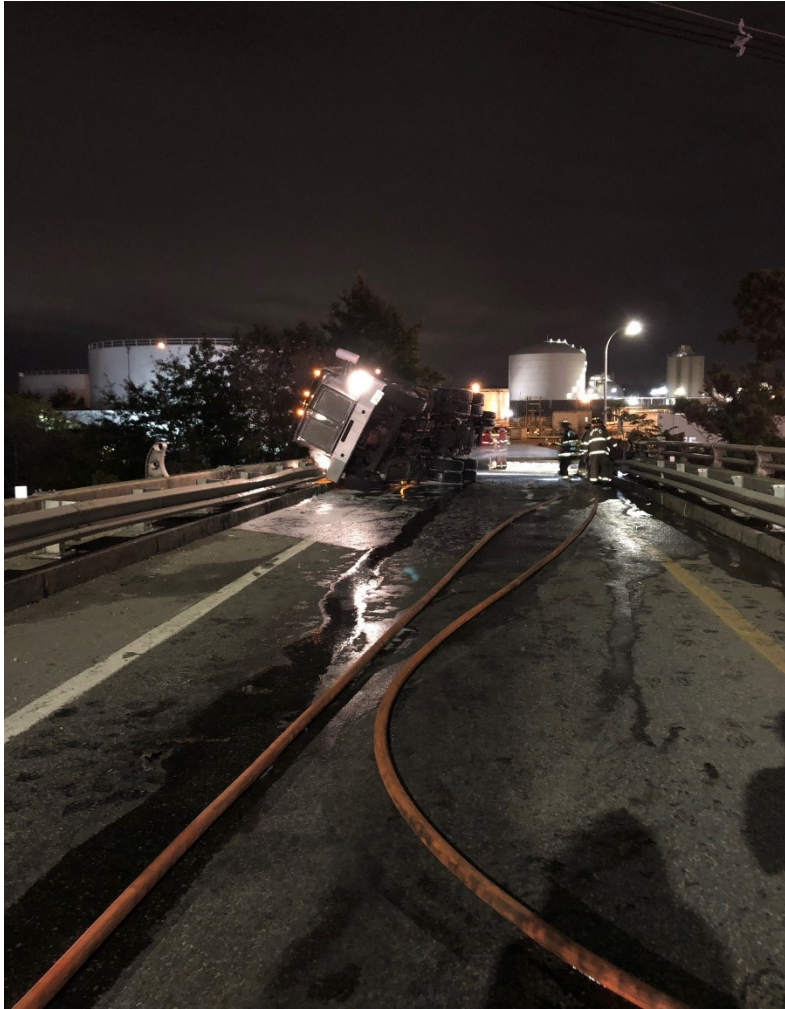


**Oil Spill Prevention, Administration and Response
(OSPAR) Fund**

**Annual Report
FY 2019**



**Allens Avenue Tank Truck Rollover
October 3, 2018**

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Janet Coit, Director

James Ball, Administrator,
Office of Emergency Response

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1. 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 of 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).

In the over 20 years since enactment of OSPAR legislation, Rhode Island has increasingly experienced impacts related to climate change, including more intense storms, increased annual rainfall, sea level rise, and warming air and waters. These impacts further stress our coastal and riverine habitats and infrastructure. In instances where rainfall or storm surge lead to flooding, there is an increase in releases of oil and hazardous materials into the environment that call for emergency actions and remediation. These changes create an increased urgency for strong preparedness and training for responding to the issues from storms.

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 2019.

2. REVENUES & EXPENDITURES – FY2019

The OSPAR account started FY 2019 with a balance forward of \$2,630,879.00 and ended the fiscal year with a balance of \$3,188,721.00. During FY 2019, the \$0.05 per barrel fee resulted in the collection of \$2,641,743.00 after the 10 percent cost recovery fees per RIGL 46-12.7-4.1(g). Personnel, operating and project expenditures for FY2019 totaled \$2,083,901.00. The OSPAR balance has been on a downward trend since FY2014 but in FY2019 the closing balance of the fund increased, as a result of increased revenue and decreased expenditures.

