

US EPA ARCHIVE DOCUMENT

## SUMMARY INFORMATION

**Project Title:** Lean-P2 Partnership and Risk-Based ERP Initiatives

**Applicant:** Narragansett Bay Commission (NBC) - *Lead Agency*  
RI Department of Environmental Management (RIDEM) - *Project Partner*  
University of Rhode Island Center for Pollution and Environmental Health (URI) -  
*Project Partner*  
RI Manufacturing Extension Services (RIMES) – *Project Partner*

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**Total Project Cost:** \$350,000 (\$350,000 EPA and \$92,240 URI and NBC matching funds)

**Project Period:** October 1, 2009 to September 30, 2012

**Project Abstract:** Despite progress in recent decades to improve environmental performance in industry, more work is needed to increase efficiencies, reduce environmental impacts and protect human health. NBC and other partner organizations offer industry assistance programs that have already helped many RI businesses improve operations, separately and independently, through Lean manufacturing and pollution prevention (P2). However, a combined, synergistic approach of Lean and P2 would offer industry a comprehensive program that not only improves manufacturing efficiencies but also analyzes and mitigates all environmental impacts. Grant funds will be used to help support technical work, encourage company involvement, and develop ways to demonstrate the effectiveness of this new approach. As part of this effort a risk-based model, currently being used in Texas, will be studied as a possible means of streamlining regulatory programs and targeting businesses for Lean-P2 assistance. Rhode Island environmental monitoring data that exists across a broad spectrum of agencies and organizations will be organized for project performance measurement for use in project risk-based analyses. The project will be designed and implemented to promote interstate ERP collaboration.

**Federal Funding:** This project is not being executed in cooperation with or funded by another Federal Program

**Regulatory Flexibility:** Federal regulatory flexibility to implement this project is not required at this time

**Certification of State  
Agency Support:** The RIDEM’s Director, W. Michael Sullivan, Ph.D. and NBC’s Executive Director Raymond Marshall, P.E. endorse this project

## PROJECT NARRATIVE

### **A. Problem (Issue) Statement**

Government and industry have made significant strides in the environmental and human health protection arenas. “Beyond compliance” initiatives aimed at preventing pollution and reducing long-term risks, for example, have become major components of many progressive state and federal environmental programs. Though these and other advancements have improved our quality of life, serious challenges still remain—pollution from wastewater is still a major concern; 40 million tons of hazardous waste continue to be generated by 20,000 U.S. facilities each year; an estimated 137 workers die each day from diseases caused by workplace exposures;<sup>1,2,3</sup> families in 36 states have been impacted by hazardous substances brought home on “worker’s clothing, tools or [in] vehicles”;<sup>4</sup> and approximately 2,000 new chemicals are introduced into commerce annually (80,000 currently exist),<sup>5</sup> with an estimated 4 billion pounds of toxic chemicals released or disposed of each year from more than 23,000 facilities to our nation’s air, land and waterways.<sup>6</sup>

In addition to the traditional U.S. regulatory framework which has been successful at addressing some of the more “obvious risks”, alternate strategies and methods are being sought to further human health protection beyond our current capabilities. Due to the magnitude and complexity of the problems that we face, there is a growing need for the use of collaborative, interdisciplinary approaches to reduce human health risks by improving industry environmental performance. An interdisciplinary collaborative that focuses on the achievement of statistically measurable environmental performance improvements, with a special focus on risk, will provide a fresh approach to problems that exist at the interface of government regulation and industry compliance.

### **B. Background**

The Narragansett Bay Commission (NBC), with delegated authority to issue Pretreatment Discharge Permits under the Federal Clean Water Act, owns and operates Rhode Island’s two largest wastewater treatment facilities that purify sewage from 10 Rhode Island cities and towns, providing quality sewerage services to approximately 40% of the state’s population and serving approximately 360,000 people and 8,000 businesses. NBC’s award winning operations<sup>7</sup> are integral to the State of

<sup>1</sup> U.S. Environmental Protection Agency. 2006-2011 EPA Strategic Plan: Charting Our Course. Available at: <http://www.epa.gov/ocfo/plan/plan.htm>.

