and estuary

projects, and to create jobs, *inter alia* (RICWFA). Thus, the agency acts as a proxy between federal funds and state and local governments. The OWR also controls the Aqua Fund, which was established by voter referendum in 1998. Legislation enacted under RIGL 42-106 commissioned $15 million and a twenty-member Aqua Fund Council, comprised of legislators, state agency officials, representatives from the USEPA, environmental scientists, wastewater treatment facility operators, commercial fishermen, local industry representatives, and the general public (OWR). The Aqua Fund targets projects affecting the water quality of Narragansett Bay.

In addition to federal funding and state delegated money, several groups fund the cleanup of Rhode Island's waterbodies. The John H. Chafee Blackstone River Valley National Heritage Corridor Commission not only receives funding from Congress through the National Park Service, but also from its Heritage Partnership Program. This program allows interested parties to support, match, or exceed Commission funding for numerous projects. In February, 2010 the Commission awarded $173,970 to 21 different projects throughout the Blackstone River Valley, with this support being matched by $1,022,022 from other sources (nps.gov). New England's not-for-profit Conservation Law Foundation (CLF) utilizes a similar framework of donations and corporate matching. CLF implemented a pollution reduction strategy to assist in cleanup of the Blackstone River (Conservation Law Foundation).

Financial support for nonpoint source pollution prevention is on the rise. Nonpoint Source Management Program Grants[4] increased from $27 million in 1990 to $237 million in 2001, and fell slightly to $200 million in 2009 (EPA | History). Blackstone River Watershed targeted waterbodies have been awarded Competitive and

[4] From Section 319 of the Clean Water Act.

Targeted Nonpoint Source Grants by RIDEM from 2000—2009. Funding for nonpoint source prevention programs is likely to increase as the majority of pollution affecting waterbodies switches from point sources to nonpoint sources.

Budget Woes

In an effort to relieve political agendas of the strict attribution of environmental enforcement decline, I researched budget as a limiting factor. Federally funded programs often strain under finite budgets, restrictive staff capacity and the precipitating crunch for time. Meanwhile, a backlog of unresolved issues may further alter the outward effectiveness of the program. It is arguable that the political charge, at any time, influences the priority of environmental enforcement vis-à-vis amount of financial backing. However, the time period I am interested in experienced heightened international tensions and the onslaught of a financial crisis. The budget constraints felt by USEPA on the national scale and RIDEM on the state level may therefore be partially unprejudiced. State spending in Rhode Island was slashed in 2008 to help close a $425-million budget deficit, which increased to a $590-million budget shortfall in 2009 (Peoples 1). The $7.8-billion budget reluctantly signed by Governor Carcieri in 2009 cuts millions of dollars from cities and towns but boosts government spending (Peoples 2008). Rhode Island will depend increasingly on federal stimulus funds to fill the budget gap.

Budget cuts and subsequent reliance on federal spending at the State level filter down to environmental agencies throughout Rhode Island. In 2003, Governor Almond

reduced $867,225 of RIDEM's funding. The directives included cuts to the Office of Legal Resources (which handles consent agreements from water violations), reduction of employee workdays, and reprogramming of federal funds to offset state-funded personnel in the Office of Water Resources (Budget Report). A report published by the Environmental Council of Rhode Island later that year lamented over the weakening of DEM's core functions. The rollback truncated compliance and inspection, enforcement, and water quality efforts (Environmental Council). Ramifications from the cuts were felt and monitored as early as the same year. An EPA compliance study expressed "concerns about the ability of the OLS to bring cases to a timely resolution" (USEPA Compliance). The USEPA attributed the strain to the small number of attorneys handling an extremely large caseload. As of late 2004, there were 82 Superior Court cases in queue for follow up enforcement (USEPA Compliance). USEPA recommended working jointly with, or absorbing some of the cases from RIDEM and other state environmental agencies. This trend continued throughout 2005, with another USEPA Region 1 report citing the dearth of enforcement staff and the bleak prospect of limited state or federal resources.

Funding and staffing issues are not lacking precedent. From a US GAO testimony in 1989, "Federal Facilities' Compliance with the Clean Water Act," agency officials identified the federal budget process as a significant impediment to federal facilities' compliance (GAO 1989). The process can slow the approval of funding for projects, in turn, moderating the return to compliance.

CHAPTER 4: RESEARCH DESIGN

DATA COLLECTION

An initial attempt to evaluate enforcement of the CWA throughout the entire state of Rhode Island proved unwieldy. As the numbers of permitted facilities, interested parties, and compliance data dockets increased, the thoroughness and sustainability of the study decreased. The decision to concentrate on the Blackstone River was twofold: 1). it centers on an affected waterbody with a smaller, more reasonable number of dischargers and 2). It is characterized by a rich history which guarantees, at least, some media focus.

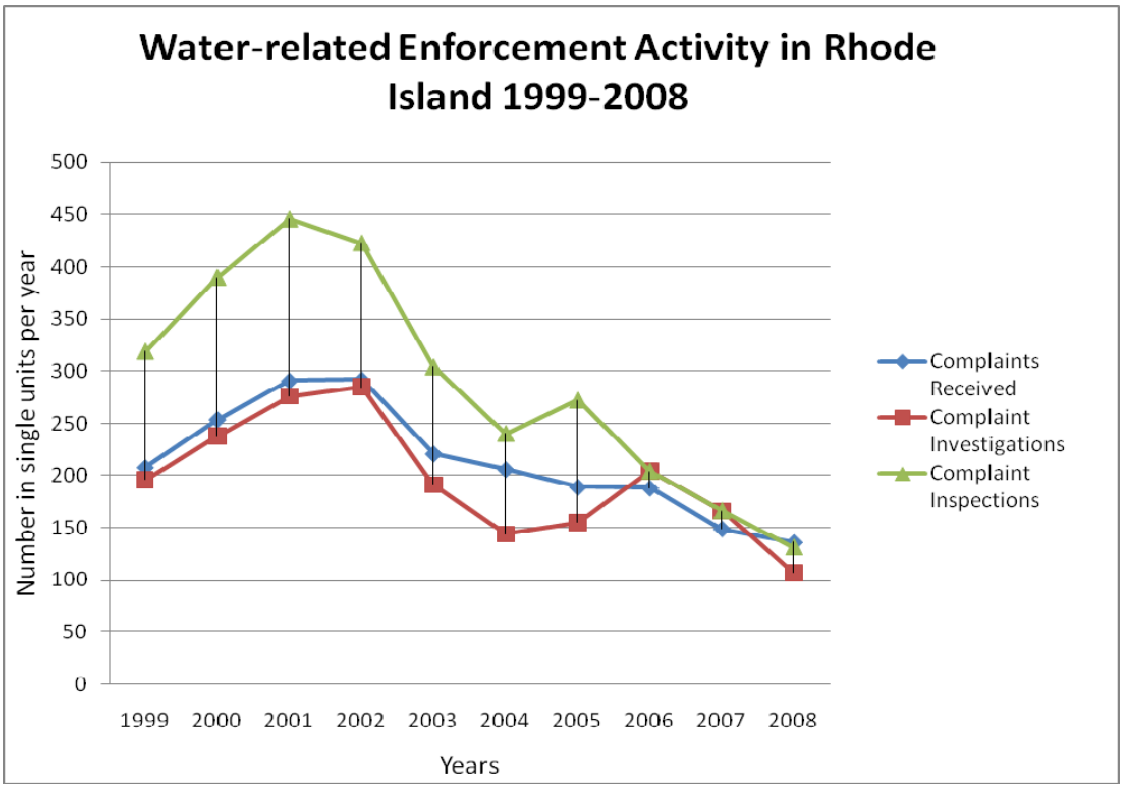
Even after reducing the sample size, it seemed imperative to graph general information on Rhode Island's water-related enforcement (just not on a case-by-case basis). As previously stated, RIDEM's OC&I publishes monthly enforcement summaries for each year, and a separate cumulative yearly summary. These accomplishment summaries align perfectly with the time frame of the study. In the yearly summaries, the OC&I provides trends of state enforcement activities. However, the section on trends lumps all media together. Since this thesis focuses solely on water-related activities, I charted trends with data solely from the water section, with particular attention to these counts:

- Complaints Received
- Complaint Investigations
- Unable to Investigate
- Inspections
- Compliance Monitoring Inspections[5]

[5] The two categories Unable to Investigate and Compliance Monitoring Inspection were not included in the graph because reporting labels were not consistent over the years.