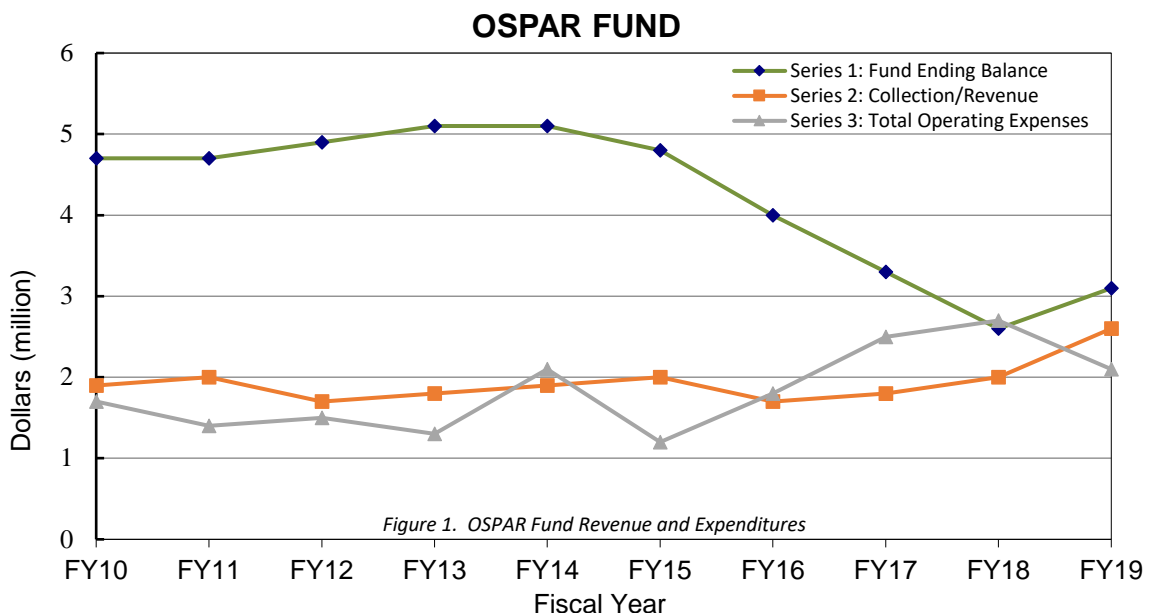


Figure 1 provides an overview of the approximate OSPAR Fund revenues and expenditure activities since FY2010.

2.1 EXPENDITURES

2.1.1 Personnel Costs

- Partial salary and benefits for the 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 Administrative Officer who supports the Emergency Response Office and the OSPAR program.
- A State Meteorologist to provide weather information before, during, and after spill response activities, as well as provide trending climatological information for pre-spill preparedness.
- A Tier II Specialist to provide information on petroleum and chemical storage facilities regarding amounts, storage locations, site plans and emergency contact information.
- Partial support of salary and benefits of DEM geographic information system (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 spatial 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 the DEM Office of Waste Management, who oversee the investigation and cleanup of properties contaminated from the release of oil.

Personnel Costs	\$ 920,806
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2.1.2 Major Operating Expenses

Vehicle Purchases, Maintenance & Readiness	\$ 295,702
Building Maintenance	\$27,164
Cell phones, IT Support	\$ 45,770
Supplies: Office, Scientific, Miscellaneous Expenses	\$37,789

Major Operating Expenses	\$ 406,425
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2.1.4 Other Projects supported by the OSPAR Fund

Audubon Society – Narragansett Bay Estuarine Program	\$ 67,029
Atlantic State Marine Fisheries Commission	\$ 17,641
Coastal and Estuarine Habitat Restoration Trust Fund	\$250,000
Water Quality Monitoring Team	\$250,000
Port of Providence Marine Strike Team (EMA)	\$172,000
URI Tier 3 Salt Marsh Monitoring	\$2,300

Other Projects supported by the OSPAR Fund	\$ 756,670
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2.1.5 Total OSPAR Expenditures **\$2,083,901**

The expenditures specifically listed above represent the larger cost associated with the funding for FY2019

3. RESPONSE ACTIVITIES – FY2019

In FY2019 the Office of Emergency Response (OER), which operates as an all-hazard response program and incorporates the oil spill prevention and response functions of DEM, continued to be extremely active responding to oil spills, hazardous material incidents and other state emergencies. There were 724 emergency response investigations undertaken by the Office during FY2019. While there is some annual variation in the number of emergency responses, the trend of the data has been consistent over the last several years. The incidents comprised two primary categories, oil spills and hazardous material responses.

