Oil Spill Prevention, Administration and Response (OSPAR) Fund

Annual Report
FY 2006

F/V AGGRESSOR, Hard Aground, Black Point, Block Island
November 21, 2005

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Introduction

The Oil Spill Prevention Administration and Response (OSPAR) Fund, RIGL Chapter 46-12.7, was created in 1996 (modifying a prior statute adopted in 1990) in the aftermath of the environmentally devastating North Cape oil spill. The fund was created, and is continually supported, by the assessment a $0.05 per barrel fee on petroleum products received at marine terminals in Rhode Island. The purpose of OSPAR is multi-faceted. It provides funds to promptly respond, contain and remediate oil spills. OSPAR funds are also utilized to maintain a state of emergency response readiness through responder training and equipment acquisition. The fund further provides, in the event of a significant release, funding for emergency loans to workers affected by a spill as well as damage compensation of legitimate claims that cannot otherwise be compensated by responsible parties or the federal government. The funds and the operations conducted in accordance with the statute are managed by the Rhode Island Department of Environmental Management (DEM).

Section 46-12.7-7 of the statute requires the DEM Director to submit an annual report to the legislature on the OSPAR Fund. This report summarizes the status and use of the fund for FY 2006.

Revenues & Expenditures – FY2006

The OSPAR account started FY 2006 with a balance forward of $3,907,506. During FY 2006, the $0.05 per barrel fee resulted in the collection of $2,336,237 after the ten percent cost recovery. The OSPAR account also received $74,762 as reimbursement for expenditures from the Shellfish Restoration project and $10,000 for the fisheries restoration project at Factory Brook. Personnel, operating and project expenditures for FY2006 totaled $1**,**919,526 which included $250,000 for the PORTS Navigational system in Narragansett Bay. In addition, $804,882 was transferred from the OSPAR account to the Coastal Resource Management Council for the South Coast Restoration project ($450,573) and for Habitat Restoration projects (354,309). A more detailed review of expenditures is provided below.

ACTIVITIES– FY2006

Summary

With regard to pre-spill preparedness, the OSPAR Fund was used in FY2006 for personnel and operating expenses and the PORTS Program. Personnel costs assigned to the OSPAR Fund included the following: DEM Emergency Response Team (full salaries of Emergency Response Administrator, partial salaries of four other team members, and full salary of an Executive Assistant assigned to the OSPAR program); DEM GIS Supervisor (partial); and staff from DEM Office of Waste Management engaged in oil-related investigation and remediation activities (partial); and staff from DEM Office of Technical and Customer Assistance, Division of Fish & Wildlife, and Office of Water Resources responsible for carrying out DEM activities related to the Providence River Dredging Project (partial). These salary and benefit costs totaled

$795,883. Operating expenses charged to the OSPAR Fund included: vehicle maintenance, purchase and lease costs ($62,616); emergency response equipment ($17,806); training and travel ($16,607); computer hardware, software and telecommunications ($14,826) and the purchase of a Barber surf rake ($48,500). These operating expenses totaled $160,355.

In FY2006 the DEM Emergency Response Team, which operates as an all hazard response program and incorporates the oil spill prevention and response functions of DEM, continued to perform at a high level with respect to oil spills, hazardous material incidents, domestic preparedness, and other state emergencies. There were 1,007 emergency response investigations undertaken by the team during FY2006. The incidents comprised two primary categories, hazardous material responses and oil spills. Seventy-three percent, a total of 737incidents, were responses to oil spills. The actions of the Emergency Response program during this reporting period resulted in removal from the environment of 54,000 gallons of oil and 2,300 tons of oil spill debris.

FY2006 EXPENDITURES

Personnel

Full salaries and benefits of DEM Emergency Response Administrator and partial support for four other members of the DEM Emergency Response Team. All five personnel serve as first responders and are also responsible for administering the OSPAR Program both in terms of pre-spill readiness and post-spill response. An Executive Assistant is also assigned to the OSPAR program. Partial support of salary and benefits of DEM GIS Supervisor. This individual is responsible for maintaining a comprehensive internet mapping application for planning, assessment and response to oil spills or other environmental emergencies in RI marine waters. This individual is also responsible for developing and maintaining a complete data inventory on an internal network capable of supporting responders during an oil spill or other environmental emergency. In the event of a spill, the GIS Supervisor coordinates the collection and dissemination of locational data documenting extent of spill, fish kills, etc. In the aftermath of a spill, support is also provided for natural resource damage assessments to aid in the collection of damages from responsible parties. Partial salaries and benefits for personnel from DEM Office of Legal Services, Waste Management and Compliance & Inspection.