Comparison of Complaints Received versus Complaint Investigations acts as an indicator of enforcement.[6] The information, including Complaint Inspections, is graphed as follows.

Figure 4.1: Water-related Enforcement Activity in Rhode Island 1999-2008.



Three important points can be drawn from the graph:

1. Overall, enforcement action is decreasing (after a slight increase from 1999-2002). It is interesting to note that after 2006, Complaints Received continues to decrease (which could be noted as a postive course) at a more steady rate than

[6] "Complaints Received" includes multiple complaints per location or alleged violation. "Complaint Investigations" are counted only once even though one Investigation may address multiple complaints received.

Complaint Inspections and Complaint Investigations. Inspections and Investigations appear to be complaint driven.

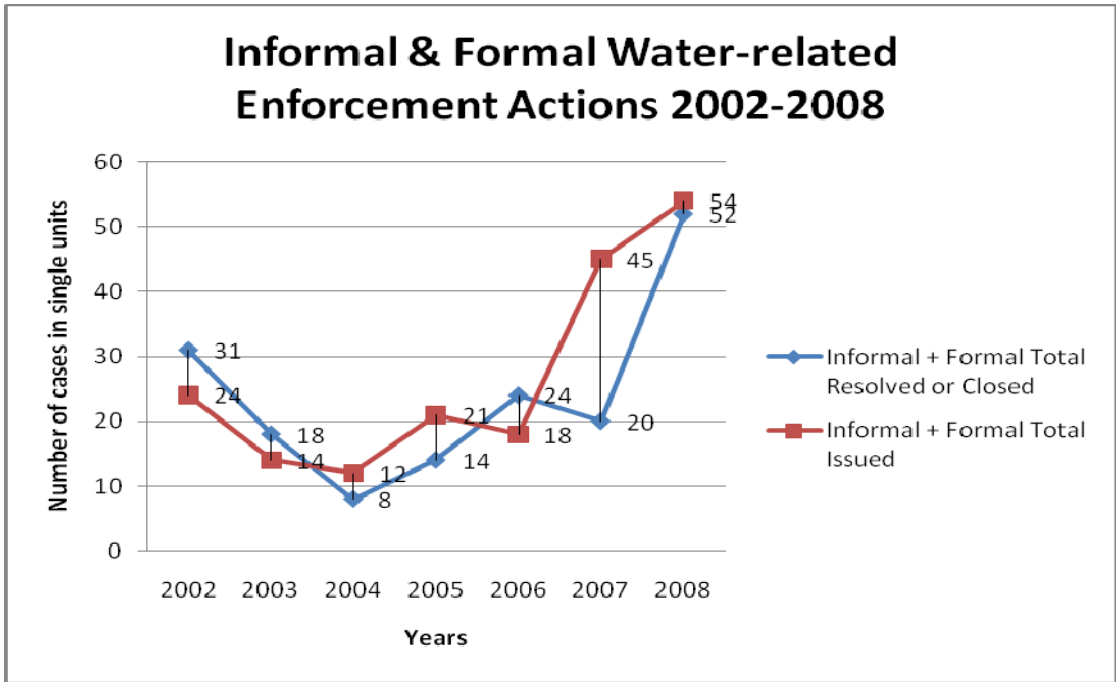
2. One anomaly in the trend occurs from years 2003-2006, in which the correlation between Complaints Received and Complaint Investigations diverges. Less investigations were performed per complaints received, but it is difficult to comprehend the relationship between these two counts—since Complaints Received may be counted more than once (which would explain the divergence in this time period).
3. There is a significant decreasing trend in the number of independent Complaint Inspections between 2001, when President Bush took office, and present.

Another indicator of water-related enforcement action by OC&I is the relationship between these counts:

- Informals—issued
- Informals—resolved
- Formals—issued
- Formals—closed

First, a graph of state water-related formal and inforcement actions.

Figure 4.2: Informal and Formal Water-related Enforcement Actions from 2002-2008[7]

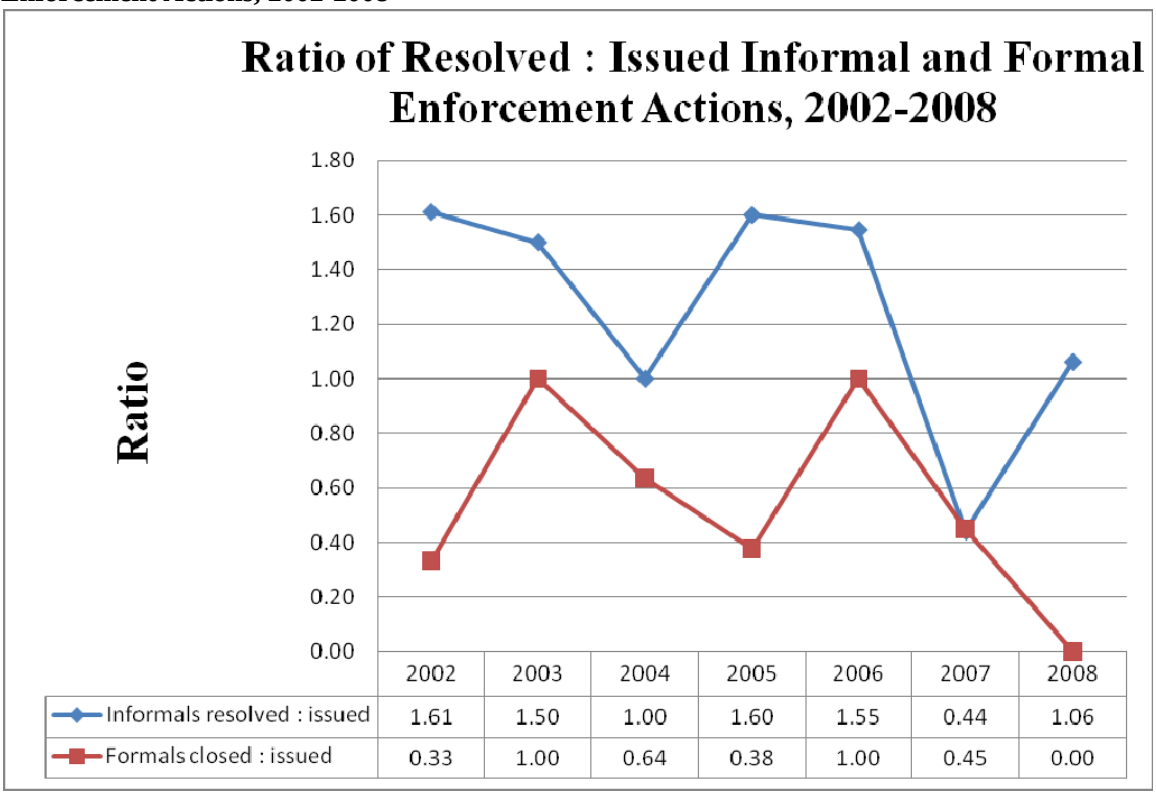


In contrast to the Figure 4.1, Figure 4.2 displays increasing enforcement activity after 2004—in terms of RIDEM issuing and resolving enforcement actions. [8] This graph illustrates a decrease in agency pursuance of violations between 2002-2004. However, it could be argued that noncompliance simultaneously decreased during this time. Although it is important to view the total number of actions issued alongside the total closed or resolved, graphing the ratio of cases resolved to cases issued allows for closer scrutiny of case evaluation.

[7] For each point, the number of informal actions was added to the number of formal actions, for issued and resolved separately.

[8] Informal enforcement actions include: Letters of Deficiency, Letters of Warning, Letters of Intent to Enforce, Letters of Non-Compliance. Essentially, these are non-penalty actions, while Formal actions are Notices of Violation that contain orders and/or penalties. Consent Agreements are not included in the Total Resolved, for it is unclear whether these are already counted in the Formal Closed category.