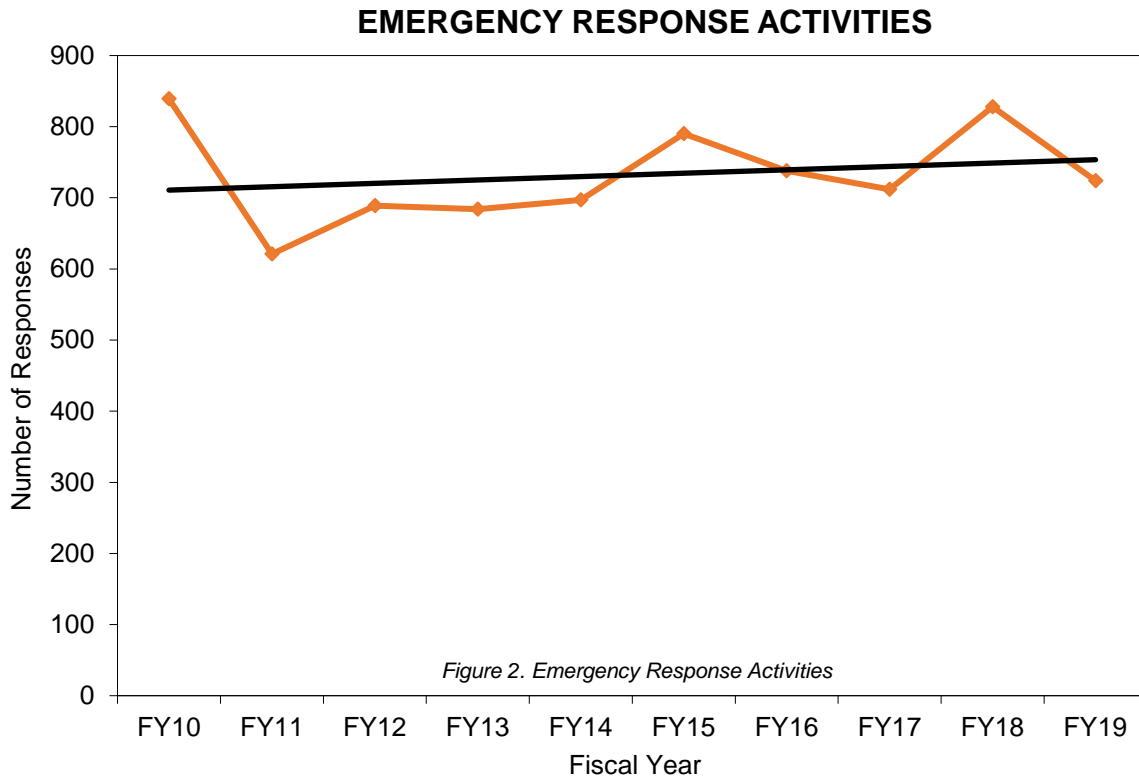


Figure 2 tracks the number of emergency response activities for a 10-year period.

3.1 OIL SPILL RESPONSE ACTIVITIES – FY2019

The DEM emergency response team responded to 568 (78% of the total number of incidents responded to) oil spills during FY2019. The amount of oil products and oil spill debris remediated or removed from the environment during these response activities was estimated to be 67,156 gallons of oil and 808 tons of oil spill debris. The remediation work was completed by the OER, the OER contractors, the responsible party or their contractor. To ensure compliance with state and federal regulations, the work was overseen by the OER staff.

The circumstances causing these releases and the environmental impacts generated were varied. The categories of oil spills and the relative percentages of each spill type are illustrated in Figure 3.

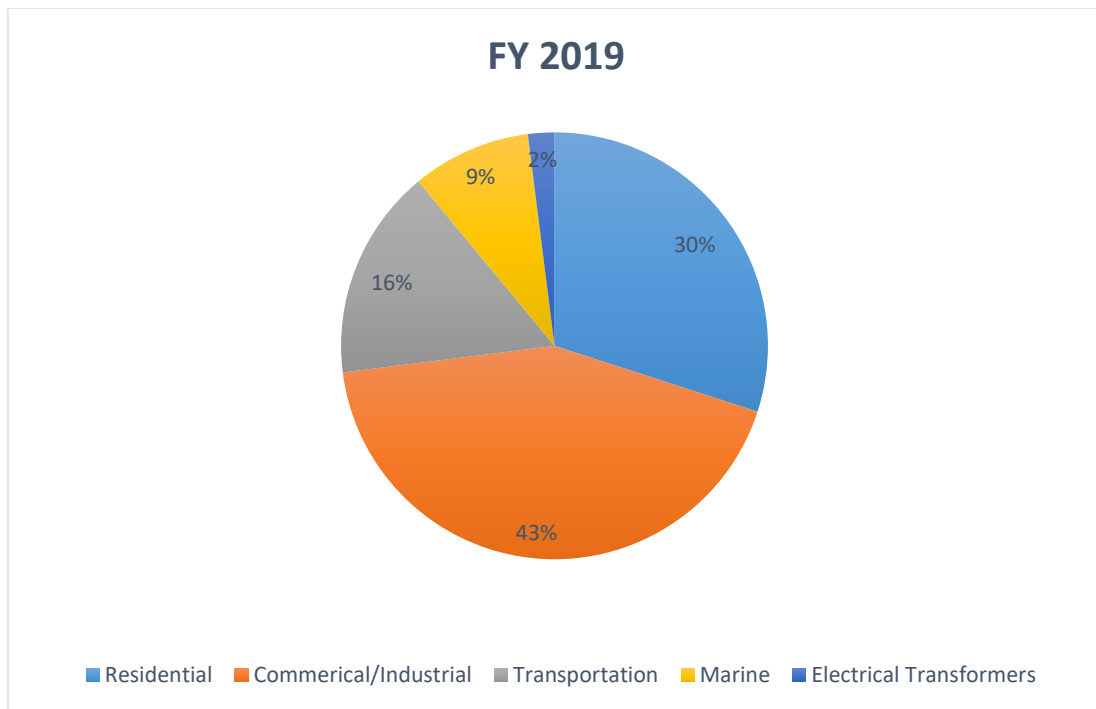


Figure 3. FY2019 Oil Spills by Category

The greatest percentage of oil spills, 43 percent, was related to commercial and industrial incidents. Residential oil spills comprised the next largest category, accounting for 30 percent of department responses. Fuel oil spills in residential areas can contaminate drinking water wells, ground water, and soil; foul septic systems, requiring their replacement; cause odor and health problems in the home; and contaminate storm water drains, sewers, drainage ditches and surface water tributaries. DEM 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:

https://novascotia.ca/nse/contaminatedsites/docs/Contaminants_Oil_tank_WEB.pdf.