<sup>2</sup> U.S. Environmental protection Agency. Frequently Asked Questions About Waste. Available at: <http://www.epa.gov/epaoswer/osw/basifact.htm>.

<sup>3</sup> U.S. Department of Health and Human Services. Research and Demonstration Grants Occupational Safety and Health. National Institute for Occupational Safety and Health. Available at: <http://grants.nih.gov/grants/guide/rfa-files/RFA-OH-99-002.html>.

<sup>4</sup> U.S. Department of Health and Human Services. Report to Congress on Workers’ Home Contamination Study Conducted Under the Workers’ Family Protection Act. Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Cincinnati, OH 45226 (1995).

<sup>5</sup> National Toxicology Program. NTP 2006: Current Directions and Evolving Strategies. Available at: [http://ntp.niehs.nih.gov/files/NTP\\_CurrDir2006.pdf](http://ntp.niehs.nih.gov/files/NTP_CurrDir2006.pdf).

<sup>6</sup> U.S. Environmental protection Agency. Toxic Release Inventory (TRI) Program. 2005 Public TRI Data Release. Available at: <http://www.epa.gov/tri/tridata/tri05/index.htm>.

<sup>7</sup> Award examples (<http://www.narrabay.com/awards.asp>) include: 2007 Field's Point and Bucklin Point facilities achieved Silver Awards for excellent effluent quality from the National Association of Clean Water Agencies; 2007 Narragansett Bay Commission won NEWEA Wastewater Utility Management Award, honoring outstanding performance of a wastewater division in New England; 1998 Narragansett Bay Commission Pretreatment Program received U.S. EPA's National Pretreatment Excellence Award in the Large Significant Industrial Users category. This award honors those organizations that are demonstrating their commitment to the protection and improvement of the nation's waters through their operation and exemplary pretreatment programs; 2004 Narragansett Bay

Rhode Island's economic growth and sustainability. To enhance its regulatory pretreatment efforts, the NBC created (with EPA funding support in 1993) a pollution prevention program to provide engineering assistance to businesses and industries within their service district. Four years earlier, the RI Department of Environmental Management and the University of Rhode Island's Center for Pollution Prevention and Environmental Health (URI) also began providing pollution prevention technical assistance on a state-wide basis—resulting in a regionally and nationally recognized partnership.<sup>8</sup> A fourth industry service provider, the RI Manufacturing Extension Services (RIMES), was formed in 1996 and is the official state manufacturing extension partnership. Funded in part by the U.S. Department of Commerce, RIMES has provided on-site technical services to over 600 companies—helping to improve overall manufacturing performance and economic competitiveness.

At the time these programs were established, their individualized focus necessitated independent and separate activities. Today, however, with dwindling resources both on the part of businesses and technical assistance programs, a combined Lean-P2 Program approach is practical and pragmatic with respect to efficient use of resources and the need to address 21<sup>st</sup> century problems facing U.S. businesses, namely competition with businesses located in areas with inexpensive labor and lax environmental regulations. In order for U.S. businesses to remain competitive, they now more than ever need to operate both “lean” and “clean.”

There still remains a significant need to help industry, especially small businesses, find more efficient approaches to manufacturing and environmental management—this is particularly true in view of the current economic climate where companies must compete more effectively on a global scale. Integrating Lean manufacturing (the identification and elimination of waste) and pollution prevention (source reduction and in-process recycling) methodologies will create new opportunities that can be identified and exploited leading to greater and sustainable reductions in multi-media pollutant releases while simultaneously improving economic competitiveness. Though RIMES has successfully demonstrated the effectiveness of Lean methodologies, collaboration with NBC, URI and RIDEM pollution prevention specialists will offer industry a synergistic strategy where both manufacturing processes and environmental impacts are analyzed thoroughly.

The project proposed herein will facilitate the implementation of a multi-faceted approach across a range of industry sectors (metal finishing, textile and jewelry manufacturing, for example), resulting in a model that can be easily transferred to other states. It is envisioned that an integrated Lean-P2 approach could also play an important role in the intervention phase of any Environmental Results Program (ERP), thus allowing government agencies to commit fewer resources to regulatory oversight and enforcement.