Figure 4.3: OC&I's Water-related, Ratio of Resolved : Issued Informal and Formal Enforcement Actions, 2002-2008[9]



Not surprisingly, a higher ratio of informal actions are resolved than formal actions are closed. The informal action pattern may be a result of overlapping issues from previous years. In each year, except for 2007, the number of issues resolved is greater than the amount issued. This phenomena is either caused by resolving cases left over from previous years, or several explanations of "resolved" are accounted for a single issue.

Figure 4.4: Table of Informal issued and Informal resolved counts

	2002	2003	2004	2005	2006	2007	2008
Informal issued	18	8	1	5	11	25	49
Informal resolved	29	12	1	8	17	11	52

[9] This data was consistently reported from the years 2002-2008, allowing for an accurate ratio of cases resolved to cases issued.

Additionally, it should be noted that the overall numbers of formal actions issued and resolved is much smaller than the number of informals. The years in which the formal closed : issued ratio reached 1.00 also experienced the lowest issuance of formal cases. This graph is also illuminating because the lowest "success" for formal action cases skips from 2002 to 2005, and continues to decrease from 2007 to 2008. Pending cases could be the cause, causing the succeeding years to appear to have higher proportions of success.

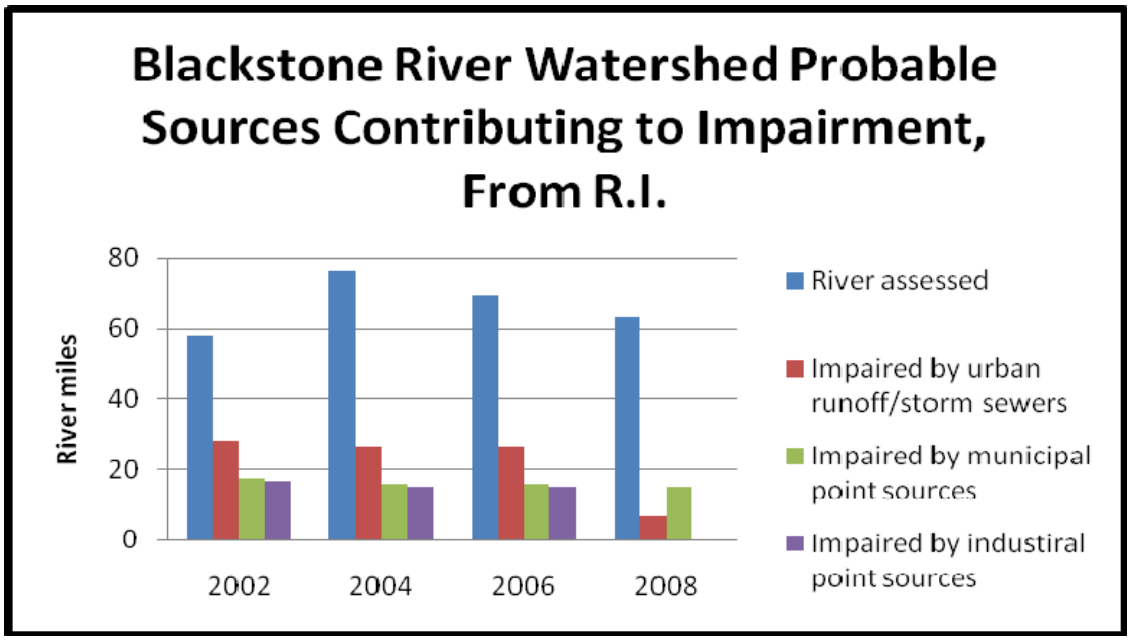
WATER QUALITY OF THE BLACKSTONE RIVER

EPA's National Water Quality Assessment Report provides water quality conditions as required under sections 305(b) and 303(d) of the CWA.[10] The report displays River miles assessed by each watershed assessed in Rhode Island.[11] The graph below depicts the number of river miles assessed in the entire Blackstone Watershed, which increases by 18.1 river miles between 2002 and 2004.[12] The report also lists "Probable Sources Contributing to Impairment" (EPA WATERS). Three of the ten or so per year probable causes were selected based on the directive of my thesis. I am interested in the relative amounts of impairment between point and nonpoint sources (below as urban runoff/storm sewers). I also assessed, but did not graph, river miles impaired by Combined Sewage Overflows (CSOs), since a recent report underlined the

[10] Reports are submitted every two years, and online reports for RI are available for the years 2002, 2004, 2006, 2008.
[11] The reports for Massachusetts contained negligible information on the Blackstone, and only for 2002 and 2004. Therefore, we will only be viewing information from these reports pertaining to the Rhode Island side of the Blackstone River.
[12] The Blackstone River is 48 miles long, but the reports include streams, and creeks, in the river miles section.

importance of restructuring CSOs. They contributed to the impairment of 1.64 and 4.10 river miles, in 2002 and 2004 respectively, and were not included as a probable cause in 2006. It is necessary to restate that this information refers to all of the river miles in the entire Blackstone Watershed. Assessment of the main body of the Blackstone River, which this study focuses on, will be addressed next.

Figure 4.5: Blackstone River Probable Sources Contributing to Impairment, from Rhode Island 2002-2008



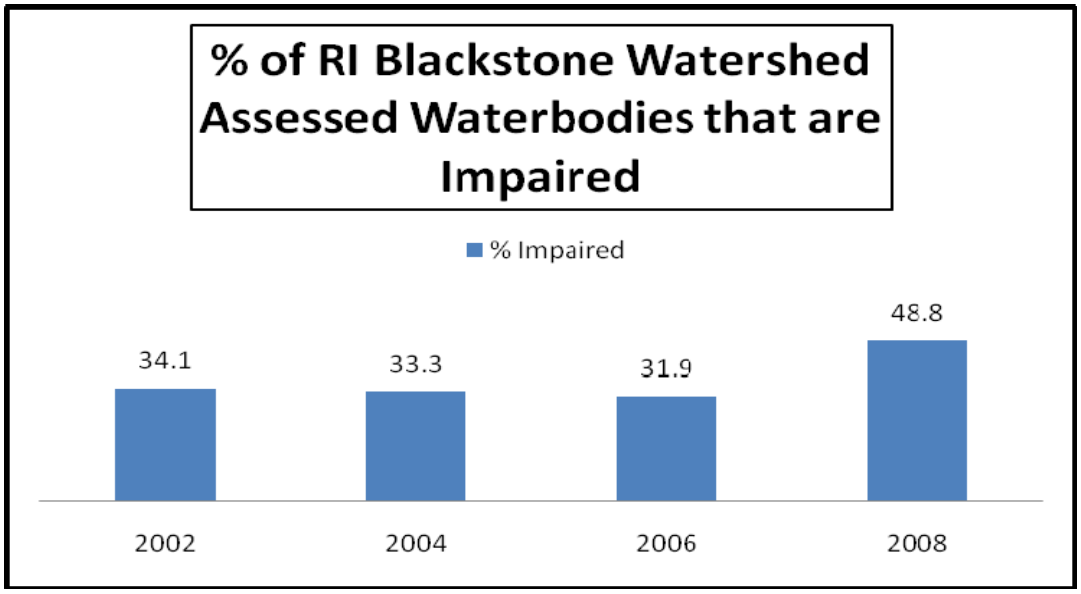
A couple of points from the graph:

1. It is difficult to conclude that the amount of river miles impaired by these media is actually decreasing, particularly since the number of river miles assessed decreases from 2004. The miles that are not included in the assessment could be impaired by these causes.
2. Alternatively, the graph strongly suggests that regulation of these probably causes of impairment to the Blackstone River could be improving.

Combining the river miles impaired by each media for each year suggests less of the river miles, overall, are impaired for these sources. It is interesting that industrial point sources are not listed in the probable causes for 2008.

In addition to river miles, the National Database records assessed waterbodies within the watershed, such as various rivers and lakes, and then chronicles the status of the waterbody as either good, threatened, or impaired.

Figure 4.6: Percentage of R.I. Blackstone Watershed Assessed Waterbodies Impaired



Points from Figure 4.6:

1. The number of impaired waterbodies within the entire watershed decreases until 2008. From 2006-2008, the number assessed drops from 47 to 41 while the number impaired increases from 15 to 20, respectively.
2. It is also important to note that all waterbodies in these counts were either impaired or good.