DEM continues to conduct public outreach through press releases, television special reports and presentations to oil companies via insurance seminars. DEM also cooperated with the Oil Heat Institute to provide pertinent information to the oil service industry. Transportation related spills accounted for 16 percent of the oil spill events in FY2019. Oil spills in Narragansett Bay and other marine areas comprised nine percent of response activities. DEM and USCG have been conducting workshops in the Port of Galilee to educate commercial fishermen regarding the State and Federal requirements for the proper containment and disposal of oily waste they generate. These workshops will hopefully be fruitful in reducing the number of oil spill responses in the Port of Galilee. Spills from electrical transformers comprised two percent of the spill events. Personnel from the OER continue to meet with some of the electric companies to discuss electrical transformer issues and to assure the proper cleanup of mineral oil dielectric fluid (MODF) and PCB contaminated transformer oil. The category and relative percentages by category of spills have remained relatively constant over the last few years with some fluctuation in the different spill types.

Figure 4 compares the categories and spill percentages for the last three fiscal years.

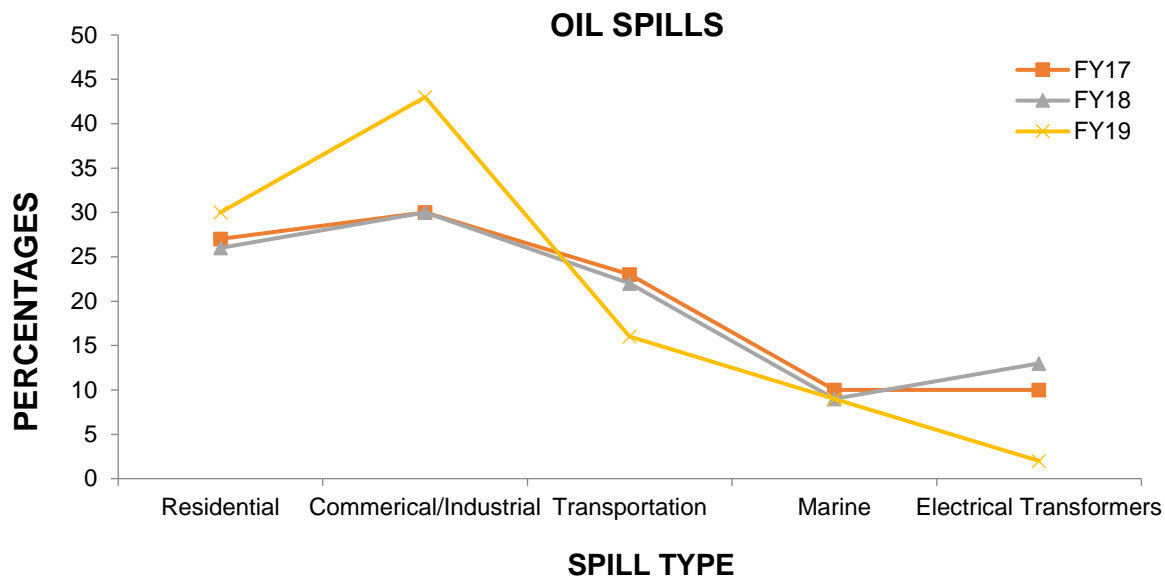


Figure 4. Comparisons of Oil Spills FY2017, FY2018 and FY2019

3.2 HAZARDOUS MATERIALS RESPONSE ACTIVITIES – FY2019

During FY2019, 22 percent of the response actions involved hazardous materials, totaling 156 responses. The amount of hazardous materials/waste remediated or removed from the environment during these response activities was estimated to be 20,382 gallons of hazardous materials/waste and 78 tons of solid hazardous materials. The remediation work was completed by the OER, the OER contractors, the responsible party or their contractor. To ensure compliance with state and federal regulations, the work was overseen by OER staff.

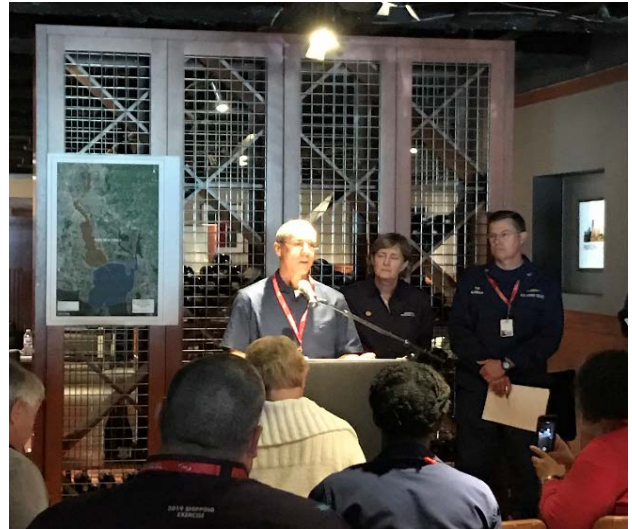
4. OER INCIDENTS/EXERCISES – FY2019

4.1 Shell Shipping Oil Spill Exercise, May 15-16, 2019

From May 15 through May 16 of 2019, a multi-agency exercise was conducted in coordination with Shell Oil Products and its Shell Americas Response Team. The purpose of the large-scale exercise was to evaluate agencies and the preparedness of the various participants for massive oil spills affecting Rhode Island waters. When training for incidents posing an incredible threat to the environment and public safety, paramount objectives include conducting salvage assessment, containing and recovering spilled material, optimizing protection of environmentally sensitive areas and establishing a chain of command to enforce safety measures. Shell and the participating governmental and private



agencies create separate command structures with varying priorities, so fluid communication and coordinated authorities are tremendously important. The simulated oil discharge brought over 250 responders from over 20 agencies together. Below (on the left) is a photograph of the room in which different sections of the incident command group gathered to rehearse situations typically encountered during an actual incident. Below (on the right) is a photograph of the Office of Emergency Response Administrator, James Ball, United States Captain of Port, Captain Chris Glander and Shell Representative, Barbara Parker, conducting a mock press conference regarding the oil spill outlined by the exercise.



