



RIGRP DEPLOYMENT TEST PLAN – DRAFT

Developed by:
Nuka Research and Planning Group, LLC

Testing Overview

Six days of on-water testing will be conducted over the course of a two week period in late September/early October 2008 to evaluate the draft tactics and strategies in the Geographic Response Plan for Upper Narragansett Bay. Testing schedule is subject to adjustment based on severe weather or the occurrence of an actual spill.

There is additional project information including draft GRPs on the project website at:

<http://rigrp.nukaresearch.com>

Goals and Objectives

The overall goal of this deployment testing cycle is to conduct field tests that establish boom deployment rules-of-thumb that may be used to modify/improve the Providence River GRPs and may also be applied to future RIGRP projects.

The overall objectives of the testing cycle include:

- Test a variety of boom deployment configurations (deflection, diversion, exclusion).
- Determine appropriate anchoring conventions based on deployment configuration, operating environment, on-scene conditions, etc. (i.e. one anchor every 100 feet, 200 feet, etc.)
- Determine the logistical and personnel resources necessary to tend a boom array through multiple tide cycles.
- Determine operating limits for boom deployments in high current areas and identify alternate deployment strategies, if possible.
- Identify areas where permanent shoreline anchor attachments may be installed.
- Test the logistics of using a staging area outside of the Port of Providence.
- Test the operation and deployment of RIDEM skimmers.

Participation

All deployment will be done by Clean Harbors and Coastline personnel.

For each day of testing, there will be 2-3 facilitator/coaches to provide direction, answer questions, and keep the process moving.

For each day of testing, there will be a small group of observer/evaluators who will observe part or all of the day's deployment and will be asked to fill out evaluation forms. All observer/evaluators will be provided with a briefing on how to evaluate boom deployment drills.

It will be emphasized throughout the testing cycle that these tests are designed to test the STRATEGIES not the responders.

Equipment

Equipment (booms, anchor system, vessels, skimmers, and associated equipment) will be supplied by Clean Harbors, Coastline Services, RIDEM, and the Providence response co-op. RIDEM will use the tests to deploy/test their skimmers.

Daily plans will include list of the quantity and source of all equipment (boom, anchors, line, floats, etc.)

Safety

Safety is always the highest priority. Daily safety briefings will be presented by the lead response organization for that day (Clean Harbors or Coastline), and a Safety Officer will be designated.

Safety is everyone's responsibility. All participants are expected to abide by the safety policies of their agency or organization. If any participant observes an un-safe act or condition, they should immediately take whatever actions are necessary to correct the problem (including stopping the deployment test) and notify the facilitator and or the safety officer.

All participants who are on vessels or docks must wear a personal flotation device at all times. Participants should dress in work clothes appropriate for the weather conditions.

Testing Methods

These tests are intended to field verify the booming strategies in the GRPs. It is important to establish and follow set methodologies to collect and document as much information as possible. The following ground rules will help to achieve this:

- Each testing day will have a specific set of written objectives that set out what we hope to learn and accomplish that day.
- All booming strategies will be deployed first **as written** in the GRP in order to determine whether the GRP can be deployed as written.

- Once the boom has been deployed as shown on the page, the facilitator and responders will confer regarding whether the deployment is effective, or whether it requires modification from the paper version.
- The responders and facilitator will confer and determine how/whether to make modifications to the GRP and re-deploy.
- The facilitator will record any changes to the GRP.
- Once the boom configuration has been successfully deployed (either as written or after one or more modifications), other objectives will be evaluated based on the day's testing plan (i.e. maintaining/tending through tide, evaluating anchor points, etc.)
- The facilitator and responders will discuss how/whether the deployment addresses additional objectives.
- Evaluators will also observe and evaluate based on set criteria.
- At the end of each testing day, a hot wash will be held to solicit opinions, ideas, inputs.
- If specific problems or issues are identified during a test, subsequent testing objectives may be modified to address those issues.