Information on the main body of the Blackstone River, as it flows from the Massachussetts-Rhode Island border to its end in Rhode Island, is less extensive. Data on

this portion of the River is not broken down in to number of river miles impaired by probable causes, such as Figure 4.5 illustrated. Causes of impairment and probable sources contributing to impairment are listed, however, for the 15 river miles, and are displayed in Figure 4.7.

Figure 4.7: Probable Causes and Probable Sources Contributing (P.S.C.) to Impairment for the Blackstone River, on the Rhode Island side, 2006 and 2008.

2006 Causes of Imp.	Copper	Dissolved Oxygen	Nutrients	Ammonia	Metals	Lead	Pathogens
2008 Causes of Imp.	Copper	Dissolved Oxygen	Fecal Coliform	Phosph-orus	Mercury & PCB's in fish tissue	Benthic Macroinvertebrates Bioassessments	
2006 P.S.C. Imp.	Municipal point dischargers		Industrial point dischargers	Sediment resuspens ion	Land disposal	Urban runoff/storm sewers	
2008 P.S.C. Imp.	Municipal point source dischargers (responsible for DO, and Phosphorus)		Source unknown				

In relation to Figure 4.5, ndustrial point dischargers (among several other sources) are also not listed as probable sources contributing to impairment for the Blackstone River in 2008. The causes of impairment listed for 2006 and 2008 are critical for the next section on facilities permitted to discharge to the Blackstone River.

The data entered for the main body of the Blackstone River reports the status of the river as impaired for the reporting years 2002, 2004, 2006, and 2008. The categories designated for evaluation are: aquatic life support, fish consumption, and primary recreation/swimming. Fish consumption in 2006 was reported "good," but in 2008 all three categories were labeled "impaired." Thus, the portion of the River targeted in this study has not improved by CWA standards.

Facilities Permitted to Discharge to the Blackstone River

The next goal of my study is to compare overall water quality of the Blackstone River to effluent exceedences of permitted facilities. In order to compare these it was necessary to obtain a list of permitted facilities. It proved difficult to find all of the facilities permitted to discharge to the Blackstone River, partially because of the systemic geography of the river.[13] After receiving information on the facilities, a search was run in the USEPA's national database—ECHO. For Rhode Island, 15 of 21 facilities returned search results, and for Massachusetts, 12 of 13 facilities. Therefore 27 of 34 dischargers were represented in the national database. In addition to the seven facilities not included in the results, six companies' compliance histories are not available. These facililities either do not provide ECHO with this information, have entered a form of a disclosure agreement with EPA, or the information has merely not been logged.

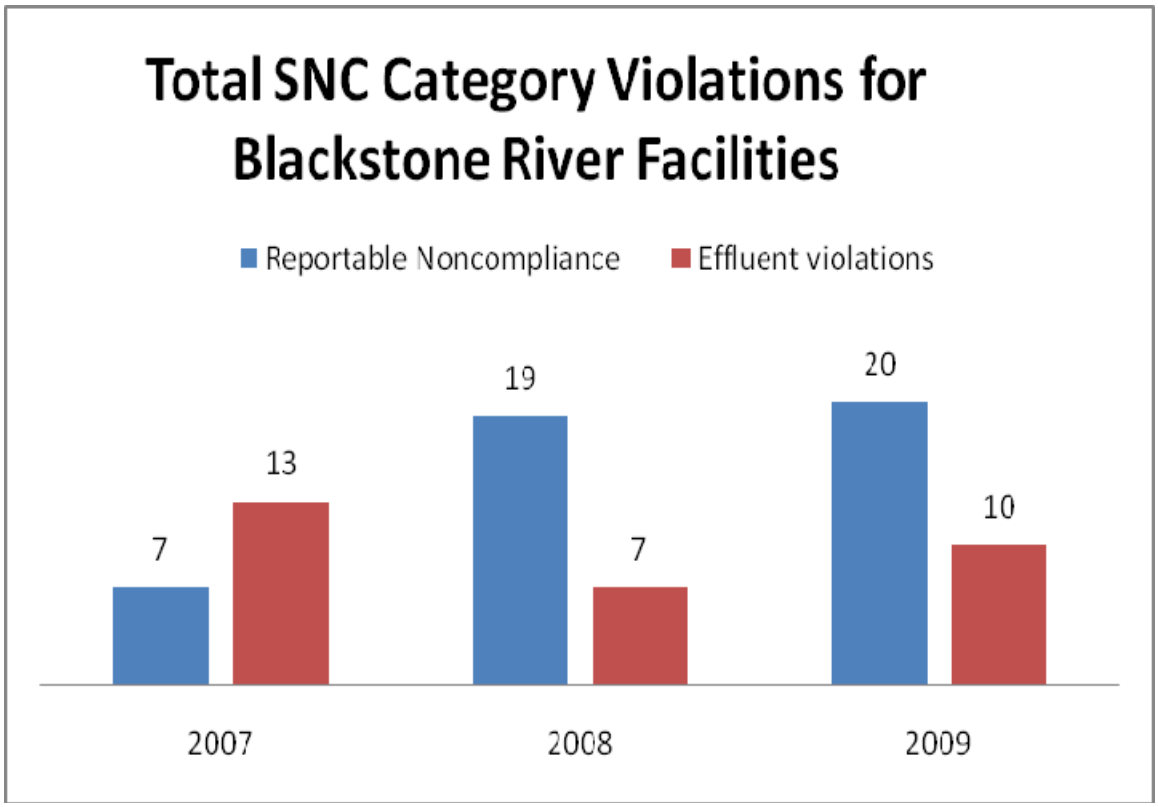
ECHO RESULTS

ECHO is pertinent for information regarding a facility's compliance history. It categorizes this information quarterly for the previous three years. Unfortunately, this only covers the tail end of the targeted time frame for my study. The available information and compliance history shows:

[13] RIDEM provided a list of the 21 RIPDES permitted facilities and a contact in EPA's Region 1 office supplied a list of the 13 permitted facilities from the Massachusetts side of the Blackstone River. Using either the permit ID or the facility name, I was able to access compliance history from EPA's Enforcement and Compliance History Online (ECHO). http://www.epa-echo.gov/echo/compliance_report_water_icp.html.

- **18** of **19** facilities reported Non-Compliance[14] in at least one of their quarters.
- -There were **151 recorded violations** among these 18 facilities. The violations range from reportable noncompliance, reporting violations, effluent violations, compliance schedule reporting violations, and unlisted category violations. Overridden and resolved violations were not included in the count. The following graphs present some of the trends in the past three years.

Figure 4.8: Significant Non-Compliance Category Violations for All R.I. Blackstone Watershed Facilities from 2007-2009



[14] Non-compliance indicates whether one or more violations occurred during a quarter. Effluent violations, compliance or permit schedule violations, single event violations (such as discharge without a valid permit), or EPA's official quarterly determination of whether violations at the facility warrant EPA/state review are all causes for non-compliance.