$ 795,883

Operating

Vehicle Maintenance & Readiness	$ 62,616
Training & Travel	$ 16,607
Cell phones, pagers	$ 8,407
Computers- Hardware/Software/Telecommunications	$ 6,419
Supplies: Office, Scientific, Miscellaneous	$ 17,806
Barber Surf Rake	$ 48,500
	$ 160,355

Capital Projects

Narragansett Bay PORTS (annual maintenance)	$ 250,000
Replace NE Pilots DGPS Navigation system	$ 171,280
Coastal Institute at the University of Rhode Island (*Contracted to continue developing plans and emergency response capabilities for RIDEM; cost of project will be reimbursed through Department of Homeland Security grant)*	$ 109,502
Dawley Park ER/OSPAR facility (*See FY2005 OSPAR Report*)	$ 154,506
	$ 685,288

Other Projects Funded by OSPAR Fund

Coastal Resource Management Council (CRMC)	
South Coast Restoration Project	$ 450,573
Habitat Restoration	$ 354,309
Town Pond Restoration Project (*See FY2005 OSPAR Report*)	$ 278,000
	$1,082,882

Total OSPAR Expenditures **$2,724,408**

OIL SPILLCLEAN-UP ACTIVITIES

The DEM emergency response team responded to 737 oil spills during FY2006. This represents a 13 percent increase in oil spill responses compared to FY2005. The amount of oil products and oil spill debris remediated during these response activities is estimated to be 54,000 gallons of oil and 2,300 tons of oil spill debris. In FY2005, the emergency response team over saw the removal from the environment of 16,600 gallons of oil and 3,100 tons of oil debris. There were 83 more oil spill responses in FY2006. The amount of oil recovered increased 300 percent compared to FY2005. The amount of oil debris recovered during FY2006 decreased by 30 percent. These

statistics indicate that oil spills in FY2006 were generally larger in composition but were more readily addressed as liquid recovery than as removal of oil impacted soils and debris.

The circumstances causing these releases and the impacts generated were varied. The categories of oil spills and the relative percentages of each spill type are illustrated in figure 1.

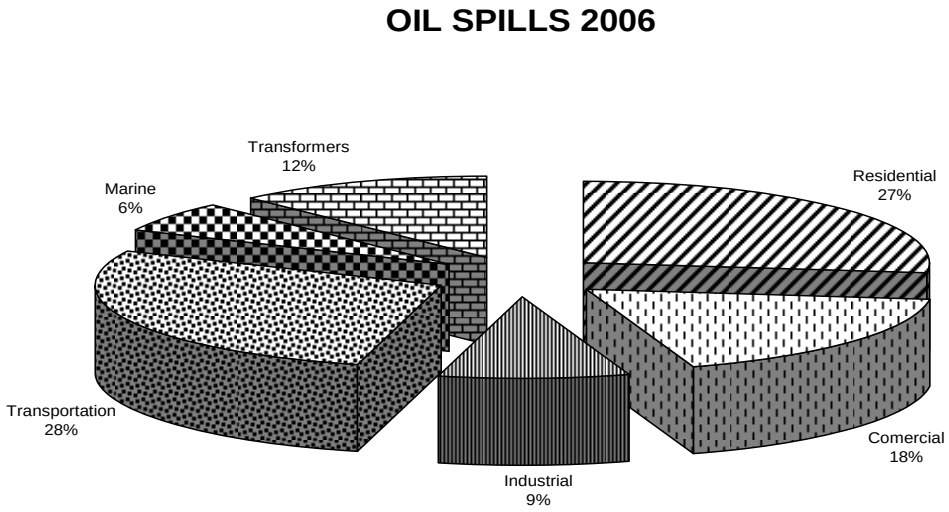

Figure 1. FY2006 Oil Spills by Category

The greatest percentage of spills, 28 percent, was transportation related. Most transportation spills were relatively small and were the result of motor vehicle accidents. Residential oil spills comprised the next largest category accounting for 27 percent of department responses. Releases from residential heating oil tanks are extremely problematic. Cleanup can be expensive (particularly if the oil migrates into the subsurface) and many homeowner insurance policies do not provide coverage. The department has posted information on the Emergency Response web page regarding how to minimize the risk of a spill or release from a residential oil tank at http://www.state.ri.us/dem/programs/director/emerresp/prevent.htm). Spills from transformers comprised 12 percent of the spill events which is consistent with what was observed during FY2005. Commercial and industrial spills combined equaled 27 percent of the total spill responses. Oil spills in Narragansett Bay comprised 6 percent of response activities.

The percentage of oils spills by category (figure 2) was relatively consistent during FY2006 and Fy2005. There was a slight increase in residential and commercial spills, 4 and 3 percent respectively. Marine spills responses decreased by 5 percent and electrical transformer incidents decreases by 2 percent. The percentage of

transportation related spills was constant, accounting for 28 percent of oil spill responses.

