

US EPA ARCHIVE DOCUMENT



Office of Technical & Customer Assistance

Final Project Report

Project Title: *MS4 Construction Site Runoff Control Environmental Results Program*

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Project Description: The Construction Site Runoff Control minimum control measure is one of six measures that the operator of a Phase II regulated small municipal separate storm sewer system (MS4) is required to include in its stormwater management program to meet conditions of its Rhode Island Pollutant Discharge Elimination System (RIPDES) permit. The Department of Environmental Management (DEM) works with 34 Storm Water Coordinators to implement the requirements of the Phase II Final Rule. The DEM amended the RIPDES Regulations on February 5, 2003 to include the Phase II requirements for the MS4s. The regulations require MS4s to comply with six Minimum Control Measures. This grant proposal presents an ERP approach to self-certify compliance with, confirm compliance with, and measure compliance with the Construction Site Runoff Control Minimum Control Measure. DEM, working with the University of Rhode Island, will develop a mandatory self-certification program for construction site owners/operators using ERP tools for the use of BMPs to control erosion and sedimentation from construction sites greater than one acre.

Problem Statement - MS4s in Rhode Island:

This grant will address the specific problem of noncompliance with the requirements of the Rhode Island General Permit for Stormwater Associated with Construction Activity and local erosion and sediment control ordinances. The Stormwater Phase II Final Rule for Construction Site Runoff Control Minimum Control Measure (Specific link to EPA's Strategic Goal 2 – Clean and Safe Water) requires municipalities to develop Qualified Local Programs (QLPs) and perform inspections of 100% of constructions activities greater than one acre within their jurisdiction. Diminishing resources at the federal, state and local levels is making it much more difficult for MS4 operators to implement compliance and inspection programs. This project will develop an ERP model as a means of satisfying the small MS4 General Permit requirements.

Major Results:

Baseline and Post-Certification Inspection Results

A total of 100 baseline (6/6/2008 to 10/22/2009) and 51 post-certification (6/6/2011 to 10/22/2012) field inspections were conducted by OCTA, OWR and URI.

The baseline data presented in Table 1 (see attachment) show that compliance rate performance for selected indicators (N=17) ranged from 30% (p₁, EBPI B2) to 81% (p₁, EBPI D5) in 2008/2009. With USEPA-HQ funding and stakeholder input, URI and OTCA developed a comprehensive Environmental Results Program (ERP) workbook and checklist; the checklist contains 17 EBPI Y/N questions across the following environmental categories: DEM general permit conditions, RIPDES construction general permit administrative conditions, erosion and sediment control conditions, other controls checklist, and post construction stormwater management. Following baseline inspections, two statewide workshops were held in 2010 and 2011; workbook and checklist certification materials were then provided to all regulated entities.

In 2011/2012, 51 post-certification follow-up inspections of randomly selected facilities were conducted. Comparison of the post-certification audit data to baseline data (using Fisher's exact test) found that 10 of 17 indicators (or 59%) showed significant improvement in regulatory compliance across all four measurement categories; i.e., P value $\leq .05$. Using the Simes modified Bonferroni adjustment procedure for multiple comparisons, significant improvements in 5 (29%) indicators (B1, B2, C2, C6, and C8) remained, Table 1. The average observed improvement in performance for these 5 indicators was 34%.

Examples of EBPIs where significant improvements were achieved include:

Notification to the commencement of site alterations: **37%** improvement;
Inspect stormwater control measures after significant storm event: **34%** improvement;
Maintain SWPPP at construction site: **42%** improvement;
Clean drains and discharge locations: **44%** improvement.

Conclusion: The analysis of field inspection data collected by OCTA, OWR and URI showed that statistically significant improvements in environmental performance were achieved by applying the ERP model to this industry sector.