Figure 4.9: Significant Non-Compliance Reporting Violations for All R.I. Blackstone Watershed Facilities[15]

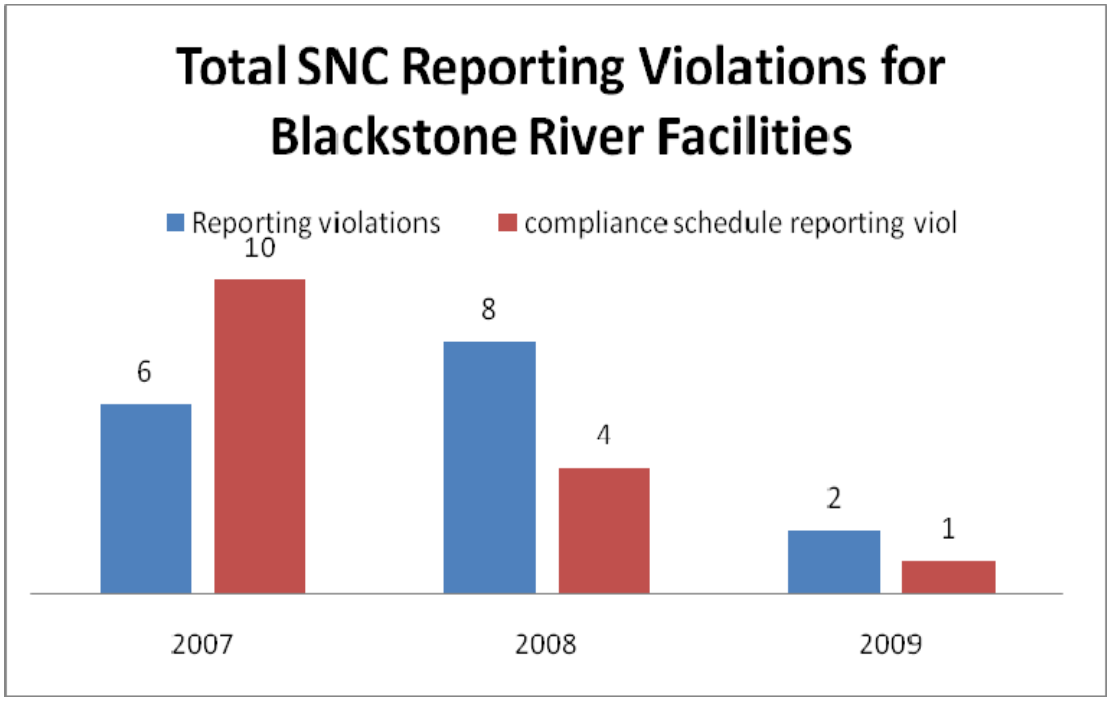
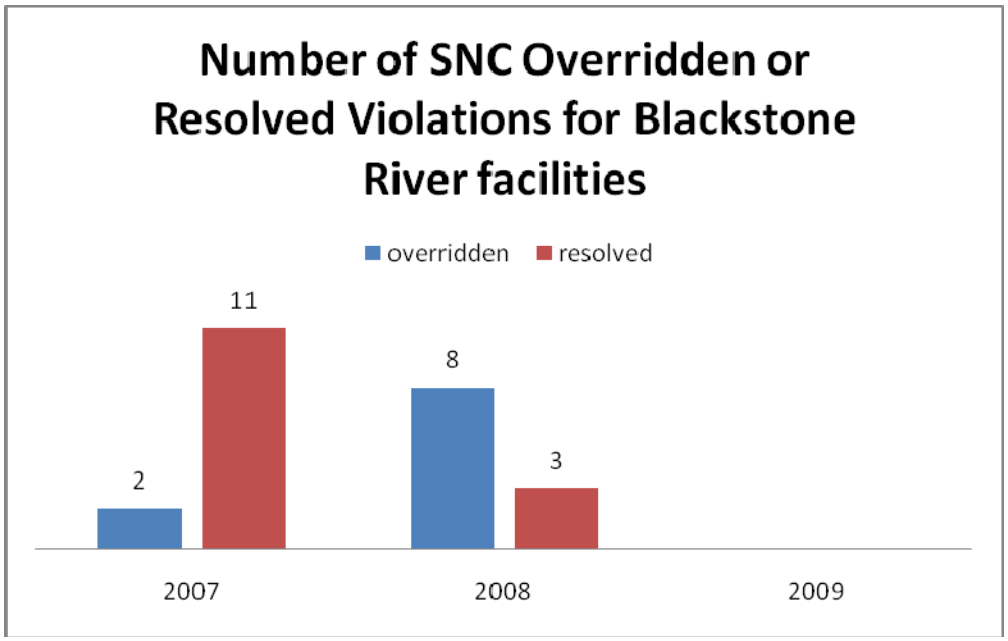


Figure 4.8 and Figure 4.9 display the total violations from all facilities included in the database per reporting year. A few points from the graphs:

1. Reportable non-compliance has increased significantly from 2007-2009.
2. Reporting violations increased from 2007-2008, but then dropped in 2009. Compliance schedule reporting violations decreased significantly from 2007-2009. This suggests facilities are either improving reporting habits or several permits may have expired.

[15] Figure 4.8 and Figure 4.9 graph the violations only for the facilities that returned results in ECHO's database.

Figure 4.10: SNC Overriden or Resolved SNC violations for R.I. Blackstone River Facilties



The number of violations overridden or resolved parallels Figure 4.9, suggesting some correlation between compliance schedule reporting violations or reporting violations and resolved cases. Comparison of Figure 4.10 to 4.8 supposes the opposite—effluent violations and reportable non-compliance increase as cases orverridden or resolved decrease.

Figure 4.11: Compliance and Permit Schedule Violations for 10 Blackstone River Facilities from 2000-2009

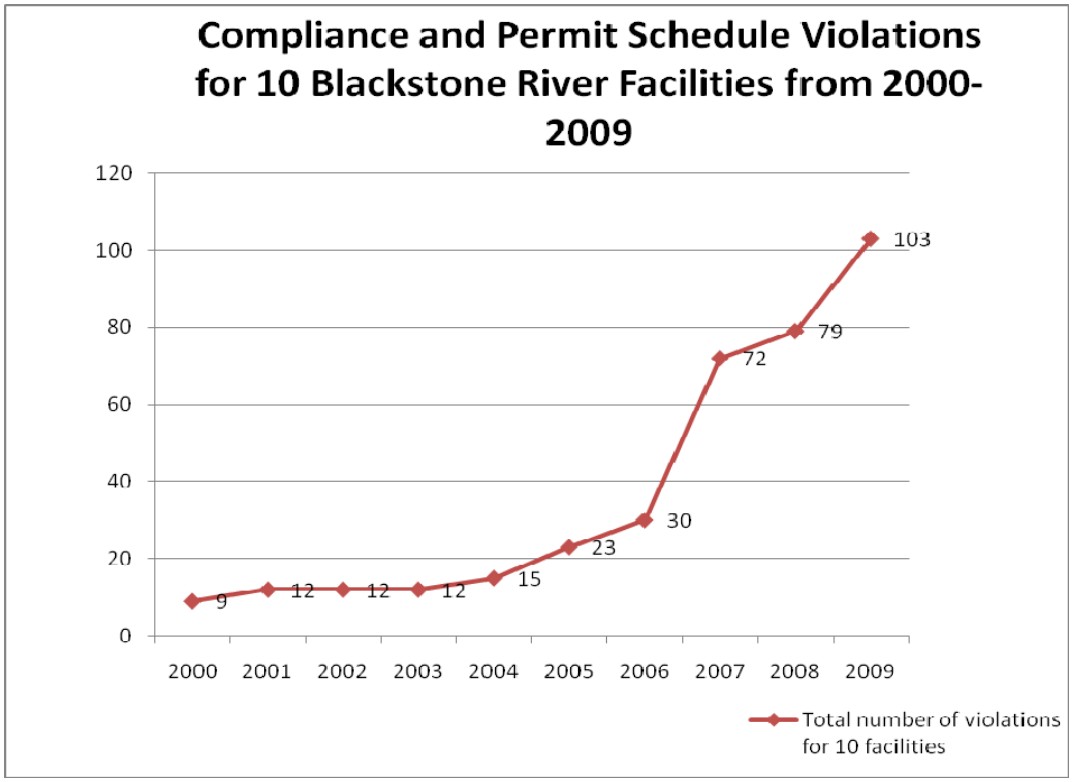
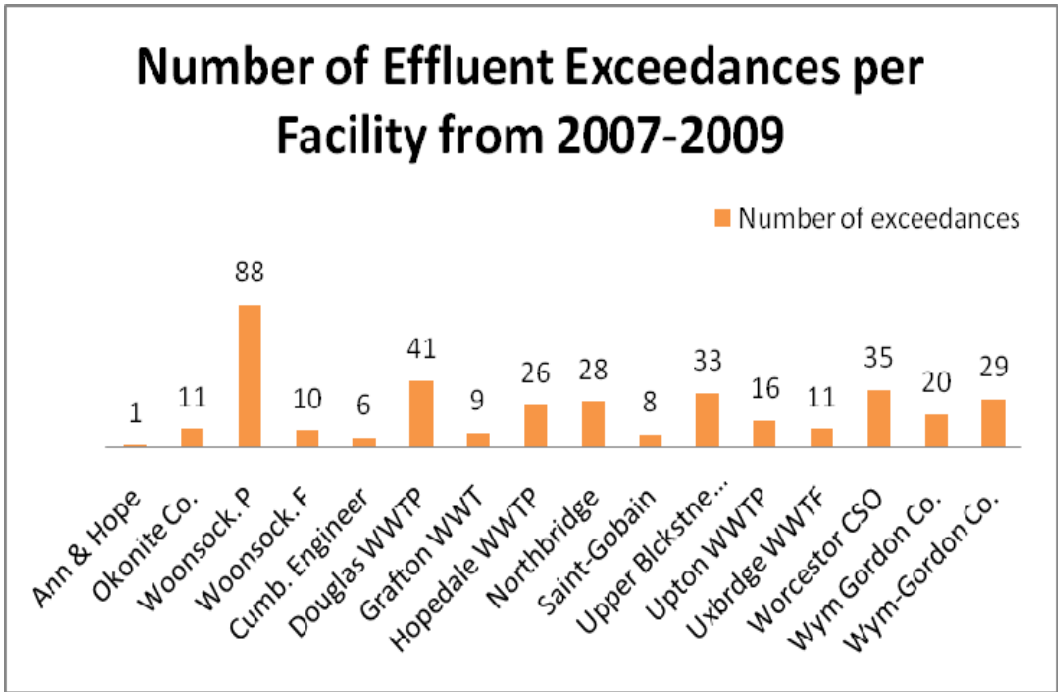