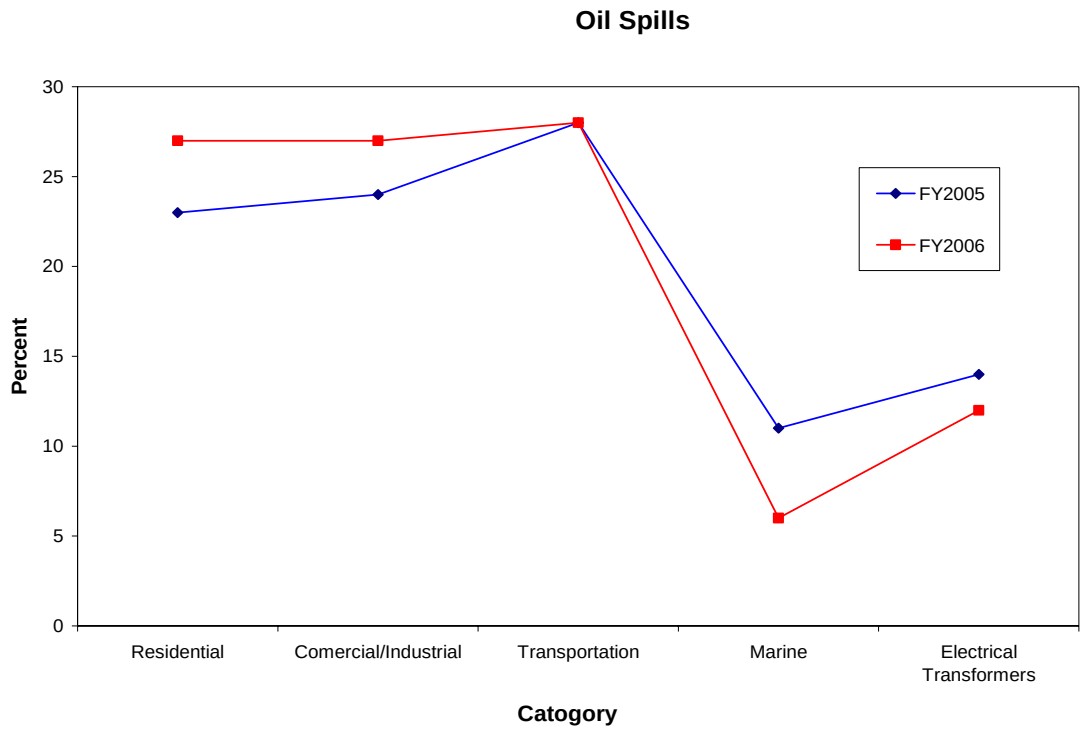

Figure 2. Comparison of Oil Spills FY2005 and FY2006

F/V AGGRESSOR

The fishing vessel Aggressor, a 79 foot dragger returning to New Bedford, ran hard aground 200 yards off the southern shoreline of Block Island on November 21, 2005 (figure 3). Three crew members were removed safely from the vessel by the United States Coast Guard. A slight oil sheen was also observed at the time of the casualty.

Initial assessment of the integrity of the vessel revealed that the fuel tanks had been breeched and there was a 5 foot by 6 foot hole in the hull to the engine room. Approximately 1800 gallons of diesel fuel were lost at the time of the grounding. Fortunately there were no sensitive receptors in the area at the time of the casualty. Because of the agitated state of the seas, the spilled diesel fuel quickly dissipated. There, however, remained on board a significant amount of lube oil and diesel fuel within the day tank. A plan was developed to recover the oil product. Oil recovery bladders which DEM had purchased, subsequent to the *North Cape* spill, for transfer and storage of product on water were ideally suited for use in the removal operation. In total 500 gallons of lube oil and 100 gallons of diesel fuel were transferred into the oil recovery bladders. The bladders were then towed to New Harbor where the oil was pumped off and properly disposed.

Figure 3. F/V Aggressor Aground, South Shore, Block Island December 2005

Figure 4. F/V Aggressor, Heavy Port List, August 2006.

A salvage plan was developed for the *F/V Aggressor* in early December 2005. The salvage required the services of a large crane-equipped recovery barge. The operation also required a sufficient weather window to bring all the required equipment to the site of the wreckage and to perform the salvage. Because of unfavorable weather and the lack of availability of the required barge and crane (most salvage equipment at this time

had been relocated to the Gulf in response to hurricane *Katrina*), the salvage operation was repeatedly delayed. These delays were of great concern. The summer tourist season was beginning. While the vessel was located in an isolated and difficult area of Block Island to access, the vessel did present an extremely dangerous attractive nuisance. Fortunately there were no reported incidents of unauthorized individuals trying to access the *F/V Aggressor* during the summer tourist season.