Project Partners:

- Rhode Island Department of Environmental Management
- University of Rhode Island, Center for Pollution Prevention & Environmental Health
- U. S. Environmental Protection Agency



Project Participants

Ronald Gagnon, P.E., Chief – Office of Customer and Technical Assistance – Project Manager
Richard Enander, PhD., Supervising Environmental Scientist – Office of Customer and Technical Assistance – Project statistics and measurements
Beverly Migliore, Supervising Environmental Scientist – Office of Customer and Technical Assistance – Stakeholder work group organization
Michele McCaughey – Environmental Scientist, Office of Customer and Technical Assistance – Lead inspector for base line and post intervention audits
Cheryl Corsi, Administrative Officer, Office of Customer and Technical Assistance – Budget Reporting
Leanne DeCosta, Senior Information&Public Relations Specialist, Office of Customer and Technical Assistance – Data Entry

Eric Beck, P.E., Supervising Environmental Engineer – Office of Water Resources- Project management and training
Brian Lafaille, P.E., Senior Sanitary Engineer – Office of Water Resources – Designer of the compliance workbook with the three check lists, training
Jennifer Stout, Sanitary Engineer – Office of Water Resources – Inspections
Margarita Chatterton, Sanitary Engineer – Office of Water Resources – Data management

Gene Park, PhD – University of Rhode Island – Assist with project management, work book and EBPI development, training, inspections
R. Choudary Hanumara, PhD – University of Rhode Island – statistical review
Richard Genovesi, Student Intern, University of Rhode Island – inspections, data management

Allison Hamel, Environmental Scientist - Rhode Island Department of Transportation – Developed model stormwater pollution prevention plan (SWPPP), training

Brandon B. Faneuf – Northeast Chapter of the International Erosion Control Association - training
Peter Hanrahan - Northeast Chapter of the International Erosion Control Association - training

Initially Projected Outputs and Outcomes:

The following outlines the outputs and outcomes that were projected before the project was initiated, and were presented in the Project Work plan. Section 7 in this report outlines what was actually achieved with the project.

1. Increased awareness and knowledge by contractors and builders of environmental regulatory requirements and compliance and management issues as a result of project documents that are easy to read and understand, workshops, and compliance assistance provided through the project.
2. Improvements in environmental performance as indicated through tracking EBPI's identified for the project.

4. Information and “lessons learned” in the project will be applied to future iterations of the workbook, checklist, and overall program structure.
5. Increasing improvements in environmental performance over time as the industry gains experience working with DEM-OTCA, and by using self-educational tools commonly and successfully employed in Environmental Results Programs.

It is anticipated that voluntary self-certification will be incorporated into the next stormwater general permit, making submission of the three compliance check lists a mandatory requirement. Performance measurement statistics will track all future progress.

General Approach Used to Implement the Project:

From the beginning, all project partners were engaged and actively involved in developing this new program for Rhode Island’s construction industry, with a goal of developing a sustainable and comprehensive program available on a statewide basis. This development included the following basic components:

Staff began the project by defining the universe of projects subject to the requirements of the General Permit for construction activities greater than an acre. (<http://www.dem.ri.gov/pubs/regs/regs/water/ripdesca.pdf>)

This was one of the more challenging aspects of this project. In typical ERP sectors the universe is easily defined based on an industry specific listing of that sector. For this sector we had to determine the number of projects greater than an acre that were under construction. This task was performed and summarized as follows.

MS4 Construction Site Runoff Control ERP

Task – Estimate the Universe

DEM will estimate the number of projects that will be under this program by identifying and counting projects covered under the General Permit, using 2007 as a base year.

Projects that are covered under the General Permit fall into the following categories:

Projects that disturb an area equal to or greater than one acre that receive a permit from the Coastal Resources Management Council (CRMC);

Projects that disturb an area equal to or greater than one acre that receive a permit from a Qualified Local Program (QLP)

Projects that disturb an area equal to or greater than one acre that receive a permit from the DEM Freshwater Wetlands Program; and

Projects that disturb an area equal to or greater than one acre that file a NOI and receive a permit directly from the RIPDES Program.

PROJECT TYPE	NUMBER OF PROJECTS
CRMC	90

QLP	35
Freshwater Wetlands	385
RIPDES	25
TOTAL	535

Task – Determine Base Line Sample

Use the EPA ERP Results Analyzer

(http://www.epa.gov/erp/roadmap/resources/erp_resultsanalyzer_nodate.xls) to determine the number of random, baseline inspections needed to perform future EBPI measurements.