A major focus of the proposed collaborative is to explore the integration and utility of risk-based approaches in both ERP and non-ERP initiatives. Specifically: 1) NBC and project partners will collect water quality data from various agencies throughout Rhode Island and organize the data into a comprehensive NBC computer database for the identification and analysis of risk-based

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Commission won Excellence in Management Award from the Association of Metropolitan Sewerage Agencies; 1998 Narragansett Bay Commission's Bucklin Point facility recognized by the Rhode Island Department of Environmental Management for outstanding performance in operations and maintenance; 1995 The Field's Point facility was selected the Best Operated and Maintained large secondary wastewater treatment facility in the country by the US Environmental Protection Agency and winner of its National Excellence Award. U.S. EPA Administrator Carol Browner and US EPA Region I Administrator John DeVillars presented Field's Point with the national excellence award.

<sup>8</sup> Pollution prevention awards: best state program in Hazardous Materials Reduction & Recycling (National Environmental Awards Council, Washington, D.C., 1991), Environmental Achievement Award (Presented by Vice President Al Gore, Save the Bay, Newport, 1995), Environmental Merit Award (USEPA Region I, Boston, 1998), and the Senator John H. Chafee Environmental Conservation Award, Providence, 2005).

intervention opportunities; 2) Rhode Island will function as a “learning state” to the Texas Commission on Environmental Quality relative to their “Risk-Based Investigation Strategy” and considering the UK’s “21<sup>st</sup> Century Approach to Regulation” framework<sup>9</sup>; and 3) URI and RIDEM will explore methods for quantifying human health risk reductions associated with decreases in methylene chloride-based paint stripper usage in Rhode Island and Region 5 (i.e., the auto body ERP NESHAP initiative), as a representative example.

Finally, project partners will promote interstate collaboration by providing 1) lean-pollution prevention manufacturing and chemical engineering assistance, and risk study findings (environmental water monitoring data centralization and program models) to interested parties; 2) technical support to the Region V auto body NESHAP ERP demonstration project; and 3) consortium states with statistical support in the design and implementation of ERP initiatives (Prof. Choudary Hanumara, URI Department of Computer Science and Statistics, has already begun to field statistical questions).

#### Program Guidelines and Eligibility Requirements

The NBC meets the State Innovation Grant Program eligibility criteria of being a municipal agency with delegated authority for federal environmental permitting through its authority to issue or deny wastewater discharge permits “as required by applicable federal and state law” under Rhode Island General Laws Title 46 Chapter 25 Section 25 and in accordance with NBC’s two Rhode Island Pollution Elimination Discharge (RIPDES) permits RI100315 – Field’s Point and RI0100072 – Bucklin Point. RIDEM is the state environmental regulatory agency and is an active partner, along with URI and RIMES. The proposed project can be implemented in a wide range of industry sectors and thus is applicable to most of the statutory authorities listed in the SIG 2009 RFP. As related to EPA’s Strategic Plan of 2006-2011, the work planned is focused on improving environmental performance through pollution prevention and innovation.

#### Threshold Criteria

*Threshold Criterion 1* – Depending on the types of industries that participate in the proposed project, some of the EPA program authorities are relevant. Industry can have a direct impact on air pollution (Clean Air Act), water pollution (Clean Water Act), hazardous waste (Solid Waste Disposal Act) and groundwater contamination (Safe Drinking Water Act). Companies that reduce waste through pollution prevention and better environmental management will necessarily reduce the risks and liabilities associated with potential pollutants of concern for the above program authorities.

*Threshold Criterion 2* - This project meets the following elements of EPA’s Strategic Plan:

Goal 1: Clean Air and Global Climate Change – The proposed project seeks to assist companies to reduce or eliminate air pollutants and also reduce energy use, thus resulting in the generation of lower levels of greenhouse gases.

Goal 2: Clean and Safe Water – The proposed project seeks to assist companies to reduce or eliminate wastewater discharge that could affect POTW’s, natural waterways and groundwater. Where possible, water conservation and reuse will be implemented.

Goal 3: Land Preservation and Restoration – The proposed project seeks to assist companies to ensure that potential releases to ground and land areas are minimized or eliminated.