Documentation

Since on-site conditions will have an impact on deployment, we will be careful to capture good data on tide cycles, wind speed and direction, sea state, precipitation, and any other environmental conditions or on-scene factors.

Participants will document the following information based on the input from responders:

- Was boom length effective? If not, how was it adjusted?
- Was deployment configuration/boom angles effective? If not, how was it adjusted?
- Was anchor configuration effective? If not, how was it adjusted?
- How long did it take to mobilize from the staging area to the site?
- How long did it take to deploy?
- How many people were required to deploy? To tend? To demobilize?

Nuka will develop standard evaluation forms for use by evaluators, with standard evaluation criteria. At the beginning of each day, we will give a brief instruction to our evaluators on how to fill out the forms. Photographs and videotape will also be used as documentation.

Communications

Deployment tests will communicate using cellular telephones and Marine VHF radios. A working frequency will be assigned for vessel-to-vessel and vessel-to-shore communications.

Lunches and Restrooms

Boxed lunches will be provided to all responders, evaluators, and facilitators each day. Lunch location will be shoreside at varying locations depending upon the testing site. Restroom facilities are available at or near most lunch sites.

GRP Tactics and Strategies

Copies of all GRPs to be included in this testing program are available online at <http://rigrp.nukaresearch.com/>

Proposed Schedule

The following schedule is proposed to include a range of sites and objectives. Scheduling was largely based on tide stage considerations. Draft GRPs are included at the end of this document.

Overview Schedule

Date	Times	GRP sites	Staging Area (tentative)
Tues 9/30/08	10:00 am to 6:00 pm	RI-23, Mill Gut	Haines Point Park
Wed 10/1/08	8:00 am to 4:00 pm	RI-21, Barrington River & RI-19 Smith Cove	Haines Point Park
Thurs 10/2/08	7:00 am to noon (no lunch)	RI-16, Bullock Cove	Haines Point Park
Tues 10/7/08	10:00 am to 6:00 pm	RI-14, Watchemoket and RI-6, Stillhouse Cove	Collier Point Park
Wed 10/8/08	7:00 am to 7:00 pm	RI-11, India Point/Bold Point and RI-12, Seekonk River	Collier Point Park
Thurs 10/9/08	8:30 am to 5:30 pm	RI-03, O Cove & RI-05 Pawtuxet Cove	Long Meadow Boat Ramp

Detailed Schedule

Tuesday, September 30, 2008

Start of Day: 10:00am

Staging Area & Meeting Point: Haines Point Park

Lunch location: on vessels

Testing Site: RI-23, Mill Gut

Tactics: DV-01, DF-02

Objectives:

- Deploy DV-01 with chevron angled to ebb rip current.
 - Evaluate shoreline recovery areas.
 - Identify potential permanent shoreline anchor points.
- Deploy DF-02
 - Evaluate anchoring and deployment conventions for cascaded deflection array.

Tides (Providence Station):

Low 1		High 1		Low 2		High 2	
2:04 AM	0.00 ft	9:12 AM	5.70 ft	2:41 PM	0.00 ft	9:32 PM	4.80 ft

Schedule (all times are approximate):

- 10:00 – Meet at Haines Point for Safety Briefing & Plan of Day
- 10:30 – Mobilize to site
- 11:00 – Initiate testing (deploy DV-01)
- 12:30 – Lunch on vessels
- 14:30 – Remove DV-01 & transit to DF-01
- 15:00 – Resume testing (deploy DF-02)
- 17:00 – Return to staging area
- 17:30 – Hot wash and demobilization
- 18:00 - Adjourn

Wednesday, October 1, 2008

Start of Day: 8:00am

Staging Area & Meeting Point: Haines Point Park

Lunch location: Warren Town Dock/Cove (tentative)

Testing Site: RI-21, Barrington River & RI-19 Smith Cove

Tactics: RI-21 ~ DV-01a & one of the exclusion (EX) sites; RI-19 ~ DV-01

Objectives:

- RI-21: Deploy DV-01 across river
 - Determine whether feasible to boom across river.
 - If strategy doesn't work as written, consider alternatives (shorter legs diverting to collection point).
 - Evaluate shoreline collection areas.
 - Identify potential permanent shoreline anchor points.
- RI-21: Deploy EX
 - Deploy a small exclusion array around one of the marsh areas identified in the GRP.
 - Identify rules-of-thumb for anchoring exclusion array and working in shallows.
- RI-19: Deploy DV-01 and alt
 - Test both possible configurations to close off Smith Cove and evaluate
 - Evaluate shoreline collection areas.
 - Identify potential permanent shoreline anchor points
 - Note: Ebb tide may make deployment difficult; if so, site may be retested on another day as time allows

Tides (Providence Station):

Low 1		High 1		Low 2		High 2	
2:36 AM	0.00 ft	9:52 AM	5.60 ft	3:17 PM	0.10 ft	8:12 PM	4.60 ft

Schedule (all times are approximate):

08:00 – Meet at Haines Point for Safety Briefing & Plan of Day
08:30 – Mobilize to site (RI-21)
09:00 – Initiate testing (RI-21/DV-01)
11:00 – Initiate testing (RI-21/EX)
12:00 – Lunch
13:15 – Mobilize to test site (RI-19)
13:30 – Initiate testing (RI-19/DV-01)
15:00 – Return to staging area
15:30 – Hot wash and demobilization
16:00 - Adjourn

Upper Narragansett Bay Geographic Response Plan Deployment Tests

Thursday, October 2, 2008

Start of Day: 7:00am

Staging Area & Meeting Point: Haines Point Park

Lunch location: Haines Point Park

Testing Site: RI-16, Bullock Cove

Tactics: DV-01

Objectives:

- Deploy DV-01 and DV-01alt
 - Test both chevrons to see which can hold at flood tide.
 - Evaluate shoreline collection areas.
 - Identify potential permanent shoreline anchor points.
 - Note that due to daylight & tide, we will be deploying later in the tide cycle than is desirable.

Tides (Providence Station):

Low 1		High 1		Low 2		High 2	
3:11 AM	0.10 ft	10:33 AM	5.20 ft	3:54 PM	0.40 ft	8:51 PM	4.30 ft

Schedule (all times are approximate):

07:00– Meet at Haines Point for Safety Briefing & Plan of Day

07:30 – Mobilize to site

08:00 – Initiate testing (Deploy DV-01 & alt)

11:00 – Remove boom & transit back to staging area

11:30 - Hot wash and demobilization

12:00 – adjourn

Upper Narragansett Bay Geographic Response Plan Deployment Tests

Tuesday, October 7, 2008

Start of Day: 10:00am

Staging Area & Meeting Point: Collier Point Park (tentative)

Lunch location: on vessels

Testing Site: RI-14, Watchemoket and RI-6, Stillhouse Cove

Tactics: RI-14/EX-01 and RI-6/EX-01 & alt

Objectives:

- RI-14: Deploy EX-01 at flood tide
 - Deploy chevron at early flood and maintain through peak tidal flow.
 - Evaluate boom lengths/chevron size.
 - Evaluate potential permanent anchor points.
- RI-6: Deploy EX-01 and alt
 - Evaluate feasibility to use EX-01 to close off Stillhouse Cove.
 - If EX-01 successful, identify potential permanent anchor points.
 - If EX-01 unsuccessful, deploy EX-01alt & evaluate.