The goal for the EBPI baseline and future random sampling comparisons is to measure at least a 10% improvement in compliance. We choose 10% because if baseline sampling indicates an approximate 90% compliance rate, it is expected that further improvement would not be statistically measurable (i.e., with 95% confidence) based on selected sample sizes (see Table below). Therefore we can accept a no further action required for this indicator.

If the baseline compliance rate for an indicator is 80% or less, it is expected that an intervention (DEM or other training, self-audit, technical assistance) will be used to improve compliance as much as possible to achieve the desired 90% goal.

The method used is to start with the baseline universe of 535 projects = N_1 and assume values for N_2 = future year projects, n_1 = number of random baseline inspections from N_1 , and n_2 = number of random inspections from year N_2 . The next step is to assume a number of positive answers for a given indicator, $+n_1$ from the baseline sample of n_1 and then the number of positive answers for the same indicator, $+n_2$ for the random inspections post-intervention of n_2 .

By varying the number of inspections for n_1 and n_2 , and the positive response rate for p_1 and p_2 , the optimal number of inspections can be determined to allow measurement of an estimated minimal statistically significant 10%+ change in compliance for a given indicator based on a sample size of 100, 90, 80 and 70 random inspections.

N_1	N_2	N_1	N_2	$+N_1$	$+N_2$	P_1 %	P_2 %	% CHANGE	STATISTICALLY SIGNIFICANT
535	535	100	100	50	63	50	63	13	Yes
				50	62	50	62	12	No
				60	72	60	72	12	Yes
				60	71	60	71	11	No
				70	81	70	81	11	Yes
				70	80	70	80	10	No
				80	90	80	90	10	Yes
				80	89	80	89	9	No
		90	90	50	63	55	70	15	Yes
				50	62	55	69	14	Yes
				50	61	55	68	13	No
				70	80	78	89	11	Yes
				70	79	78	88	10	No
		80	80	40	52	50	65	15	Yes

				40	51	50	64	14	No
				64	72	80	90	10	No
				64	73	80	91	11	Yes
		70	70	35	46	50	66	16	Yes
				56	63	80	90	10	No
				56	64	80	91	11	Yes

In order to detect a smaller effect size (difference between proportions p_1 and p_2), larger samples are needed. At 100 inspections, we can measure a 13% change at 50 % baseline compliance and a 10% change at 80% compliance. At 80 inspections and below, we need at least a 15% change in compliance for a statistically significant result. However at the higher baseline compliance rate of 64% we can still measure an 11% change.

Therefore, it appears that 100 inspections can provide very good statistical results by detecting minimal increases in compliance for a range of baseline proportions. Good results are also possible with fewer inspections. Targeting 100 inspections as the random sample size and achieving the closest to this number as resources allow will produce a successful program.

Early in the development process, staff developed a draft compliance checklist to be used in the performance of baseline audits, followed later by a draft checklist to be used in the certification program. It is found in the Appendix of this report.

Development of the compliance work book/check list evolved from a single check list to a work book containing three checklists that played a major role in the improved compliance. The first check list noted as DEM Submittal 1, is used to notify the Agency that construction has started and that BMPs are properly in place. Lack of notification is a major non-compliance issue; without notifications it is very difficult to determine which projects are under construction and therefore difficult to determine where inspections should be conducted. Under the project period, this EBPI went from 34% compliance at baseline to 71% compliance after the interventions.

The second check list, DEM Submittal 2, is designed to be used during the active construction period to ensure that compliance with the General Permit, including requirements for erosion and sediment controls, is being met. An example of improved compliance using this check list is found for the EBPI requiring that a copy of the SWPPP be kept at the construction site at all times. A statistically significant improvement in compliance from a base line of 34 % to a post –intervention of 76% was observed.

