

US EPA ARCHIVE DOCUMENT



# State Innovation Grant Program:

## Narragansett Bay Commission – Sustainable Energy Management Practices for Wastewater Treatment (2008 Competition)

### The State Innovation Grant Program

In 2002 EPA introduced the State Innovation Grant Program to support efforts led by state environmental agencies to test innovative approaches for achieving better environmental results and improved efficiency in permitting programs. Between 2002 and 2007, the State Innovation Grant program competition awarded over six million dollars to support 35 state projects that test permitting innovation for a variety of regulated entities including several small business sectors. A summary of the awards by year appears in the table below.

State Innovation Grant Program Statistics, 2002-2007			
Competition Year	Proposals Submitted	Proposals Selected	Total Program Funding (\$)
2002/2003	29	6	\$618,000
2004	33	9	\$1.425 Million
2005	26	7	\$1.479 Million
2006	25	6	\$1.243 Million
2007	17	7	\$1.611 Million
2008	12	3	\$0.825 Million
<b>Cumulative Total</b>	142	38	\$7.201 Million

"Innovation in Permitting" has been the theme of the State Innovation Grant competition since its inception. In the last three competition cycles states received awards for projects in the following three categories:

- **The Environmental Results Program (ERP)** is an innovative approach to improving environmental performance based on a system of the interlocking tools of compliance assistance, self-certification (sometimes, where permissible, in lieu of permitting), and statistically-based measurement to gauge the performance of an entire business sector. The program utilizes a multimedia approach to encourage small sources to achieve environmental compliance and pollution prevention. (See: <http://www.epa.gov/permits/erp/>)
- **Environmental Management System (EMS)** is a system involving a continual cycle of planning, implementing, reviewing and improving the processes and actions that an organization undertakes to meet its business and environmental goals. EMSs provide organizations of all types with a structured system and approach for managing environmental and regulatory responsibilities to improve overall environmental performance and stewardship. (See: [www.epa.gov/ems/info/index.htm](http://www.epa.gov/ems/info/index.htm))
- **Performance Track** is a partnership that recognizes top environmental performance among participating US facilities of all types, sizes, and complexity, both public and private. (See: <http://www.epa.gov/performance-track/>)

NCEI has provided awards also for projects testing watershed-based permitting, and for permit process streamlining in past competitions. For more information on the history of the programs, including information on solicitations, state proposals, and project awards, please see the EPA State Innovation Grants website at <http://www.epa.gov/innovation/stategrants>

### Project Background:

Municipal Wastewater Treatment Facilities (WWTF) are designed and operated to reduce the environmental impacts of municipal wastewater discharges on local receiving waters, but even when they are well-operated, the consumption of energy in their operation can add to their impact on the environment. The Narragansett Bay Commission (NBC) owns and operates Rhode Island's two largest WWTFs, which together provide wastewater collection and treatment service to approximately 1/3 of the state's population.

Treatment facilities often struggle with difficult-to-treat materials that come to the treatment plant in effluents from many sources, among them, grease that enters the sewer system in effluent from food preparation. Grease causes sewer line obstruction and causes excessive wear on pumps and other equipment, as well as inhibiting overall waste treatment effectiveness because it is difficult to treat. Decomposition of grease in the treatment process and in effluents also creates a large biological oxygen demand (BOD) that would be harmful to receiving waters if not adequately treated by the WWTF.

### Project Description

The Narragansett Bay Commission State Innovation Grant Project has two components. First, NBC and its partners will develop a program for Rhode Island Waste Water Treatment Facilities (WWTFs) on Energy Focused Environmental Management Systems (EF-EMS) (see [http://www.epa.gov/waterinfrastructure/bettermanagement\\_energy.html](http://www.epa.gov/waterinfrastructure/bettermanagement_energy.html)), using the *plan-do-check-act* approach to continuous process improvement, to reduce energy use and improve energy efficiency for WWTFs. Second, NBC will institute an Environmental Results Program (ERP) for the food processing business sector through its discharge pre-treatment permitting program working with the Rhode Island Department of Environmental Management (RI DEM) and the University of Rhode Island. The ERP program will help these businesses improve oil/grease discharge compliance and create incentives to encourage the use of collected grease as a renewable energy source.



## Connection to EPA's Goals

The project goal for the Sustainable Energy Management component of the project will be to develop and implement *Energy Focused Environmental Management Systems* (EF-EMS) for WWTFs including:

- use of the *plan-do-check-act* approach;
- use of the EPA *Energy Guidebook* to train participating facilities on how to establish and implement a successful *Energy Focused Environmental Management System* (EF-EMS);
- developing energy-use baselines for each participating WWTF;
- conducting energy use assessments for participating facilities;
- identifying potential *Energy Conservation and Efficiency Measures* (ECEMs);
- assessing renewable energy resource opportunities; and
- assessing the implementation of the *Plan-Do-Check-Act* aspect of each EF-EMS.
- Additionally, the project will establish a *Roundtable* to assist each participating WWTF with implementation of their EF-EMS.

The goal of the Fats, Oil and Grease (FOG) Environmental Results Program (ERP) for the food processing business sector will be to improve management of FOG resulting in reduction in FOG discharge to public sewers through:

- enrollment of food processing facilities in the program;
- development of a FOG management checklist and set of Best Management Practice (BMP) factsheets for business operators;
- development of a baseline compliance estimate for participating facilities through facility assessments;
- development of a compliance assistance program that includes compliance information hand-outs on suggested BMPs and a FOG management "self-certification" form for restaurants;
- conducting ERP follow-up assessments; and
- development of an assessment of ERP-related compliance improvement and BMP implementation through statistical comparison of compliance improvements between the baseline and post-implementation assessments.

Additionally, the project will identify both opportunities and problems associated with using collected FOG for possible use for the production of bio-diesel fuel and for bio-gas production.

By combining the EF-EMS and ERP approaches to environmental programs, NBC will test an innovative approach to wastewater management and regulation as well as renewable energy practices. This State Innovation Grant Project is designed to take full advantage of NBC's experiences and expertise with respect to efficient WWTF energy management and apply those experiences initially to a wider community of WWTFs within the State of Rhode Island and eventually to WWTFs on a regional and national level.

## Benefits of the Project

NBC anticipates that this project will improve the energy efficiency of participating WWTFs by a minimum of 5-10% and, by utilizing renewable energy opportunities, decrease energy demand from the local power grid by as much as 10-20%. By reducing the energy demand of participating WWTFs through more efficient energy use and the use of renewable energy sources, the project will reduce the generation of greenhouse gases while accomplishing the same or better level of wastewater treatment. The project outcomes include cleaner air and water resulting in healthier communities and healthier ecosystems.

## Project Contacts:

For more specific information on the Narragansett Bay Commission project please contact one of the individuals below:

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