Goal 4: Healthy Community and Ecosystems – The proposed project outcomes include cleaner air and clean water resulting in healthier communities and healthier ecosystems.

Goal 5: Compliance and Environmental Stewardship – The proposed project promotes the achievement of “beyond compliance” goals to increase economic competitiveness.

<sup>9</sup> United Kingdom Environment Agency. Delivering for the Environment: A 21<sup>st</sup> Century approach to regulation. Available at: [http://www.environment-agency.gov.uk/commondata/acrobat/dfte\\_final\\_170105\\_578891.pdf](http://www.environment-agency.gov.uk/commondata/acrobat/dfte_final_170105_578891.pdf)

*Threshold Criterion 3* – The project proposal complies with all requirements of the State Innovation Grant Request for Proposals FY2009 Announcement.

### **C. Project Objectives**

NBC, in partnership with the RIDEM, URI, and RIMES, is proposing a project that will integrate Lean manufacturing with pollution prevention to provide industry with the most comprehensive program for maximizing business profitability and minimizing environmental impacts. Lean by itself is true source reduction and does account for some environmentally-related aspects like energy and water use, but expanding the analyses to include all environmental waste-related issues will allow for increased efficiency and reduced environmental and human health risks. Some companies have adopted Lean and other pollution prevention methodologies, but the majority of businesses in RI have not even considered these tools to improve operations. While there has been some interest in the use and integration of these approaches (e.g. Washington)<sup>10</sup>, the State of Rhode Island intends to use grant funds to develop a strong and sustainable collaborative among project partners to aggressively pursue and work with 15-30 manufacturing facilities and businesses. Quantitative results and metrics will be organized and made available to EPA and states for study and possible implementation at other locations.

In addition, as part of the proposed project, a risk-based model will be studied and evaluated as an effective approach to 1) rank industries and businesses for wastewater/environmental regulation and 2) focus on those facilities that would benefit most from Lean and pollution prevention assistance. This work includes 1) a baseline assessment of risk-based intervention opportunities resulting from the organization and review of NBC and other regional water quality data; and 2) interstate collaboration with the State of Texas, where a risk-based model is being used for a unique regulatory initiative. URI and RIDEM will also explore methods for quantifying human health risk reductions associated with decreases in methylene chloride-based paint stripper usage in Rhode Island and Region 5 (i.e., the auto body ERP NESHAP initiative), as a representative example of reporting ERP outcome measures.

In terms of interstate support, Rhode Island will make Lean, pollution prevention, and statistical expertise available to consortium states as part of this project. In particular, project staff will work with Region 5 states in support of their proposed regional auto body NESHAP ERP project. The Region 5 project will test and develop a pooled ERP implementation strategy (Rhode Island will support training, materials development and will share expertise) with the view that lessons learned and the initial infrastructure developed in Region 5 may serve as a national model for similar projects in the future.

### **D. Methodology**

The proposed project will include Lean-P2 integration, development of risk-based approaches for ERP and regulatory programs, and interstate collaboration to promote implementation of ERP (e.g., autobody NESHAP ERP in Region 5). Details of the work plan are presented below. Estimates of the amount of EPA funds used to support the proposed activities are also included.

1. **Lean-Pollution Prevention Integration (EPA Funds - \$230,000)** – NBC, RIDEM, and URI will collaborate with RIMES, the state's official Manufacturing Extension Partnership, to develop and implement a comprehensive industry technical assistance program that focuses on improving manufacturing operations while minimizing all environmental impacts.