The scenario created for this exercise is described as follows:

*At 4:30 (EDT) the tanker “Sea Clam” is inbound to the Shell Providence Terminal. While coming alongside the berth, the vessel experiences an engine malfunction and overshoots its destination. Hard contact is made with the berth. The master reported that crewmen on the deck detected strong hydrocarbon odors. Two crew members suffered injuries and required immediate medical attention. The master also reported damage to the tanker resulted in a release of approximately **630,000 gallons** of oil to the surrounding water.*

The mock oil released as a result of the exercise impacted the Providence River shoreline in Warwick and East Providence. These areas are home to bountiful sea life, including many species of fish, shellfish, waterfowl and seabirds. Marshes and sand and gravel beaches open to the public are also located in these areas. These special environmental conditions are of utmost importance when implementing public safety considerations. Weather during the exercise consisted of sunny skies, light wind and temperatures ranging from 40 to 52 degrees Fahrenheit.

Prior to the actual drill on Monday, May 13, the OER worked in coordination with Clean Harbors, Coastline, USCG Atlantic Strike Team, Marine Spill Response Corporation and Shell to deploy boom in accordance with the Geographical Response Plan (GRP) for the appropriate body of water (Passeonquis Cove and Riverside/Sabin Point). Drones were used to video tape the operation to evaluate the response objectives.

On May 14, the day before the drill began, the Environmental Response Coordinator provided Shell personnel with the State’s expectations, knowledge and management hierarchy to ensure all participants were on the same page. Upon initiating the exercise, a Unified Command structure was established, consisting of the fire chief, Office of Emergency Response Coordinator, Shell personnel and USCG personnel. Following the exercise, the debrief emphasized the value of the collective effort displayed, and results were deemed a great success!

4.2 Newport Folk Festival, July 27–29 and Newport Jazz Festival, August 3-5, 2018

From July to August DEM conducted environmental surveillance for the Newport Folk Festival and Newport Jazz Festival at Fort Adams State Park in Newport, RI. DEM provided air monitoring, radiation detection and an onsite supply of curtain boom to be ready to immediately respond to a spill or emergency to protect public safety and the environment. The air monitoring was requested by the venue organizers and the RI Emergency Management Agency to ensure public safety. The equipment entailed the use of 10 AreaRae field instruments with gamma detectors. The meters identify levels of hydrogen sulfide, cyanides, oxygen, volatile organic compounds and radiation. The field instruments send the air monitoring results wirelessly back to a host computer system in the DEM communication vehicle. Every morning the operation started with an Incident Action Plan meeting to discuss the updated information and plan for the day. The meeting included weather reports for the day, threat assessments, disaster medical responses, police activities, venue operations and hazardous material operations. DEM also supplied a boom trailer filled with curtain boom to provide containment for possible oil spills generated by the hundreds of vessels in the vicinity of Fort Adams to view the race. During the two events there were no issues; everything went on without any problems.

4.3 Allens Avenue Tanker Truck Rollover, October 3, 2018

On October 3, 2018 DEM Law Enforcement notified the Office of Emergency Response (OER) of a tanker truck rollover on the on-ramp from Allens Avenue to I-95 North. Several of the responders from the OER immediately responded to the call. The Incident Command Post was set up upgradient of the spill. Upon arrival the truck was actively leaking from a large gash that was torn into the passenger side of tank when it rolled over onto the guardrail. The tanker originally contained 11,500 gallons of gasoline.



The leaking fuel flowed down the highway on-ramp to Allens Avenue. Some of the gasoline leaked down the embankment on the north side of the overpass and into a small stream that flows into the Providence River. On the south side of the on-ramp, some gasoline leaked into the grass but most of the gasoline surged down the on-ramp onto Allens Ave. The storm drains on the lower portion of the on-ramp were impacted by gasoline and dissolved asphalt aggregate. The aggregate was dissolved by the gasoline breaking down the asphalt binder in the road and previous asphalt spills in the same area. The gasoline impacted the grass on the east side of Allens Avenue from the start of the on-ramp for approximately 30 yards. The southern storm drains on Allens Avenue intercepted the gasoline and sent it into the storm drain system on Allens Avenue and then under the Shell Oil facility at 520 Allens Avenue, ultimately discharging to the Providence River. Response contractors Newton B. Washburn (NBW) and Clean Harbors were contacted to provide vacuum trucks and personnel. Employees from the Narragansett Bay Commission were on-scene to help provide information on the sewer drains and catch basin



pipng systems. The odor of gasoline was very strong even as the firefighters sprayed aqueous film-forming foam (AFFF) to provide fire and vapor suppression. The AFFF was a few feet high in some sections of Allens Avenue. Both contractors were put into service on vacuuming up the gas and foam from Allens Avenue.