In August of 2006 on site salvage operations finally got underway. The 180 foot crane barge OVUS I was brought from New York City to assist in the recovery.

Figure 5. Crane Barge OVUS I Prepares to Lift Bow Section

The integrity of the *F/V Aggressor* had been severely compromised by seas and storms since the initial casualty of November 2005. The vessel was guillotined to facilitate removal by the crane. The aft and forward sections were removed separately.

Figure 6. *F/V Aggressor* transported to New Bedford for Scrap

The *F/V Aggressor* had been badly damaged; part of the shell plating, the engines and other mechanical appurtances separated from the stern and sank during the salvage operation. This remaining debris from the wreck of the F/V Aggressor was removed on November 4, 2006 nearly a year after the ship initially ran aground.

October 2005 Floods

On October 14th and 15th 2005 over 7.5 inches of rainfall occurred in Rhode Island. This was in addition to the nearly 5 inches of rain that had fallen during the first thirteen days of October. In comparison the monthly average total rainfall for October is only 3.4 inches. The excessive rain caused considerable flooding, resulting in several significant oil spills as well as raising public safety concerns related to the integrity of many dams throughout the state. The state Emergency Operations Center was opened. DEM personnel manned the center and established two primary operations; the first to coordinate response to spill events and the second to respond to questions and concerns related to dam safety.

The emergency response team responded to a gasoline station located at 1015 Boston Neck Road in Narragansett. This station was in the process of retrofitting the piping of three 10,000 gallon underground storage tanks (UST's). The concrete and backfill had been excavated from the top of the tanks. The tank fills had not been adequately secured. Rain water entered the tanks displacing approximately 18,000 gallons of gasoline into the excavation. The DEM Emergency Response team provided expertise and leadership, working in conjunction with the station owners and their environmental contractors to immediately initiate recovery operations and minimize impact to abutting property owners and the environment. Approximately 17,800 gallons of gasoline and 300 cubic yards of gasoline contaminated soil were recovered.

The department received many calls from homeowners. The majority of these call originated from the River Street and Fletcher Avenue section of Cranston where the Pocasset River had flooded the neighborhood. In one home, water entering the basement dislodged the heating oil tank resulting in thousands of gallons of oily water in the basement. At another Cranston location, a sump pump was found to be discharging oil onto the street. At another residence, the water had reached the ceiling of the basement, causing the oil tanks to float and release 500 gallons of oil. In total, the Emergency Response team responded to seven oil spills in Cranston that were the direct result of flooding. The team worked with homeowners, their insurance companies and clean-up contractors to mitigate the spills and to initiate recovery.

DEM staff from the Compliance & Inspection Division, with primary responsibility for dam inspection, was called upon to inspect several dams during the flooding. At the privately owned Cranston Print Works in Cranston, the mill pond was within 6 inches of overtopping their dam. Based on a recommendation from the DEM, the owners contacted their local EMA and a slow, controlled release of water was undertaken. The privately owned Yorker Mill Dam located at the end of Dorset Mill Road in Exeter was also inspected at the request of town officials. This dam was deemed unsafe and conditions were continually monitored during the flood. The Slocum Reservoir Dam,

located in Camp Canonicus in Exeter, was also inspected at the request of town officials and that dam was found to be operating properly. State and local officials closely monitored dams throughout the state. There was a strong sense of relief when the rains stopped and the water level in the rivers began to subside.

There has been recent legislative and regulatory action designed to increase public safety and lessen the risk of dam failures. In 2006, two amendments to Rhode Island General Law Chapter 46-19 were enacted. Section 4 was amended to authorize DEM, in an emergency, to take necessary actions to mitigate an unsafe condition at a dam and to assess the costs of those actions against the dam owner. Section 9 was amended to require a city or town where a high or significant hazard dam is located to complete, by July 1, 2008, an Emergency Action Plan (EAP) for the dam. Rhode Island's Emergency Management Agency (RIEMA) is responsible for coordinating development of the EAPs and must give final approval for the EAP to be considered complete. Also in 2006, DEM held a workshop on draft Dam Safety Regulations. In early 2007, DEM will initiate promulgation of these regulations.

PORTS Program and North East Pilots

OSPAR continues to support the Narragansett Bay Physical Oceanographic Real-Time System (PORTS) that began operation in June 2000. PORTS, which is operated by the National Oceanic and Atmospheric Administration (NOAA), is comprised of five monitoring stations located in Narragansett Bay that monitor stage of the tide, currents, and weather. This data is reported every six minutes to a central receiving computer, which processes the information. Real-time information regarding tides, current and weather can be accessed by telephone at 401-849-8236 and 1-888-301-9983 or on the internet at www.coops.nos.noaa.gov/nbports/nbport. NOAA continuously monitors the in-water sensors and conducts data validation. This 24/7 quality control allows NOAA to guarantee the accuracy of the data. As a result, the state-licensed pilots who guide the largest vessels into port in Narragansett Bay are able to make decisions on vessel movements with real-time information.