The third check list, DEM Submittal No. 3, is designed to be used at the completion of the construction project. Although no base line data was gathered for this project, (Outside the scope of the original grant proposal) it will be used to ensure that contractors notify the Agency when construction is completed and that all BMPs are removed and that all erosive areas are properly stabilized.

An important by-product of the ERP development was the development of a model Stormwater Pollution Prevention Plan by the RI Department of Transportation. This model SWPPP has been added to the DEM web page and its use is encouraged by all consultants and contractors that are regulated under the General Permit.

DEM and URI staff conducted a total of 100 baseline inspections utilizing the ERP check list. Problems encountered during the inspection process included an inability in finding permitted projects under construction. The current economic downturn appears to be the main reason for the lack of construction projects. Baseline inspections were performed over a two year period to meet the 100 inspection total.

Stakeholder Meetings were held on February 11, 2010 and March 19, 2010. The Agendas and presentation information were posted on the OCTA website at:

<http://www.dem.ri.gov/programs/benviron/assist/ms4/index.htm>

Invitation to Stakeholders:

RHODE ISLAND

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767 TDD 401-831-5508

January 13, 2010

MS4 Construction Site Runoff Control Environmental Results Program (ERP) Meeting Invitation

The US Environmental Protection Agency has funded a grant to the RI Department of Environmental Management (the Department) to establish the MS4 Construction Site Runoff Control Environmental Results Program (ERP). The goal of this program is to establish an ERP that would allow a self-certification process to confirm and measure compliance with requirements of the Construction Site Storm Water Runoff Control minimum measure of the Phase II Stormwater Regulations.

In our efforts to complete this ERP, we have proposed to establish a stakeholder group that will be composed of representatives of various parties that participate in this process. We are asking you to become a member of this group and help us develop this process so that it is a true reflection of the variety of expertise's involved in the management of stormwater activities. We hope that this group will help us in the development of the final checklist for the program, establish metrics to quantify compliance and develop policies related to this process. In this manner we hope to move onto training workshops for self-certifiers and municipal stormwater coordinators as well as establish a technical assistance program for users.

We anticipate that it will take two (possibly three) meetings to identify the issues and meet the goals of our project. To begin this process we propose the first meeting to be on February 11, 2010 from 2 to 4pm at the RIDEM Promenade St Office, Room 300. At this meeting we will provide a framework of the checklist we anticipate using in the program and ask for your suggestions on additions/deletions and ways to improve compliance with the regulations.

This is your opportunity to be part of the foundation for a state initiative that will surely affect your job activities in some way. We hope that you will share with us your talents and abilities to address this important environmental issue.

If you will join us or would like further information about this program, feel free to contact me by email or at 401-222-4700x 7503.

Thanks for your interest.

Beverly Migliore

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RI DEM/Technical and Customer Assistance

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RIDEM also felt that making appropriate training workshops for consultants and contractors as well as key staff available before certification took place was very important, to assist them in evaluating their compliance in the self auditing/certification process, as well as becoming more familiar with applicable regulations, best management practices, and key areas of concern in sedimentation and erosion control operations. One training workshop for DEM staff was held on September 15, 2010 and two training workshops for external partners were held, one on September 15, 2011 for inspectors, and a second on November 15, 2011 for consultants and contractors. The Power Point presentations used for the work shops are found in the Appendix.

Another important component was the availability of compliance and technical assistance provided by RIDEM and URI as needed, by means of on-site visits, telephone, email, and written assistance before, during, and after certification was completed.

A Construction Site Stormwater Compliance Program web page was developed, <http://www.dem.ri.gov/programs/benviron/assist/ms4/index.htm>, and placed on the RIDEM website prior to implementation of the program. The webpage was designed to provide facility operators with information and documents to be used in the certification process, as well as be available as an ongoing informational resource.