Once the leak had slowed it was verified that there was still fuel remaining that needed to be pumped out of the tanker. The Unified Command staff determined it was unsafe to right the truck with the fuel on board, and access to pump the truck was complicated. The fire chief decided to call in a Massachusetts hazmat team to gain access to pump out the remaining fuel. After "cold tapping" the tanker body, Clean Harbors removed 400 gallons of fuel so that the truck could be righted safely and towed from the area.



NBW began working at the bottom of the on-ramp to pump gasoline and foam on the road. The foam was applied by the fire department's Flammable Liquids Task Force to prevent accidental ignition of the gasoline vapors. NBW hired Hoffman Engineering to conduct air monitoring of the spill area and in the catch basins. The initial evaluation included screening the work zone ambient air and the catch basin headspace directly in the spill zone and laterally outward. Vapor screening was performed in 13 storm drains and sewer drains along Allens



Avenue. Screening ranged from 0.0 to 248 ppm total volatile organic compounds (VOC) in the catch basin head space. Air sampling was also conducted in the work zone where Clean Harbors and NBW were removing foam and residual gasoline on the road. The PID reading throughout the road cleanup activities ranged from 0.0 to 180 ppm VOCs. Due to the amount of foam it was difficult to vacuum the mixture and there was not enough de-foaming agent to apply to the material. A determination was then made to try applying road salt to the foam in hopes that it would break down. The city brought in the sanders and applied the sand to the foam. Clean Harbors was contacted to provide a fractionation (frac) tank so that the vacuum trucks could be pumped off nearby and save time. Roll-off containers were also requested to put the road salt and sand into after it was collected by the street sweepers. The DEM Response Team worked until 3:00 am to assist with the cleanup.

On the next day, DEM responders were back on Allens Avenue at about 7:00 am to see how the removal operation was progressing. Clean Harbors and NBW were still removing foam and gasoline in the road while the city was removing sand and salt with street sweepers. Most of the material was removed at this point. The larger concern was the catch basin and sewer line systems that produce strong gasoline vapors. Clean Harbors began the process of vacuuming foam and gasoline out of the piping system. They also installed containment and absorbent boom at the outfall on Shell's property. As the head space readings were obtained in catch basins with MultiRae meters to determine vapor levels. It was determined the highest level in the storm drain system was at the corner of Allens Avenue and the exit from the Shell loading rack entrance area. The levels were greater than 99 percent of the lower explosive limit. As a result, it was determined that



two intrinsically safe evacuation fans were needed to safely remove the vapors from the confined underground piping system to avoid an explosion. While the fans were in operation the contractor continued to pump foam and gasoline from the storm drains. It appeared that the foam was breaking down and releasing more vapors. The fans operated all night with personnel on-site to oversee operations and obtain vapor readings for safety purposes.

On-site the plan was for Clean Harbors to obtain a permit to access Shell's property and conducted gasoline removal of the storm drain cleanouts the following day. We determined that the catch basin piping system needed to be flushed with water. The piping system would be flushed to the cleanouts so that the gasoline would be recovered upgradient of the Providence River. The RI Department of Transportation (RIDOT) wanted to complete milling and repaving of the on-ramp to reopen

the ramp. DEM would not allow the operation to commence until the explosive vapors were controlled. Later that night RIDOT was allowed to conduct some milling operations at the top of the ramp but were required to stop at the bottom portion due to safety reasons.

On October 5, 2018 the flushing of the underground line on Allens Avenue to the Shell exit began. That afternoon approximately 5,000 gallons of water were flushed through the line and a Clean Harbor vacuum truck pumped out the material in the last catch basin prior to the system entering the Shell property. The gasoline fumes were strong and residual gasoline was pumped out of the system. Clean Harbors then continued the operation to the three cleanouts on the Shell property. They pumped out over 6,000 gallons of foam, water and gasoline from the system. At the end of the day the booms at the outfall were replaced and readjusted. The LEL levels went back up in the system due to high tide backflowing salt water into the underground piping. As a result, that night they continued to use the fans to exhaust vapors from the catch basin system with a person providing security for the system.

The following day the responsible party hired a jet/camera service company to visually inspect the system and to use a water jet system to finish flushing out the piping system. The camera identified areas clogged with debris that was trapping gasoline. Those areas were jet cleaned to remove the blockages and free the gasoline.

On October 7, 2018 the vapor levels in the catch basin system finally dropped to safe levels and RIDOT could reopen all the lanes on Allens Avenue.

A total of 17,900 gallons of foam, water and gasoline were collected during the cleanup process. This material was stored in the frac tank at the DPW. Three roll-offs were filled containing a total of 60 yards of contaminated sand and salt. The waste was to be sent off for proper disposal by Clean Harbors. The DEM response to the incident cost \$6,200.00. An invoice was sent to the responsible party that has subsequently paid in full.

5. PORTS PROGRAM

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 monitoring stations located in

Narragansett Bay that monitor the tide, currents, and weather. The 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 <http://tidesandcurrents.noaa.gov/ports/index.html?port=nb>. 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 Raven Portable Pilot Navigation System purchased with OSPAR funds. The Raven Portable Pilot Navigation Systems have wireless/Bluetooth 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 (ACOE). It is the only commercially available portable piloting navigation system incorporating ACOE channel data on customized vector electronic charts with sub-meter positional accuracy necessary for precision navigation in RI waters. 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.