Figure 4.11 displays:

1. An astonishing increase in compliance and permit schedule violations reported for 10 of the 19 facilities. However, ECHO reports data prior to 2007 for only a select number of facilities.
2. Even more considerable is from 2005 to 2009, USEPA and RIDEM perform a mere 36 compliance monitoring inspections.
3. Only 11 facilities of the 19 listed on ECHO are inspected. There is no significant trend in the years in which the investigations were performed.

ECHO also counts the reported number of effluent exceedences per facility.

Figure 4.12: Number of Effluent Exceedences per Facility, 2007-2009



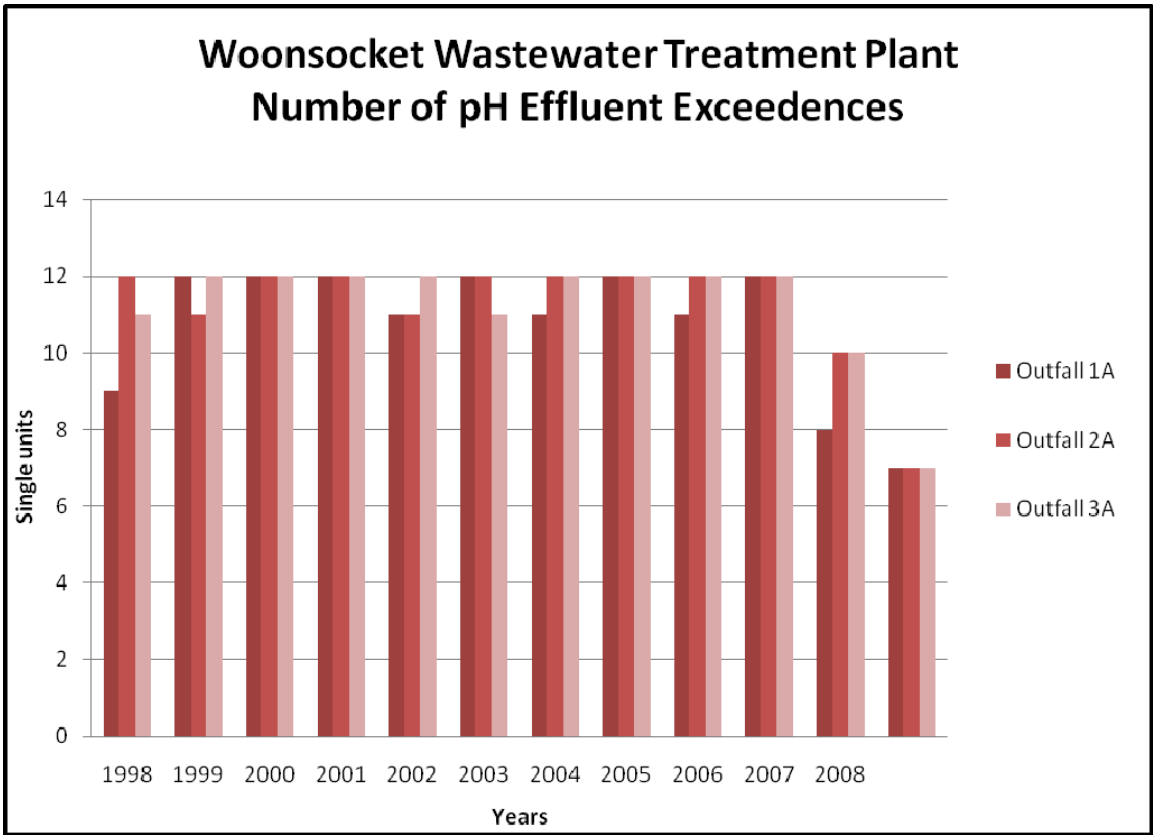
- 372 effluent exceedences were reported in last three years, among 16 facilities.

An additional chart provided effluent violation data for Blackstone River, Rhode Island permitted facilities from 1998-2009. [16] Information on facilities that actually exceeded effluent limits provided by their RIPDES permits and received an E90 (effluent violation) were included in the chart. Seven of the 21 facilities were included in the file, with ten outfalls among the seven. Among effluents listed were: suspended solids, fecal coliform, Biochemical Oxygen Demand (BOD), Copper (Cu), Zinc (Zn), Chlorine (Chl), Nitrogen (N), Phosphorus (P), Cyanide, and pH. These effluents align with the causes of impairment listed in the 305(b) and 303(d) reports.

[16] Since ECHO only publishes compliance history from the past three years, I requested additional data from RIDEM. Upon this request, my contact at RIDEM informed me that the person usually in charge of the data I requested (one person) was on sick leave, resulting in a workload increase for other employees. Regardless, I promptly received effluent exceedence history for RI facilities dating back to 1998.

Comparing information from the chart to ECHO data extends effluent exceedence patterns prior to the last three years and also explores the accuracy of the ECHO database. Woonsocket Wastewater Treatment Plant (WWTP) returned the highest number of effluent exceedences in Figure 4.12 and was chosen as an example. The following graph depicts each of the three permitted outfalls for the WWTP, with the number of effluent exceedences per substance per year:

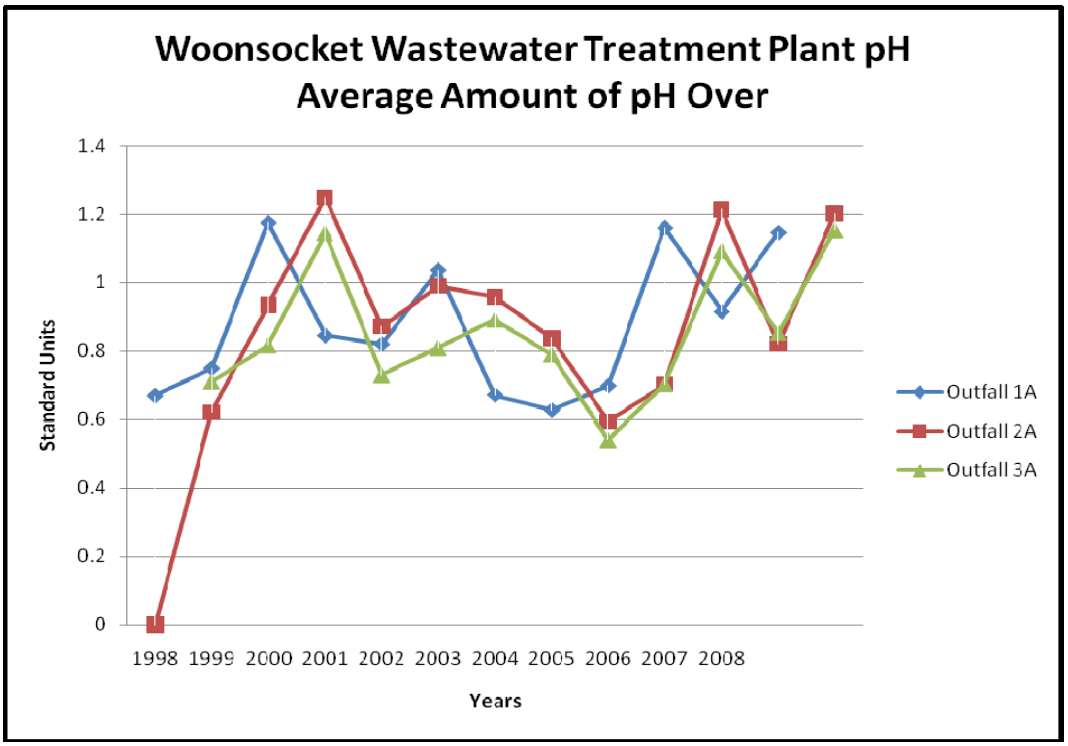
Figure 4.13: Woonsocket Wastewater Treatment Plant, Number of pH Effluent Exceedences per year