The program was implemented by providing the compliance check lists with all Freshwater Wetland and RIPDES permits issued beginning in the summer of 2011. The following permit conditions was developed and included in all permits:

Special Condition for the General Permit for Storm Water Discharge Associated with Construction Activity - Construction Activities which disturb one (1) or more acres of land and where storm water runoff is directed, via a point source, into a separate storm sewer system or into the waters of the State, are required to seek coverage under the Rhode Island Pollutant Discharge Elimination System (RIPDES) storm water permit. In accordance with Part I.C.2.b. of the *General Permit RIPDES Stormwater Discharge Associated with Construction Activity* (“RIPDES CGP”) (effective September 2008), point source discharges of storm water associated with construction activity that disturb > 1 acre are automatically authorized upon the applicant’s receipt of a Freshwater Wetlands Permit. Please be aware that not all aspects of the proposed project have been reviewed by the DEM Freshwater Wetlands Program for conformance with the requirements of the RIPDES CGP. The owner/operator is required to comply with all terms and conditions of the RIPDES CGP to maintain authorization. This includes but is not limited to developing and maintaining a Storm Water Pollution Prevention Plan (SWPPP), performing the required inspections and maintenance of the selected Best Management Practices (BMPs), and complying with all applicable record keeping and retention requirements. The DEM RIPDES permitting program in cooperation with the DEM Office of Customer and Technical Assistance has developed a Construction and Development Activity Storm Water Compliance Checklist (“Checklist”) as a compliance assistance tool. In the future, the use of this tool will be mandatory. Despite the fact that the use of the Checklist is not mandatory at this time, owners and operators may begin using this tool to satisfy the inspection requirements of the 2008 RIPDES CGP. Please be advised that if your site is the subject of a DEM inspection, the Checklist will also be used by DEM Inspector(s) to determine whether or not your site is in compliance with the 2008 RIPDES CGP.

While compliance with underlying regulatory requirements is mandatory, participation in the program is voluntary. The benefits of participating in the program were strongly advocated to

facility operators throughout the project, at workshops and meetings attended, in letters, and in the program documents.

Randomly selected post-certification audits were completed by URI, and RIDEM, staff, with fifty (50) construction sites being audited. Random samples (facility audits) were required to make 1) statistically valid statements about the regulated universe from which the sample was drawn, and 2) meaningful statistical comparisons among baseline and post-certification data sets. Statistical analyses were conducted in accordance with the methods published in “Environmental Health Practice: Statistically Based Performance Measurement,” American Journal of Public Health. 2007;97(5):819-824 and EPA’s “Generic Guide to Statistical Aspects of Developing an Environmental Results Program,” available at: http://www.epa.gov/erp/roadmap/resources/erp_statisticalguide_4-25-2003.

Enforcement Actions

RIPDES Program staff conducted a total of 11 targeted inspections of construction projects permitted under the RIPDES Construction General Permit. Out of the 11 total inspections two projects were referred for formal enforcement and 9 projects were addressed through informal enforcement actions. All projects that received informal enforcement actions have returned or are in the process of returning to compliance.

Here is the breakdown:

Informal Enforcement Actions

- 1.IGUS, Inc. **RIR100850/OCTA 11-010**
- 2.Former American Tourister **RIR100810**
- 3.Kent County Memorial Hospital **RIR100816**
- 4. NE Tech Parking Lot Expansion **RIR100845**
- 5.The Village on the Waterfront **RIR100851**
- 6.Chevron **RIR100910/WQC 10-035**
- 7.CVS Store # 2238 Johnston **RIR100866/UIC 001491**
- 8.RI Mall Fashion Store Expansion **RIR100867/FWW 11-0162**
- 9. Garden City Center **RIR100894/UIC 001521**

Formal Enforcement Action Referrals

- 10.Belmont Commons **RIR100812** – Referred for Formal Enforcement for Failure to Maintain SWPPP and Conduct Required Inspections – Fast Track NOV recommended.
- 11.Watchemoket Pump Station **RIR100821** - Referred for Formal Enforcement for Failure to Properly Install, Operate, and Maintain BMPs – Fast Track NOV recommended.

Budget Summary:

DEM	URI
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Total Allocated	\$75,400.00	\$115,000.00
Spent Previously	\$62,600.00	\$104,633.00
Spent this Quarter (4 quarters)	\$12,800.00	\$10,367.00
Remaining	\$0.00*	\$0.00

* - Subject to final report from the Budget office.