State-licensed pilots can directly access PORTS information while traversing Narragansett Bay using the STARLINK portable navigation system purchased with OSPAR funds. The systems have wireless capability that allows the acquisition of real-time data from PORTS as well as real-time weather information from the National Weather Service. The navigation systems are extremely sophisticated, utilizing a Differential Global Positioning System that accurately and safely determines the position of a vessel being piloted through the bay. The system uses the U.S. Department of Defense Global Positioning System and the Canadian Coast Guard network of differential radio beacons to provide accurate navigation information in conjunction with accurately surveyed maritime charts provided by the U.S.Army Corps of Engineers. In FY2006 OSPAR funds were used to upgrade the STARLINK hardware and software used by the pilots. The goal of the program is to provide the greatest degree of safety

possible for commercial ship traffic in Narragansett Bay and the Ports of Providence and Quonset.

EMERGENCY RESPONSE PREPAREDNESS

Emergency Response Plan

The department continues to improve its emergency response capabilities by constantly revising and improving the Emergency Response Plan (ERP). The ERP can be accessed on the department web page at: http://www.dem.ri.gov/topics/erp.htm. This page lists the sections of the RI DEM Emergency Response Plan (ERP) with links to the full text (in pdf format). The following is an outline of the ERP.

- **Section 1** – Introduction to DEM priorities and authority.
- **Section 2** – Emergency notifications, including contact names, E-mail, FAX and phone numbers.
- **Section 3** – Checklist of emergency response issues.
- **Section 4** – Policies, standard procedures, and forms for the DEM Office of Emergency Response.
- **Section 5** – Guidelines for environmental sampling for information, cleanup/disposal, and criminal investigation in an emergency.
- **Section 6** – Department emergency support, including Incident Command Structures (ICS), resources, and response plans keyed to particular sorts of threats:
    - Hazardous Materials / Environmental Protection Plan
    - Oil Spill Plan
    - Fish And Wildlife Incidents In Rhode Island Waters
    - Fish Kill Plan
    - Hurricane Plan
    - Prescribed Fire Plan
    - Emergency Response Procedures on State Beaches
    - Animal Disaster / Animal Care Plan
    - Animal Disease Plan
    - Mosquito-Borne Zoonotic Disease Plan
    - Radiological Emergency Ingestion Exposure Pathway Plan
    - Drought Plan

    - Plant Health Emergency Management Plan
    - Continuity of Operation (COOP) for DEM

- **Section 7** – Policies, plans, and forms for health and safety protection, including respirators and personal protective equipment (PPE).
- **Section 8** – Job aids for key positions in Incident Command (ICS).
- **Section 9** – Template plans for oil-spill response, including decontamination, disposal, site safety, and demobilization.
- **Section 10** – Forms for Incident Command.
- **Appendix 1** – Oil Spill Field Operations Guide (FOG).
- **Appendix 2** – RI Oil-Spill Science Plan for Natural Resource Damage Assessment (NRDA).
- **Appendix 3** – Glossary of abbreviations and definitions.

Fast Water Booming

In October 2005, DEM staff, environmental response contractors, CRMC and the Coast Guard joined forces for a 3 day training course titled "*Inland Water Oil Spill Response - Operations Level*." This course was presented by DOWCAR Environmental Management, Inc., a New Mexico company known for its knowledge and expertise in the application of fast water booming techniques to control oil spills. This was an opportunity for DEM staff from various divisions as well as the department's response partners in the private and public sector to train together and learn effective oil response techniques for rivers and other fast moving waters. The course combined classroom and field exercises to reinforce the lessons learned and provide hands on training to develop the skills needed to control oil spills in fast water.

During the three day course, attendees updated their knowledge about relevant governmental regulations, Incident Command System (ICS) procedures for oil spill response, boom design and construction and river boom deployment techniques.

The field component of the course was organized using the incident command system (ICS). ICS leadership positions were rotated throughout the training. Various containment strategies were deployed. As the course progressed, larger, faster and more challenging river locations were utilized to practice the skills learned.

Figure 7. Class Participants Prepare to Deploy Boom in the Pawcatuck River

Figure 8. Oil Boom, Deployed to Deflect Oil to a Collection Point

Barber Surf Rake

In FY2006 the DEM Emergency Response team purchased a Barber Surf Rake. This surf rake is multi functional. It can efficiently remove tar balls and other oil deposits from beaches and was used extensively in France following the *Prestige* spill. It is equally adept at removing other beach debris such as sea lettuce. The decomposition of excessive sea lettuce in the Conimicut section of Warwick and the Still House Cove area of Cranston has resulted in the production of significant concentrations of hydrogen sulfide (H_2S) gas. These episodic H_2S events created nuisance conditions and were potential health concerns for those living in the area with compromised respiratory functions. The surf rake was used effectively during the 2006 summer months to remove sea lettuce from the beaches, reducing the potential for the formation of H_2S gas.