This case is notable because such a significant exceedence occurred for over ten years and has only recently decreased. A prospective explanation for the decrease in 2007-2009 might be that the state gave Woonsocket money to implement technology-based solutions

Another way of displaying the effect of these exceedences is by plotting the output of each substance. For most substances, the percentage over the maximum allowable effluent was listed. In this case, the percentage over for each outfall's pH exceedence within each year was averaged. The pH quantities were listed as Standard Units below the minimum neutral 6, or over the maximum value of the more neutral 8. Thus the amount listed for pH averages is the amount in Standard Units under the average yearly minimum level of 6. Again for the WWTP:

Figure 4.14: Woonsocket Wastewater Treatment Plant pH, Average Amount of pH Over



Several points to draw from Figure 4.14:

1. The pH effluent is increasingly acidic. As the average amount over increases, the Standard Units decrease from the mostly neutral 6 (on the pH scale) toward the more acidic lower number. Thus, although Figure 4.13 depicted lower counts of pH violations in 2007 and 2008, Figure 4.14

suggests 2006 and 2008 projected levels of pH as harmful as 2001, and more acidic than the years 2002-2005. This is a critical problem since larvae and young fish are extremely sensitive to a low pH (LRCA).

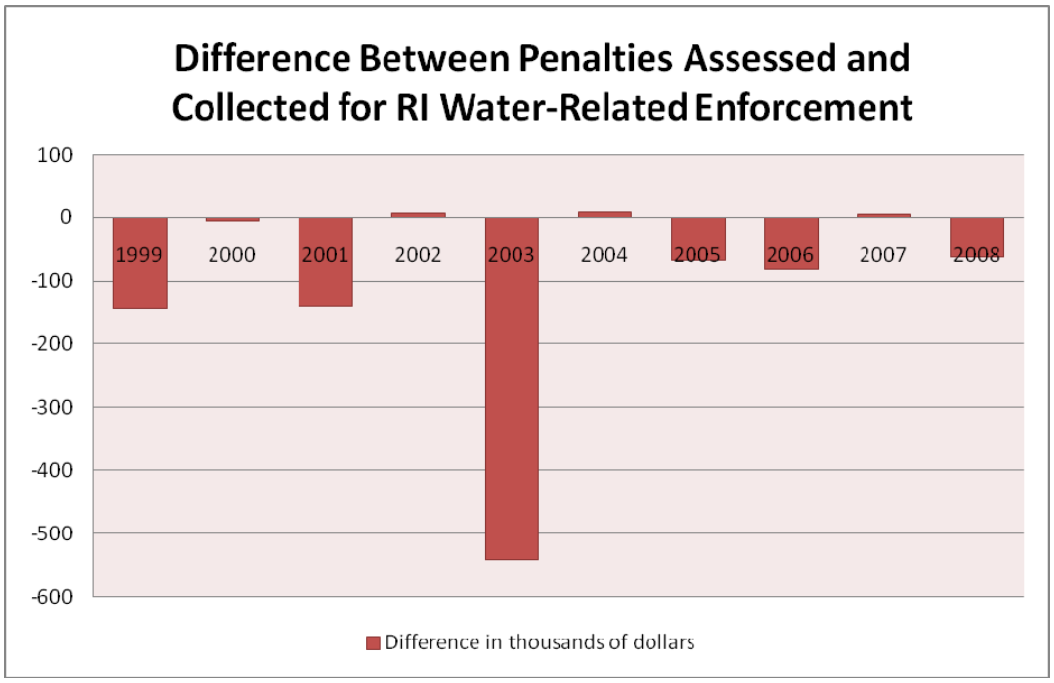
2. Such a stable trend in violation precipitates questions as to the level of enforcement, or enforcement capability. Cross-referencing WWTP in ECHO reveals that WWTP has been cited for pH limit violations every quarter for the past three years. However, the only additional recorded enforcement violation on ECHO in the past three years is an administrative consent order.

PENALTIES ASSESSED VERSUS COLLECTED

The next step in my evaluation of enforcement is to compare penalties assessed and penalties collected. Similar to enforcement actions, this relationship was first explored at the Rhode Island state level, with information from OC&I's yearly enforcement summaries.[17]

[17] The labels on the OC&I enforcement summaries are: Penalties Assessed (Consent Agreements) and Penalties Collected (Received).

Figure 4.15: Difference Between Penalties Assessed and Collected for R.I. Water-Related Enforcement



This graph confirms the striking difference between penalties assessed and collected, with only three years reporting positive yields in the relationship. An additional category is Penalties Proposed (Formal Actions) which, if included, would only increase the deficit. The total amounts from the reports are as follows:

1. From 2001-2008, a $4,283,156.54 accrued total for Penalties Proposed.
2. From 1999-2008, a $1,752,822.00 accrued total for Penalties Assessed.
3. From 1999-2008, a $732,480.24 accrued total for Penalties Collected.
4. From 1999-2008, a over $1-million disparity between Penalties Assessed and Penalties Collected.

Pertaining to the Blackstone River:

- There are $81,000 proposed penalties resulting from three Administrative formal violations for permitted facilities between 2005 and 2007. The

report does not yet show whether any of these penalties have been collected.[18]

[18] ECHO http://www.epa-echo.gov/cgi-bin/ideaotis.cgi.

CHAPTER 5: KEY FINDINGS

FINDING: DATA IS FRAGMENTED

Enforcement data are often fragmented and difficult to find. Answering the basic question of whether water quality on the Blackstone is improving and whether improvement has correlation with enforcement of permitted facilities requires compiling information from various websites and contacting numerous people. It is nearly impossible to draw linkages between different databases because indicators differ between databases and between years. I discovered this firsthand in attempting to connect effluent exceedences from permitted facilities to the 305(b) reports on the Blackstone River. It is troubling that discharge data and assessed water quality levels are not synthesized in 305(b) reports. Available electronic data for the Blackstone only dates back to 2002, and is inconsistent between the Massachusetts and Rhode Island side. On other enforcement websites Narragansett Bay Commission, links for regulatory information had been "lost" or were not accessible anymore. Navigating these websites is cumbersome and often circuitous. Staff responded well to requests for information or discussion about certain topics. There is not a shortage of websites but there is certainly a deficiency in reporting.

Transparency of monitoring and compliance records is often required in an agency's rules and regulations. Under RIGL S46-25-25.1, Narragansett Bay Commission's monitoring is to be available to the public unless the "user specifically requests and is able to demonstrate…release of such information would divulge

processes…as trade secrets of the user" (NBC). This information might be available upon personal request, but the links provided on the website are void of information. NPDES links produced the same issue with facility monitoring reports. Additionally, information regarding the Blackstone River was not included in Massachusetts' 2006 305(b) and 303(d) reports. The most current report for the water quality of the state of Massachusetts' side of the Blackstone River was from 2006.