Conclusion

The development of an Environmental Results Program for construction site stormwater compliance resulted in statistically significant improvement for a total of 10 Environmental Business Practice Indicators (EBPIs). Observed improvement in compliance ranged from 18% to 44% with an average of 34% noted.

A stormwater compliance work book was developed that included three submittals to be used at the start of construction, during the active construction period, and at the end of construction. The three submittals will be used to measure compliance with the requirements of the RIPDES Construction Stormwater General Permit and with the EPA Construction Site Runoff Control Minimum Control Measure.

Three training events were held during the grant period. The power point presentations used at these events are provided in the appendix of this report. Approximately 40 individuals from the construction and consultant sectors participated in the events. The training events provided the Department with the opportunity to partner with the RI Department of Transportation and the Northeast Chapter of the International Erosion Control Association. In addition to the ERP training, these partnerships allowed additional training on the RI Model SWPPP and current erosion and sedimentation control technologies.

The project required two grant extensions due to the poor economic conditions that hindered construction projects and made it difficult to perform the required number of random inspections. The project was completed within the \$200,000 grant budget.

Finally please note that all documents produce under this grant project are transferable to other government entities that have responsibility for compliance with NPDES and Construction Site Runoff Control requirements.

Table 2: Schedule of major project tasks

Task Name	Task Description	Start Date	End Date
Develop Compliance Check List	DEM, working with the University of Rhode Island, will develop a compliance check list based on the General Permit conditions for the use of BMPs to control erosion and sedimentation along with other requirements of the General Permit. The Check List will be modeled on the check lists successfully developed by this partnership for the Auto Body and Auto Salvage sectors. The check list will include a self-certification requirement for the General Permit notifiers.	10/07	Completed

Develop and submit QAPP	DEM and URI will work together to prepare the QAPP to ensure that data is properly collected and assessed. The QAPP will include a description of how the number of random inspections for baseline and post certification conditions is calculated.	10/07	Completed
Complete QAPP Revisions	DEM will revise QAPP based on comments received from EPA review	1/08	Completed
Develop Statistical Methodology	DEM will develop the statistical methodology to compare baseline inspection results to the post certification random inspection results, based on previous ERP sectors.	5/08	Completed
Develop Data Management Strategy	The RIPDES MIS staff will be engaged to develop a data management strategy to receive, store and analyze inspection data.	1/08	Strategy developed, Implementation delayed
Estimate Universe	DEM will estimate the number of projects that will be regulated under this program by reviewing the number of Notifications of Intent received for coverage under the General Permit, on an annual basis, for the last three calendar years.	4/08	Completed
Determine Baseline Sample	Use the EPA ERP Results Analyzer to determine the number of random, baseline inspections needed to perform future EBPI measurements.	5/08	Completed
Conduct Base Line Inspections	Random, base line inspections will be performed by the DEM/URI partnership to determine compliance status with the check list parameters. A specific number of EBPIs will be selected based on the EPA Measurable Goals Guidance for Phase II Small MS4s and the results of the base line inspections.	5/05	Completed.
Develop Stakeholder Group	DEM and URI will solicit a number of past Notifiers, contractors, consultants, representatives from non-governmental organizations, and other interested parties for interest in joining a stakeholder group to review, comment, and advise on issues concerning this program. One stakeholder group meeting will be held to discuss the draft check list. The remaining meetings will be held after baseline inspections are completed to ensure that no bias is introduced. We would schedule from two to four meetings throughout the development of the project to discuss specific milestones such, base line results, training programs, and inspection and enforcement strategies. Industry.	5/08	Completed Meetings held on February 11, 2010 and March 18, 2010
Develop Training Work Shops	DEM and URI will develop a training program for past and prospective Notifiers, Storm Water Coordinators and industry representatives that would be subject to the self-certification inspection and the conducting of random and targeted inspections. The training will focus on how to conduct a self-inspection or random/targeted inspection using the check list, correct any deficiencies, use of the Return-to-Compliance forms, and other factors important to maintain compliance with the General Permit. The training will build on current programs for BMP design and implementation and the training under development by the collaborative arrangement among URI, DEM and	10/08	Completed Sessions held on September 15, 2011 and November 15, 2011