Figure 9. Barber Surf Rake Collecting Sea Lettuce along Conimicut Shore

2006 Industry Led Oil Spill Response Drill

As part of the United States Coast Guard (USCG) Preparedness Response Exercise Program (PREP), Motiva Enterprises of Providence hosted a large scale oil spill response exercise February 16th and 17th. The first day was a facilitated table top exercise. The second day was full scale exercise including activation of the state emergency operation center. The exercise scenario requires a UNIFED COMMAND based response organization to be comprised of responders from local, state, federal and industry as well as community representatives and other stake holders.

The following spill scenario was provided to the participants: Record snow fall of over 3' over a 24 hour period. Snow drifts pose significant obstacles to recovery efforts. The night shift operator at Motiva hears a deafening loud groaning/metal tearing sound which permeates through the building and then the building shakes, tank 1 has catastrophically failed causing a large wave of product to "ski jump" over the dike wall releasing 700,000 gallons of oil into the Providence River.

The drill was designed to test local state federal and industry response plans. Specifically the drill focused on the following objectives: 1) Upon alerting of oil spill exercise scenario, complete notifications and verifications in accordance with the Area Contingency Plan and Facility Response Plan. 2) Establish a unified command staff appropriately for the level of oil spill response required by the exercise scenario; establish a centralized web page; hold a press conference. 3) Activate initial pollution response activities including deployment of boom and skimmers. 4) Follow Incident Command System (ICS) procedures including the drafting and use of appropriate ICS forms; develop portions of Incident Action Plan (IAP) and complete an ICS 201 (incident briefing form). 5) Exercise the local spill management teams. 6) Test protection straggles for sensitive resources identified by the Joint Design Team (JDT). 7) Evaluate hazards to the environment and public health. 8) Hold pre-Natural Resource Damage Assessment "NRDA" coordination meeting and define assessment needs. 9) Evaluate air monitoring capabilities during response.

State, Local, Federal and industry responders were well represented in the two day exercise. With the exception of deployment of response equipment (weather conditions at the time of the drill negated this evolution) all of the objectives were met. The drill became an invaluable training opportunity, foreshadowing a future incident. Six months later, the unified command established for the drill was called upon to mange the Motiva Dock Fire. The success of the response to this potentially catastrophic fire was in part based on the lessons learned during PREP and the opportunity PREP provided to work with representatives of Motiva and other responding agencies.

Other Training Activities

The Emergency Response team continued to improve its response capabilities through training. During FY2006 team members continued to build on the all hazard model. Members of the Emergency Response team participated in courses and training in Response to *Radiological Transportation Accident*, *Hazwopper Refresher Training*, *Incident Management and Response to Suicide Bombers*, *Inland Oil Spill Response and Fast Water Booming* as well as *Search and Rescue training.*

The DEM Emergency Response program also continued to provide training. The training provided included *Hazardous Materials & Criminal Investigation* for the State Police Training Academy, *Hazardous Materials Recognition and Identification* for the Department of Transportation and *Environmental Health & Pesticide Safety Education* for the University of Rhode Island.

HABITAT RESTORATION PROGRAM

Annually $250,000 from the OSPAR fund is transferred to CRMC in accordance with RIGL § 46-23.1-3**.** The funding is in support of the Rhode Island coastal and estuarine habitat restoration trust fund. The following short project descriptions are taken from the CRMC web site. Additional information can be found at http://www.crmc.state.ri.us/

Walker Farm Salt Marsh Restoration

The Walker Farm salt marsh is a 15-acre marsh that has been tidally restricted for the last 60 years. The tidal hydrology has been altered by a number of roads and dam structures that restrict tidal flow to the entire marsh. These structures include a flap-gated earthen dam built to allow agricultural use of the marsh. In the late 1960s, the Town of Barrington made this original dam permanent to establish waterfowl habitat. The dam created a brackish pond that flooded the former salt marsh and restricted saltwater flow into the marsh, allowing the expansion of *Phragmites australis.* The goal of this restoration project is to restore the tidal hydrology of the Walker Farm salt marsh. The restoration will entail addressing the five tidal restrictions, two former dirt farm roads and three culverts. Tidal exchange will be improved by removing restrictions to tidal flow, increasing culvert sizes, and removing fill placed upon the marsh surface. Restoring tidal hydrology will facilitate the return of a diverse salt marsh plant community, increase nekton production and diversity, and benefit coastal bird diversity and abundance. Walker Farm salt marsh is located along the Wampanoag Trail in Barrington, Rhode Island. The salt marsh is approximately 15 acres and the open water area, former salt marsh, is approximately 8 acres. Walker Farm salt marsh is part of the Hundred Acre Cove estuary. The hydrology of the Walker's Farm salt marsh has been altered by a number of roads and dam structures that restrict the amount of salt water entering the marsh. Restricted tidal flow, decreasing salinity, and impoundment of water are believed to have resulted in approximately 7 acres of the common reed, *Phragmites australis*, throughout the wetland.