Data accountability has been a lasting concern for USEPA and state branches of environmental enforcement. A 1999 GAO report identified that USEPA had not demonstrated progress in making environmental information more reliable, but mentioned planned efforts to improve the quality of information readily available (GAO 1999). This issue endures on the state level. A FY 2003 State Enforcement and Compliance Program study on RIDEM reported that data system management and enforcement action timelines are challenges for all government programs (U.S. EPA Region 1). The report also confirmed my hypothesis that delays cause the irregular trend in actions resolved/issued. It attributed these lags in issuing NOVs to the unavailability of legal staffers to review complaints and respond to Significant Non-Compliance (U.S. EPA Region 1). The same report reveals that RIDEM did not perform any inspections at NPDES Minor facilities, although it was above the national average for the percentage of Majors inspected (U.S. EPA Region 1). This lack of inspection hinders the credibility of compliance monitoring, and may explain the lack of SNC data for the six minor facilities in Rhode Island. RIDEM's practice of focusing on one aspect of the facility during an investigation, and not performing a comprehensive inspection, should also be noted in

their files. EPA stated that in order to be counted as a Compliance Evaluation Inspection, RIDEM "must evaluate all aspects of the facility's operations" (U.S. EPA Region 1).

FINDING: PENALTIES ASSESSED VERSUS COLLECTED

I hypothesized this relationship would be an appropriate bellwether for enforcement, only to discover how misleading it is. Initially, I attributed the difference between assessed and actually dollars collected to a lackluster effort by enforcement officials to collect penalties. Uncollected fines seemed to foster the harmless connotation of being cited for violations. If facilities possess the financial capability to easily pay fines, then corrective action is not being taken. Additionally, if it is more expensive to abet pollution by improving predisposal technology, it may be in the 'best interest' of the facility to exceed allowable discharge levels.

In order to better understand the cause of this apparent problem, I spoke with several enforcement officials, and their thoughts were supported and expanded on by several reports (to follow). Former DEM Director Jan Reitsma pointed out the potential elasticity of assessed penalties. He referred to the penalty as the beginning of a negotiation, with the expectation of an adjusted penalty amount at the end (Reitsma). Another interviewee does not view the penalties as flexible, but described them as sometimes being a "kneejerk reaction". Penalties were referred to as a device to get someone's attention, whether it is the facility or the concerned public. They often accrue to astounding amounts that the court may never impose because of the "scare tactic" nature of the fines combined with lack of follow up enforcement. The high fines

involved in an NOV are "driven by the [Administrative Penalty] statute's mandates of X dollars of fines/day of violation (or occurrence)," but the failure to enforce the penalty is directly related to staff shortages (Tierney). Thus, if difference in penalties assessed and penalties collected is to be used as a marker of enforcement, factors such as the terms of the Administrative Penalty statute, political agendas and lack of resources should be included.

Several recent studies have focused on improving USEPA's reporting of penalties and overall transparency. A September, 2008 report by the GAO identified key problems in USEPA's methods and offered several recommendations. One problem related to the discussion of penalties as an accurate enforcement indicator, claiming USEPA overstated the "impact of the enforcement programs by reporting penalties assessed against violators rather than actual penalties received by the U.S. Treasury" (GAO 1998). Although this thesis specifically viewed the monetary difference, merely assessing the proposed penalties might be the only option if, as in my discovery of USEPA's ECHO supplying on the assessed amount, this is the only information provided. cases such as USEPA's ECHO only supplying the assessed amount. However, the GAO report also highlights other reporting errors on the penalties collected side. An OIG report in March, 2010 further addressed the need for the USEPA to improve its recording and reporting of fines and penalties. The study discovered data input errors, length of time in reporting and recording, and reconfrmed the problem of tracking penalties assessed as a measure of accomplishment. In response to a January 2009 Presidential memorandum urging a commitment to open government and transparency, the OIG pinpointed USEPA's insistence on only reporting fines assessed as a critical

issue (OIG). A recommendation, which I noted in my section on overlapping cases, is to report total assessments and collections in groups of years, since there may be overflow from previous years.

Considering these recommendations, using penalties as a benchmark for enforcement productivity must be approached cautiously. For anyone but an expert, it appears as though something is wrong. If it is continued to be considered as an indicator of enforcement, the terms of presentation should either be explicitly noted or the system of reporting should be reevaluated.

FINDING: A COMBINATION OF CARROTS AND STICKS

Another indicator of environmental enforcement is the burgeoning of incentive-programs. As an alternate route to for improving enforcement, these programs provide direct aid or support to facilities that improve upon their compliance records. USEPA New England experienced a short experiment with Project XL (eXcellence in Leadership), which ran from 1995-2002. Project XL fostered EPA and facility relationships through developing and testing innovative approaches to build and improve upon more cost-effective environmental and public health protection (EPA.gov). Other USEPA incentive-based programs include the retired StarTrack Program and the National Environmental Performance Track Program of June 2000 (terminated Mid-2009). However, Rhode Island and Massachusetts were not involved in the previous two programs.

I evaluated which enforcement effort has been more successful on the Blackstone River as a directive of my thesis. Government officials have stated, and I have discovered, that a combination of carrots and sticks is necessary for maximum efficiency. A significant amount of the Blackstone River's restoration historically relied on controlling point source, permitted facilities. As the River increasingly approaches its targeted water quality, efforts to control nonpoint sources increases. During this period, incentive-based programs fluorished. Since 2000, the Senator John H. Chafee Conservation Leadership Awards recognize RI organizations dedicated to improving the environment (Environmental Council of Rhode Island). The Narragansett Bay Commission utilizes both sides of the equation. In addition to their "Environmental Merit Awards," they also publish yearly advertisements of facilities in Significant Non-Compliance in the Providence Journal. However, I feel there is need for improvement on the Blackstone River. The Woonsocket Wastewater Treatment Plant is an example of the ineffectiveness of relying on penalties. Figure 4.13 shows the consistent pH violations sustained by the facility, in spite of penalties. A new form of incentive programs should specifically target large, municipal waste facilities on the Blackstone River, since they are dealing with large amounts of effluent.

During socially progressive periods legislative action may re-direct federal and state enforcement efforts. Conversely, during a slump of environmental enforcement by federal or state agencies, community-based advocacy groups and/or environmental groups may bridge the gap. This depression could be attributed to an economic crisis, such as we've experienced recently. It could also result from the priority of a political agenda. These types of programs often emphasize the non-economic benefit of

environmental cleanup. The Blackstone River is a combination of both responses. In the next section, I further develop the idea that the Blackstone River presents a special case.

FINDING: THE BLACKSTONE, ITSELF, IS AN ANOMALY

The Blackstone River is one of the lucky watersheds that receives historic recognition and intense public awareness. These factors affect the enforcement efforts and support programs surrounding the River. The heightened public awareness rouses community involvement and programs. On September 9, 1972, "over 10,000 volunteers, more than 500 businesses, and scores of governmental and non-profit agencies staged a massive clean up of the Blackstone River" (National Park Service). This monumental effort initiated Project ZAP!, which is still operating as *ZAP The Blackstone*. ZAP functions under the umbrella of the Blackstone River Coalition (BRC) which encompasses various organizations. The BRC's efforts range from picking up debris on riverbanks to educational efforts and business sponsorship. BRC and other groups have the goal of transforming the Blackstone to be "Fishable and Swimmable by 2015" (National Park Service).

FINDING: A DIFFERENT ERA

At several points throughout this project, the question arose of whether legislation enacted almost 40 years ago is still suitable for addressing today's needs. In the evolving realm of environmental issues and the susceptibility of enforcement to political,

economic, and social climates—the answer is not clear. Current USEPA Administrator Lisa Jackson's March, 2009 memo terminating the Performance Track and initiating a RAND Corporation study to understand "environmental leadership programs as viable tools for protecting the environment," suggests we are in a different era of the Clean Water Act. EPA launched a web forum in March, 2010 on "How Best to Protect America's Waters," to help shape discussion for the upcoming conference on Clean Water. The conference will engage 100 executive and local leaders on the agency's clean water agenda (EPA.gov). The controversial Clean Water Restoration Act aims to remove the word "navigable" from the legistlation. This would certainly alter the path of water quality enforcement. These issues suggest that we are in a different era from the enactment of the Clean Water Act, but perhaps we are also in a different era from a mere two years ago. If my hypothesis holds true, we can expect to see regulation relating to water quality surge.

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