	the Department of Transportation to provide training and information tailored to municipalities. The training will be coordinated so that the URI, DOT collaborative will focus on training municipalities and the ERP training will focus on industry.		
Distribute Self-Certifications	DEM will distribute the final Check List with certification statements to all persons that submit a Notice of Intent for coverage under the General Permit. DEM will also provide check lists and certification statements to the Storm Water Coordinators for distribution to Notifiers in their respective MS4s. DEM will offer technical assistance in the form of phone call consultations, email questions on an as needed basis during this time period. DEM will investigate and develop cost estimates to establish a centralized data base for the electronic submission of all inspection check lists (self –certifications, random inspections, targeted inspections by both DEM and Storm Water Coordinators)	2/09	7/09 Completed and on-going, included with all stormwater and wetland permits issued
Develop Inspection Strategy & Conduct Training work Shops	DEM will work with the Storm Water Coordinators to develop an inspection strategy to ensure good and consistent data collection based on the number of random inspections needed (using the EPA ERP Results Analyzer) to measure performance of the EBPIs. DEM and URI will conduct the training program after the Check Lists are distributed and the regulated community has had a chance to become familiar with the program through the public stake holder process	2/09	7/09 Completed 12/2011 8/2012
Determine Number of Random Samples and Conduct Random and Targeted Post-certification Inspections	The EPA Results Analyzer will be used to determine the number of random samples. DEM and the Storm Water Coordinators will conduct the random inspections and a select number of targeted inspections using the check list. All data will be gathered by DEM for statistical analysis.	8/09	4/10 4/11 5/12 Completed
Develop compliance Policy for Enforcement	DEM and the Storm Water Coordinators will develop a compliance policy for enforcement to ensure that referrals are made using consistent information and actions are taken on a consistent basis. The policy will identify the coordination between local and state responsibilities.	11/09	4/10 4/11
Project Reports	Quarterly and Final Project Reports	1/08	9/4012 Completed

Appendix

Links to Documents Produced During this Grant Project

Construction Site Stormwater Compliance Fact Sheet

<http://www.dem.ri.gov/programs/benviron/assist/ms4/pdf/conerpfs.pdf>

Construction Site Stormwater Compliance Work Book

<http://www.dem.ri.gov/programs/benviron/assist/ms4/pdf/conerpwb.pdf>

Rhode Island Model Stormwater Pollution Prevention Plan (SWPPP)

<http://www.dem.ri.gov/programs/benviron/water/permits/swcoord/index.htm#swppp>

Power Point Presentations used for Training

February 11, 2010 Training Event -

<http://www.dem.ri.gov/programs/benviron/assist/ms4/pdf/ms4pro.pdf>

RIPDES Phase II Stormwater Program -

<http://www.dem.ri.gov/programs/benviron/assist/ms4/pdf/ripdepre.pdf>

Local/Municipal Stormwater Management Programs -

<http://www.dem.ri.gov/programs/benviron/assist/ms4/pdf/swpres.pdf>

MS 4 Data Management - <http://www.dem.ri.gov/programs/benviron/assist/ms4/pdf/dataman.pdf>

November 15, 2011 Training Event -

Agenda: <http://www.dem.ri.gov/programs/benviron/assist/ms4/pdf/wrkshp11.pdf>

Presentations:

Owners and Operators: <http://www.dem.ri.gov/programs/benviron/assist/ms4/pdf/conerp.pdf>

Introduction to RI Model SWPPP:

<http://www.dem.ri.gov/programs/benviron/assist/ms4/pdf/Intswppp.pdf>

The Evolution of Erosion Control Technology:

<http://www.dem.ri.gov/programs/benviron/assist/ms4/pdf/erocon.pdf>

The Evolution of Sediment Control Technology:

<http://www.dem.ri.gov/programs/benviron/assist/ms4/pdf/sedcon.pdf>