In 1996, Walker Farm was identified as a potential salt marsh restoration site through Save The Bay's evaluation of the ecological integrity of Narragansett Bay salt marshes. Save The Bay with consultation from the University of Rhode Island's Graduate School of Oceanography has developed a pre and post restoration monitoring plan for the restoration site. Save The Bay monitored soil salinity, groundwater elevation, vegetation, and bird usage of the marsh during the 2002 and 2003 growing season. Nekton monitoring was conducted in the summer of 2002. Pre-restoration monitoring data confirms that plant and animal communities are significantly impacted by tidal restrictions and road fill. Nekton use (fish and crustaceans) of the salt marsh are seriously suppressed by existing tidally restricted conditions. High water temperatures and reduction in the duration of tidal inundation of the marsh surface is currently limiting the use of this historic salt marsh by nekton species. Vegetation monitoring has shown that *Phragmites australis* is the dominant plant species and has replaced native salt marsh vegetation. Monitoring of avian use of the marsh and the open water is being conducted by volunteers from Barrington and East Providence (see monitoring plan).

Restoring tidal flow to Walker Farm salt marsh will result in positive ecological changes to plant and animal communities. Based on similar restorations, it is anticipated that Walker Farm marsh restoration will result in decreased density, height, and vigor of *Phragmites australis*; allowing for the recolonization of characteristic high and low salt marsh plant assemblages. Restoration of the marsh community and reintroduction of tidal flow will result in increased utilization by salt marsh associated faunal assemblages (nekton, avian species, etc.). The community will also benefit from the salt marsh restoration through the enhancement of the bird and fish habitat.

Kickemuit Reservoir Fish Ladder

The Kickemuit (Warren) Reservoir Dam, located at the head of tide, currently prevents the passage of migrating river herring and other fish species. The proposed project includes the installation of a Denil fish ladder and plunge pool to allow both upstream fish access to the reservoir during the spring adult migration, as well as out- migration by adults and juveniles in the summer and early fall. This fish ladder will allow river herring access to 26+ acres of spawning and nursery habitat in the Kickemuit Reservoir and is an excellent opportunity to restore a historic river herring run to Narragansett Bay.

Historically, the Kickemuit River supported an important anadromous fishery, including alewife and blueback herring. Installation of the Kickemuit Reservoir Dam during the late 1800's effectively prevented passage of herring and other fish species to upstream waters. At one time, local fisherman used dipnets to transfer alewife from one side of the dam to the other. However, these efforts failed to sustain the alewife population, and the once significant numbers ultimately disappeared from the river. The installation of a fish ladder at the Kickemuit Reservoir Dam is expected to restore an anadromous fish run on the river by allowing adult alewife access to 26+ acres of ideal spawning and nursery habitat within the Kickemuit Reservoir. It is possible that a herring run containing tens of thousands of fish annually may eventually be present in the river. The proposed project calls for the installation of a Denil fish ladder on the western side of the concrete spillway and abutment, approximately 10-feet from the edge of the channel and within the embankment of the earthen dike.

Town Pond (Boyd's Marsh) Salt Marsh Restoration Project

Until 1950, Town Pond was a tidal salt pond and salt marsh system of about 40 acres. In the early 1950's, the U.S. Army Corps of Engineers (Corps) filled the wetland system while dredging the Mount Hope Bay shipping channel. Under Section 1135 of the Water Resources Development Act of 1986 the Corps, RIDEM, and project partners propose to remove approximately 100,000 cubic yards of existing dredge material, restoring tidal exchange and transforming a degraded brackish-water system back to high- value salt pond and salt marsh habitat. The project will also protect nearby freshwater resources, alleviate coastal erosion in the area of Bay Shore Road, and improve public access to the shoreline.