Tides (Providence Station):

High 1		Low 1		High 2		Low 2	
1:56 AM	3.40 ft	6:50 AM	1.40 ft	2:24 PM	3.80 ft	8:42 PM	1.40 ft

Schedule (all times are approximate):

10:00 – Meet at Collier Point (or other staging area in Port of Providence) for Safety Briefing & Plan of Day
10:30 – Mobilize to site (RI-14)
11:00 – Initiate testing (EX-01). Maintain through high tide
12:00 – Lunch on vessels
14:30 – Remove RI-14 & transit to RI-6
15:00 – Deploy EX-01 (RI-6)
16:30 – Transit back to staging area
17:00 – Hot wash & demobilize
18:00 - Adjourn

Upper Narragansett Bay Geographic Response Plan Deployment Tests

Wednesday, October 8, 2008

Start of Day: 7:00am

Staging Area & Meeting Point: Collier Point Park (tentative)

Lunch location: Bold Point Park

Testing Site: RI-11, India Point/Bold Point and RI-12, Seekonk River

Tactics: RI-11/DV-01a & alt; RI-12/EX-02b

Objectives:

- RI-11: Deploy DV-01 at slack tide and tend through tidal cycles
 - Deploy at slack (low) tide and tend through next two cycles.
 - Evaluate boom lengths/angles & their ability to withstand tidal current.
 - Identify potential alternate deployments if leg across river won't hold.
 - Identify shoreline collection areas.
 - Tend boom through ebb tide (release as needed).
 - Evaluate potential permanent anchor points.
- RI-12: Deploy EX-02b
 - Evaluate feasibility of deploying exclusion array around shallow water marsh.
 - Note that this is secondary objective; primary goal for the day is to work site RI-11

Tides (Providence Station):

High 1		Low 1		High 2		Low 2	
1:04 AM	3.60 ft	5:51 AM	1.20 ft	1:30 PM	3.90 ft	7:05 PM	1.40 ft

Schedule (all times are approximate):

07:00 – Meet at Collier Point (or other staging area in Port of Providence) for Safety Briefing & Plan of Day

07:30 – Mobilize to site (RI-11). Deploy DV-01. Maintain with tending crew throughout day.

12:00 – Lunch at Bold Point

13:30 – Small team transit to RI-12. (Tending team still at RI-11)

14:00 – Deploy EX-02b (RI-12)

15:30 – Remove RI-12/EX-02b

16:00 – Observers transit back to staging area

18:00 – Remove RI-12/DV-01 (sunset at 18:25)

18:30 – Hot wash & demobilize

19:00 - Adjourn

Upper Narragansett Bay Geographic Response Plan Deployment Tests

Thursday, October 9, 2008

Start of Day: 8:30am

Staging Area & Meeting Point: Long Meadow Boat Ramp

Lunch location: Bold Point Park

Testing Site: RI-03, "O" Cove and RI-05, Pawtuxet Cove

Tactics: RI-03/DF-01; RI-05/DF-01 and EX-02 and alternates

Objectives:

- Evaluate Long Meadow Boat Ramp as Staging Area
- RI-03: Deploy DF-01 at low tide using combination hard & shoresal boom
 - Evaluate boom deployment on tidal flats at low tide.
 - Test cascaded deflection array.
 - If DF-01 location too shallow, consider alternative DF or DV sites.
- RI-05: Deploy DF-01 & EX-02b with alternates
 - Attempt to deploy a chevron at opening to P. Cove during flood tide.
 - If chevron doesn't hold, test deflection arrays.
 - Identify potential divert & collect opportunities

Tides (Providence Station):

High 1		Low 1		High 2		Low 2	
3:53 AM	3.70 ft	9:41 AM	1.30 ft	4:22 PM	4.10 ft	10:38 AM	0.90 ft

Schedule (all times are approximate):

08:30 – Meet at Long Meadow for Safety Briefing & Plan of Day
09:00 – Mobilize to site (RI-03). Deploy DF-01.
12:00 – Remove boom at RI-03
12:30 – Lunch at Pawtuxet Cove
13:30 – Deploy RI-05
16:30 – Remove RI-05 & transit back to boat ramp
17:00 – Hot wash & demobilize
17:30 - Adjourn