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<sup>10</sup> State of Washington, Department of Ecology, Washington Lean and Environment Project, 2008. Available at <http://www.ecy.wa.gov/pubs/0704033ex.pdf>

- a. *Project Committee Meetings* – Representatives from NBC, RIDEM, URI and RIMES will meet monthly to review specific company projects, analyze results, and discuss recommendations for companies. **(Meet monthly throughout project period.)**
- b. *Selection of Participating Companies* – Project personnel will contact various businesses in a broad range of industry sectors to participate in the Lean-P2 initiative. Through established networks and contacts, a myriad of potential facilities are available. Preliminary discussions with several industrial contacts have already taken place. One company is a textile manufacturer that uses VOC coatings, is classified as a large quantity generator (LQG) of hazardous waste, and is operating under a DEM air permit since VOC's and HAP's are used in various operations. Another company is a major manufacturer of trinkets and rings. Other potential sites include an autobody shop, plating company and significant water users. **(Select 6-10 companies per year.)**
- c. *Joint Assessments and Reviews* – NBC and other project personnel will work with companies that are selected in 1.b. The extent of work required for each company will vary depending on the size of the company, the number and types of different manufacturing operations, and the kinds of environmental impacts (wastewater/water use, solid/hazardous waste, air emissions, energy). In general, technical assistance is provided in two phases. During the assessment phase, specific information is gathered regarding processes and operations (inputs, outputs). Meetings with company personnel, repeat site visits, literature searches, use of Lean tools like Value-Stream Mapping, and, in some cases, technology demonstrations (e.g., on-site demonstrations of membrane separation technologies) are used to develop the most cost-effective strategies and recommendations for the company. A report is prepared and submitted to the company. In the second phase, implementation of the recommendations takes place. **(6-10 assessments per year.)**
- d. *Lean-P2 Implementation* – After the company receives the recommendation report, project personnel will assist in any Lean and/or pollution prevention implementation that takes place. While the most cost-effective recommendations are offered, companies must make the decision to institute changes. The effort and resources required can vary from simple, low cost layout changes to time-consuming pilot-testing with capital investment. Typically, as long as a reasonable payback can be demonstrated, companies are willing to invest resources. Payback can be measured not only in dollars spent but also in potential fines or penalties avoided. From past experience, 50-60% of those companies that receive technical assistance will ultimately commit to change to improve efficiencies and reduce waste. And once implementation has commenced, it may take an extended period of time to realize improvement. For example, one RI company decided to purchase and install a large ultrafiltration system to clean and reuse process water after an assessment and extensive pilot-testing had taken place. Including the assessment and implementation phases, over one and a half years were needed to complete the installation, but savings are now being realized. **(Improvements observed in 4-6 companies per year.)**
- e. *Metrics* – Throughout the project, quantitative results will be obtained and organized in a metrics spreadsheet. RIMES already utilizes a metrics system to monitor results and improvements at companies due to Lean manufacturing implementation as related to minimizing lean-defined wastes: overproduction, inventory, transportation and motion, defects, over processing, and waiting. In addition to the Lean metrics, environmental measures identified by EPA will be monitored including multimedia waste and materials/chemical/energy use. Some of the measures are already part of the current metrics system used by RIMES (e.g., energy savings and water use reduction), so project personnel will create a totally inclusive performance measurement spreadsheet by modifying the existing system. **(Ongoing throughout project.)**
2. Risk-Based Model Development (EPA Funds - \$55,000) – Understanding the potential and real risks as determined by quantitative analysis (scoring systems, risk rankings, environmental

monitoring data) can help regulatory agencies with limited resources focus on high impact areas. Government agencies (in Texas and the UK, for example) have begun to explore the feasibility of utilizing a risk-based system to structure regulatory programs. In conjunction with ERP, it is likely that this approach would provide a cost-effective model to better regulate industry.