6. TRAINING ACTIVITIES

The Emergency Response team continued to improve its response capabilities through training. During FY2019 team members continued to build on the all-hazard model. Members of the Emergency Response team participated in courses, training and exercises that included:

- 8-Hour Regional Response Team Meeting
- 8-Hour Radiation Training
- 24-Hour HazMat Training
- 1-Hour ChemPro 100i Training
- 8-Hour Ethanol by Rail Drill
- 40-Hour Highway Emergency Response
- 40-Hour Railcar Specialist
- 30-Hour Energetic Material Training
- 8-Hour Sampling Training
- 8-Hour Exxon Mobil Drill
- 8-Hour Ocean State Power Drill
- 8-Hour HazMat Drill with Civil Support Team
- 8-Hour Radiation Training at the RI Nuclear Science Center
- 8-Hour Transportation of Hazardous Substance Training
- 4-Hour Aboveground Storage Tank Training
- 8-Hour RI Preparedness Training Conference
- 32-Hour Hazardous Materials Technicians Training
- 16-Hour Radiation Sampling Training
- 16-Hour Shell Worst Case Oil Discharge Exercise
- 8-Hour Oil Boom Deployment Training
- 8-Hour Propane Leak & Water Injection Course
- 16-Hour ICS-320 Training
- 4-Hour Natural Resource Damage Assessment (NRDA) Training

4-Hour Winter Storm Drill with EMA & Governor's Office
1-Hour Toxic Hazards Training
2-Hour Winter Storm Table Top Exercise with EMA & Governor's Office
7-Hour DEM Leadership Training
2-Hour Chlorine Emergencies for First Responders
16-Hour Hazardous Materials Technicians Training
1-Hour Annual Cybersecurity Awareness Training
8-Hour HAZWOPER Refresher
8-Hour WMD First Responder 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, *WMD Hazardous Material Evidence Collection* with HazMat Teams, *Radiation Safety Training* with EMA, Local Hazardous Material Teams, *Homeowner Oil Spill Handling* for oil companies, *Chemical Safe Schools* for educators, *Hazardous Materials Recognition & Identification Refresher* for RIDOT, *Traffic Incident Management Training* for RIDOT, cities/towns, *Hazardous Materials Sampling* for the National Guard Civil Support Teams, Northeast Environmental Enforcement Project (NEEP) training and *Environmental Health & Pesticide Safety Education* for the University of Rhode Island.

7. HABITAT RESTORATION PROGRAM

In June 2002, the RI General Assembly enacted legislation (RIGL 46-23.1) that established a coastal and estuarine habitat restoration program administered by the Rhode Coastal Resources Management Council (CRMC). Funding from the OSPAR Account continues to be transferred to CRMC in accordance with RIGL § 46-23.1-3. The financial support is funded through the Rhode Island Coastal and Estuarine Habitat Restoration Trust Fund (CEHRTF). Habitat restoration projects are selected from recommendations by the Technical Advisory Committee and approved by CRMC. Each year, the CEHRTF advisory committee, with approval of the CRMC allocates up to \$225,000 from the OSPAR account to habitat restoration projects throughout the state.

In general, proposals are evaluated based on the habitat type being targeted, the extent to which the project seeks to restore an area that has been degraded by human impacts, whether the project has been identified as a priority through any statewide or regional planning efforts, the potential community benefits, and the capacity of the lead entity to carry out, maintain and monitor the project. In recent years, criteria have been added that incorporate climate change and sea level rise considerations into the scoring.

Since the inception of the Trust Fund, CRMC has awarded \$3.4 million for 127 projects, which have leveraged more than \$27 million in matching funds. In its 16 years, the Trust Fund has helped to restore over 300 acres of Rhode Island habitat. The following short project descriptions are taken from the CRMC web site. Additional information can be found at <http://www.crmc.state.ri.us/>.

In 2018, projects approved for funding include two salt marsh restoration and resilience enhancement projects, two projects involving fish passage or riverine habitat improvements and one urban pollinator habitat project. CRMC put special emphasis on projects that would enhance the resiliency of Rhode Island's coastal habitats to climate change and sea level rise.

7.1 Upper Kickemuit River Dam Removal (Phase I), Warren

Award: \$75,000

Lead Organization: Bristol County Water Authority

The work to be done includes design, engineering and permitting of a project that will restore 16 acres of anadromous fish habitat and freshwater wetlands. In 2007, DEM's Division of Fish and

Wildlife and its partners constructed a fish ladder at the Lower Kickemuit River dam, but the river herring population has not recovered since that time partly because of check valves on the flow outlets of the upper dam. The dam's removal will be the first step in abandoning this vulnerable drinking water supply and will enhance river connectivity, improve fish passage into the upper river, increase freshwater wetland habitat and reduce infrastructure flooding.