Mapping Submerged Aquatic Vegetation in Narragansett Bay

Conduct the initial tasks to update the 1996 inventory of eelgrass beds in Narragansett Bay, Rhode Island. In Phase I of the mapping project, Save The Bay will work collaboratively with the Narragansett Bay Estuary Program (NBEP) to acquire and process new aerial imagery of Narragansett Bay, and conduct field work to validate information interpreted on the imagery. The NBEP and its partners conducted a baseline inventory of eelgrass beds in Narragansett Bay using 1996 aerial photographs. This was an important first step in monitoring this critical marine resource. However, it is also important for Rhode Island to investigate any changes that may be occurring in these resources. This requires the updating of the 1996 maps with new data. It will also act as a report card yielding vital information on the overall health of Narragansett Bay. The staff of the NBEP and SaveThe Bay will contract the services of an aerial survey company to collect new digital georectified aerial photography of the study area in May/June 2005. Save The Bay will also contract a coastal remote sensing consultant with expertise in eelgrass restoration to conduct a preliminary assessment of the imagery and direct the field data collection teams. Save The Bay staff and volunteers will collect field verification data.

Factory Brook Fishway

RIDEM, with project partners NOAA and USFWS, is seeking to construct a fish for purposes of restoring a river herring (alewife, blueback herring) run to Factory Brook. The 5-foot high stone dam, accessible from Matunuck Schoolhouse Road, prevents herring passage to spawning and nursery habitat in 30-acre Factory Pond and one mile of stream habitat in Factory Brook. The dam is located approximately 0.20 miles from Factory Brook's outlet at the northern end of Green Hill Pond. Fish passage at Factory Brook has the potential to result in thousands to tens of thousands of returning river herring annually. In addition to river herring, the project may also benefit sea-run brook trout. Alewife and blueback herring, collectively known as river herring, are an essential part of Rhode Island's coastal ecosystems. These anadromous fish provide a forage base for a variety of fish and wildlife both in the ocean, where they spend most of their lives, and in the rivers and streams they ascend each spring to spawn. River herring runs were once plentiful in Narragansett Bay and throughout Rhode Island's coastal waters. Unfortunately, dams and other obstructions on the State's many rivers and streams now prevent fish from reaching essential upstream spawning and nursery habitat. These migration blockages have not only impacted herring stocks and their fisheries, but also the fish and wildlife that readily prey upon them, including many commercial and recreational fish such as striped bass and bluefish. State and federal agencies have long recognized the ecosystem benefits associated with restoring anadromous fish passage to high-quality Factory Brook, and have prioritized the project site since the mid 1990's. In 2000, Factory Brook fish passage was identified in Rhode Island's Coastal Habitat Restoration Plan and preliminary design plans were completed by the Army Corps of Engineers (ACOE) and the USFWS as part of the RI Coastal Pond Restoration Study. The project was also considered by the *North Cape* Trustees as compensation for marine resources injured during the 1996 *North Cape* spill. Restoring a herring run at Factory Brook is recommended by RIDEM in its Strategic

Plan for the Restoration of Anadromous Fishes to Rhode Island Coastal Streams (2002).

Rhode Island Coastal Wetlands Inventory

The State of Rhode Island has requested that the Army Corps of Engineers conduct an inventory of degraded or filled coastal wetlands to identify the opportunities for future wetlands restoration projects. Congress has provided funding for the Corps to undertake this task under the Planning Assistance to States (PAS) program. The Corps has preliminarily identified approximately 50 coastal wetland sites, which will be further evaluated for restoration areas along the coast from Rhode Island's western boarder to Narragansett Bay (herein referred to as Western Rhode Island Area). In addition, there are approximately 75 sites (299 acres) that are dominated by Phragmites which were identified by the Narragansett Bay Estuary Program in a report published in 2001 (herein referred to as Narragansett Bay Area). In the Western Rhode Island Area, wetland restoration sites will be delineated based on identifying observable, characteristic photographic signatures evidenced by color (gray-scale), texture, landscape position, vegetation and relative depth of field. The boundaries of the wetlands will be delineated in a GIS file format. A database will then be developed for the wetlands characteristics based on initial photographic interpretation and later through field evaluation. The parameters of the database are listed in the "Required Output" section. In the Narragansett Bay area, wetland characteristics will be developed for those Phragmites dominated areas already identified by the Narragansett Bay Estuary Program. A comparison of historical and most recent aerial photos will also be undertaken using GIS to identify wetland alterations to identify other potential restoration sites.

OUTLOOK AND PROJECTIONS

OSPAR-related expenditures during FY2007 are expected to be similar to FY2006 absent any major spills and associated response needs. The functional capacity to respond will be limited by the impacts of RIGL § 46-12.7-13 which removes an additional $250,000 from the OSPAR fund to provide operational funds for the Bay Rivers and Watershed Coordination Team created by RIGL 46-31 The continued reallocation of OSPAR funds will deter OSPAR from maintaining a stable fund balance. The continued fiscal pressure on the OSPAR fund will have a cumulative impact, compromising the ability of the program to perform the basic readiness and response tenants for which it was established.

CONTACT INFORMATION

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