- a. *Organization of Existing Environmental Monitoring Data for Risk Analysis* – There currently exists a large quantity of water sampling data in RI that have been collected by various agencies and organizations including NBC, RIDEM, URI and other wastewater treatment facilities. Sampling data exists for the state’s wastewater treatment facilities significant industrial users, commercial users, industrial and sanitary manhole locations, rivers, estuaries, and Narragansett Bay. While this information is deemed useful for evaluating user compliance and for monitoring of environmental conditions, the gathering, integration and analysis of existing data for the investigation of high risk industry sectors or pollutant sources could assist regulatory agencies in their efforts to prioritize program objectives. For example, if unusually high levels of heavy metals are discovered in a certain estuary, environmental agencies could choose to focus on possible sources upstream of the river and corresponding watershed. But in order to achieve this capability (of a risk level investigation), a centralized information network that contains all data from the different organizations is needed. NBC has already begun a project to create this information clearinghouse, but much more work is needed to complete data organization, web site development, and eventual start-up with debugging and modification. **(Data collection and organization, 1<sup>st</sup> year of project; web site development, 2<sup>nd</sup> year of project; system start-up and ready for public use, 3<sup>rd</sup> year of project.)**
  - b. *Evaluating an Existing Risk-Based Program* – The Texas Commission on Environmental Quality (TCEQ) has implemented a Risk-Based Investigation Strategy (RBIS) to prioritize facilities for regulatory inspection. A point system is used to score facilities based on the type of industry, kinds of pollutants, location, and compliance history. This approach appears to work well in those sectors where a broad range of risks are evident (wide spectrum of scores), but there is more uncertainty in other sectors such as Underground Storage Tanks (UST) where a tighter spectrum of scores exists. NBC, URI and RIDEM project personnel will work with TCEQ staff “as a learning state”. Possible integration with ERP and risk measurement opportunities will also be investigated. **(Ongoing throughout project)**
3. Interstate Collaboration (EPA Funds - \$65,000) – In addition to the work with Texas mentioned above, other interstate projects are planned.
- a. *Minnesota/Region 5 Autobody ERP* – URI and RIDEM will provide technical support to the Region V auto body NESHAP ERP demonstration project in the form of workbook and checklist development, inspector training and overall program development. The Region 5 project will leverage the ERP Common Measures for auto body already developed in a multi-state/EPA partnership project, and will generate ERP results data which will be submitted to the States ERP Consortium and EPA for national ERP results reporting. This project’s proposers believe that a collaborative initiative with Region 5 and the multi-state SQG-focused project in the Northeast are synergistic efforts which, coordinated through the States ERP Consortium, will elevate the scale of ERP, build interstate ERP infrastructure, and significantly boost the visibility and viability of ERP. Each of these developing projects builds results and experience in complementary (not overlapping) environmental, programmatic, or functional areas, so that each can learn from the other and strengthen the overall ERP effort. This work will be part of a coordinated effort supported by two other proposed projects: “Region 5 States Environmental Results Program for Autobody Refinishing Shops”, and “Common Measures Project 2 (CMP2) -



An Eight States Project for Analyzing & Improving ERP Measurement Results & Developing Beyond Compliance Programs”. **(Ongoing throughout project.)**

- b. *State of Washington Autobody ERP* – The State of Washington, Department of Ecology, has commenced its first round of ERP for the autobody industry. Baseline inspections were scheduled to begin during the Fall of 2008. Washington developed a workbook and checklist with the help of materials already created and used by Rhode Island and other states. URI and DEM will provide ongoing assistance to Washington in all aspects of the autobody ERP. **(Ongoing throughout project.)**

### **E. Outcomes and Measures**

Various environmental outputs and outcomes are expected for the proposed project. For the Lean-P2 initiative, 20-30 RI companies are expected to participate over the 3 year project period. As explained in D.1, the amount of work required for each company can vary widely. And it is estimated that 50-60% of those companies that participate realize some type of improvements and savings. The extent of improvements will be monitored using the upgraded metrics system originally developed by RIMES. RIMES has helped over 600 companies reduce waste and improve processes. The businesses range in size from small companies to multi-national organizations. Improvements have typically been observed as ranging from 20 to 50 percent reductions in waste with return on investments as high as 40 to 1 (for every 1 dollar invested by a company, 40 dollars are recovered). RIMES clients are surveyed by an independent 3<sup>rd</sup> party survey house, hired by the national Manufacturing Extension Partnership, one year upon the completion of their project. Specific questions regarding the impact of the services received from RIMES are asked of the client companies. The results are then tabulated and provided back to RIMES in aggregate metrics on a quarterly basis. It is difficult to quantitatively predict reductions in waste and energy/water use, or money saved, but some measurable combined statistics for the past year include

- Increased Sales - \$2,497,439
- Retained Sales - \$5,392,439
- Cost Savings - \$4,427,375
- Investments in Plant or Equipments - \$2,730,750
- Investment in Information Systems - \$154,000
- Investment in Workforce Development \$669,131
- Investment in Other Areas - \$141,000
- Avoidance of Unnecessary Investments - \$391,750
- Savings on Investments - \$2,706,705
- Jobs Created – 25, Jobs Retained – 137