7.2 Hamilton Fish Ladder Improvements, North Kingstown

Award: \$60,000

Lead Organization: The Nature Conservancy

Project partners aim to improve upstream and downstream passage for the diadromous fish runs in the Annaquatucket River Watershed by installing a small concrete weir on the dam's apron and modifying the staging pool to raise water elevation via a rock weir at the downstream end of the pool. The project aims to increase the size of the anadromous fish population and eventual supply of forage species to recreational and commercial fish in the watershed, Lower Narragansett Bay, and Rhode Island Sound. Work was slated to begin at the dam in late summer to early fall of 2019.

7.3 Quonochontaug Pond Salt Marsh Restoration and Enhancement, Charlestown

Award: \$50,000

Lead Organization: CRMC



The project includes restoring approximately 30 acres of salt marsh and eelgrass habitat and will raise the elevation of the Quonochontaug marsh using material dredged from the pond. The project is similar to the successfully completed restoration and enhancement project at Ninigret. Dredging and distribution of the material onto the marsh surface was completed in January 2019. Save The Bay is planning planting efforts for this spring. The Trust Fund monies will go toward the planting, as well as grading adjustments, creek excavation, and invasive plant management.

7.4 Napatree Point Enhancement Ecosystem Resiliency Project, Westerly

Award: \$18,100

Lead Organization: Watch Hill Conservancy (WHC)

The project includes invasive species management in restoration sites and other sensitive parts of Napatree and directing visitors away from closed trails and plant restoration sites using cedar fencing that will not impede sand movement. The WHC found 25 different sites along the point that need invasive species management. The work was to be completed by December 2019. This project received Trust Fund monies in 2015 and 2017.

7.5 San Souci Drive Separated Bicycle and Pedestrian Facility, Providence

Award: \$16,900

Lead Organization: Woonasquatucket River Watershed Council

The project will add green infrastructure and enhance local habitat value and includes construction of a bicycle and pedestrian greenway. Trust Fund monies will be used for native and pollinator-friendly plantings to enhance the habitat value of the green infrastructure practices, buffers and riverbank areas. Construction was completed in November 2019.



7.6 **Hundred Acre Cove Salt Marsh Adaptation and Migration Facilitation, Barrington**

Award: \$5,000

Lead Organization: Save The Bay

Save The Bay and the Town of Barrington are using the results of the Rhode Island Salt Marsh Assessment and CRMC's Sea Level Rise Affecting Marshes Model (SLAMM) Report to identify adaptation sites and migration corridors along Hundred Acre Cove. The partners have identified a northern site on the west side of Route 114 near the town line, and a southern site just west of Route 114. Adaptation techniques will be used on the sites, mosquito breeding habitat will be assessed, and each site will have a marsh adaptation plan.



8. **WATER QUALITY MONITORING**

Effective July 1, 2015, amendments to Rhode Island General Law (RIGL) 46-12.7-13 authorized DEM to direct the use of up to \$250,000 in OSPAR funding annually for environmental monitoring purposes. The Water Quality Management Plan Advisory Committee (WQMPAC) selects the strategic investments.

8.1 **Cooperative Agreement with United States Geological Survey**

As authorized by the WQMPAC, DEM continued its cooperative agreement with the United States Geological Survey (USGS) to maintain long-term monitoring programs that collect data on streamflow, groundwater levels and water quality in the State's largest rivers. The 2019 OSPAR contribution was \$250,000 and the other funding came from the USGS match. Funding from the RI Water Resources Board also contributed to the jointly negotiated program of activities. During FY19, pursuant to the combined joint funding agreement, the OSPAR Fund supported the following three monitoring programs.

Streamflow Measurements: USGS operated and maintained 21 streamflow gage stations that provided continuous measurements of streamflow elevations. The streamflow data is made available on a real-time basis via the USGS website. The data are used by multiple agencies for several programs including flood forecasting, drought management, water quality restoration, water management and permitting.

Groundwater Elevation Measurements: USGS collected monthly groundwater elevation readings from nine observation wells located throughout Rhode Island. Five wells are equipped for continuous measurement. The data can have applicability to drought management, permitting and water management programs.

Large River Water Quality: USGS continued its monthly water quality sampling program for RI's three largest rivers. With one exception, five stations were sampled monthly on the Blackstone River and its tributary the Branch River, the Pawtuxet River and the Pawcatuck River for a range of water quality parameters including nutrients and pathogens. Due to rising costs, monthly sampling at the Pawcatuck Station was eliminated from the agreement for the months of November, January and February. Samples at all stations are also analyzed quarterly for metals. Data undergoes federal quality assurance procedures and then is made available via USGS information system – NWIS. Data is important for evaluating long-term trends and tracking pollutant loadings into the upper bay from the rivers. Data is used in various state water programs. Three stations are located near the mouths of the Blackstone, Pawtuxet and Pawcatuck Rivers since they are representative of the pollutant loadings from these tributaries into coastal waters.

9. OUTLOOK AND PROJECTIONS

OSPAR-related expenditures during FY2020 are expected to slightly increase but, absent any major spills and associated response needs, costs should remain stable. Fiscal year 2019 showed revenues going up and expenditures were the lowest in recent years. As a result, the ending balance increased over \$500,000. However, this trend may not be sustainable.

10. CONTACT INFORMATION

For further information regarding this report, the activities of the DEM Emergency Response Team or OSPAR, contact James Ball, DEM Emergency Response Administrator, Office of Emergency Response at james.ball@dem.ri.gov or 401-222-4700 extension 7129.