The review and organization of the various water monitoring databases in RI will result in a centralized clearinghouse that is easily accessible and can be used to determine high risk areas. In addition, the risk-based work will require an analysis of current programs that have implemented risk modelling such as Texas and the UK. RI project personnel will meet with Texas (TCEQ) staff to assist them in the evaluation of the current program. Potential outcomes include the optimization of the current system with ERP tools and possible implementation in RI for a targeted sector on an experimental basis.

Work with other states will result in ERP-related outcomes for the autobody sector in Region 5 which include number of shops that certify, compliance rates (as a result of indicator analyses), and the extent of pollution prevention implementation. Other interstate collaboration efforts will include support for the State of Washington autobody ERP and include joint site visits and data analysis support.

**Past Performance – Programmatic Capability and Reporting Environmental Results.**

The following is a list of recently federally funded grant projects/programs (EPA) performed by the various project partners (NBC, RIDEM, URI, and RIMES):

Project	Participants	Results
Sustainable Energy Management Practices for WWTFs	NBC with URI, RIDEM and RIMES	Project began in 2008. Preliminary work included meetings to structure energy training, communication with biodiesel manufacturers, inspections of selected restaurants for FOG, development of draft self-certification checklist
Underground Storage Tank Environmental Results Program	RIDEM with URI	Conducted 6 training sessions with approximately 125 facilities represented (approximately 18% of regulated universe); 91% participation rate with mandatory program; average 74% baseline compliance with 16 selected EBPIs; developed and implementing mobile inspection program using Tablet PCs; Computation of statistically significant improvement rates underway; coordination with other states like FL and NH to compare different UST programs; reports and timeline on schedule for the most part.
Auto Salvage Sector Environmental Results Program	RIDEM with NBC and URI	Project almost complete. Baseline and post-certification inspections completed. Several key indicators observed as statistically significant improvements including mercury switch removal. All reports and activities completed according to schedule. Final report to be submitted in 2009.
MS4 Construction Site Runoff ERP	RIDEM with URI	New project to develop a self-certification program using ERP tools for the use of BMPs to control erosion and sedimentation from construction sites greater than one acre. Random list of 80-100 construction sites generated for baseline inspections with approximately 50% inspected, but problems encountered with obtaining meaningful data because of inconsistencies with construction activities.
Pollution prevention projects	URI with RIDEM and NBC	Annual EPA P2 grants program used to support industry technical assistance and ERP initiatives like autobody. Typically, at least 5-10 companies receive assistance annually. Reductions in waste and hazardous material use recorded. Autobody ERP includes 2 rounds of certification and training for approximately 20% of the regulated universe; 50% participation rate with the voluntary program; Significant reductions in exposure to auto sanding dust and methylene chloride; statistically significant improved compliance with 24 EBPIs; a paper authored by OTCA staff has been accepted for publication in the <i>American Journal for Public Health</i> .

**Budget Summary (3 years)**

**State:** Rhode Island

**Agency:** Narragansett Bay Commission (NBC)

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**Project Title:** Lean/P2 Partnership and Risk-Based ERP Initiatives

	<b>Total Project Costs</b>	<b>Proposed State Leverage Funds</b>	<b>EPA</b>
<b>Funding</b>			
<b>Staff Salaries and Benefits</b>			
NBC Staff	\$100,000	\$50,000	\$50,000
<b>Travel</b>			
Training, conferences, meetings	\$6,000		\$6,000
<b>Supplies</b>			
Computer equipment, software, mailings	\$4,000		\$4,000
<b>Sub-contracts</b>			
University of RI	\$262,240	*\$42,240	\$220,000
RIDEM	\$20,000		\$20,000
RIMES	\$50,000		\$50,000
<b>TOTAL:</b>	<b>\$442,240</b>	<b>\$92,240</b>	<b>\$350,000</b>

\* Waived overhead difference on URI contract [49% - 25%] (25% URI overhead to be used, normal overhead rate is 49%)