

Championing the Public's Right to Access the Shore

Final Report to New England Interstate Water Pollution Control Commission and the
Narragansett Bay Estuary Program
Grant # CE96184201



Prepared on November 2, 2016 by

SAVE THE BAY®

NARRAGANSETT BAY

100 Save The Bay Drive | Providence, RI | 02905 | 401.272.3540

*This project was funded by an agreement
(CE96184201) awarded by the Environmental
Protection Agency to the New England Interstate
Water Pollution Control Commission on behalf of the
Narragansett Bay Estuary Program.*



**NARRAGANSETT BAY
ESTUARY PROGRAM**

Table of Contents

Abstract.....	2
List of Acronyms.....	2
Disclaimer.....	2
Acknowledgements.....	2
Introduction	3
Methods.....	4
Results and Discussion	4
References	7
Tables	8
Figures.....	12
Appendix 1: Field Datasheet	18
Appendix 2: Quality Assurance Summary Report.....	20

Abstract

In order to ensure access to the coast for residents and visitors to Narragansett Bay, Save The Bay identified the finalization of a GIS dataset of State-designated rights-of-way (ROW) as a strategic objective for the organization over the past year. This, coupled with ground truthing site visits to the ROW currently designated by the RI Coastal Resources Management Council (CRMC), will help document sites and their conditions – ensuring that residents and visitors have access to the shore of Narragansett Bay. Of 222 ROW reported by CRMC, Save The Bay found that 216 existed on the ground; five were reported twice in the dataset. Through a partnership with CRMC and Clean Ocean Access, along with a cohort of interns and volunteers, Save The Bay spent the past year visiting all 216 designated ROW assessing and documenting the conditions of each site following the protocols in place through our EPA-approved Quality Assurance Project Plan (QAPP). Save The Bay has been using the data collected through site visits and assessments to determine if any advocacy or legal action needs to be taken to restore full public access to each site.

List of Acronyms

ROW	Right(s)-of-Way
CRMC	Coastal Resources Management Council
GIS	Geospatial Information System
GPS	Global Positioning System

Disclaimer

This project was funded by an agreement (CE96184201) awarded by the Environmental Protection Agency to the New England Interstate Water Pollution Control Commission on behalf of the Narragansett Bay Estuary Program. Although the information in this document has been funded wholly or in part by the United States Environmental Protection Agency under agreement CE96184201 to NEIWPC, it has not undergone the Agency's publications review process and therefore, may not necessarily reflect the views of the Agency and no official endorsement should be inferred. The viewpoints expressed here do not necessarily represent those of the NBEP, NEIWPC, or U.S. EPA nor does mention of trade names, commercial products, or causes constitute endorsement or recommendation for use.

Acknowledgements

Save The Bay would like to thank the Environmental Protection Agency, New England Pollution Control Commission, and the Narragansett Bay Estuary Program, for funding and facilitating this Project. We thank CRMC, Clean Ocean Access, Roger Williams University, and the University of Rhode Island for their support and contributions to this Project. We also thank our interns Matthew Marshall, Trevor Nelson, and Kim Meneo, who helped organize and conduct field work and upload field data.

Introduction

The Rhode Island Constitution guarantees citizens the right to swim in the sea and gather seaweed or fish from the shore. According to *Public Access to the Rhode Island Coast* (available: <http://seagrant.gso.uri.edu>) many hundreds of access points to the Rhode Island Coastline exist, including 42 public saltwater beaches monitored by the Department of Health, ten of which are state beaches providing approximately six miles of access. Each of Rhode Island's 21 coastal communities has at least one state-designated ROW. Nevertheless, gaining access to the shoreline can be difficult, particularly in urban areas. The Rhode Island CRMC has set a goal of designating at least one dedicated public right-of-way (ROW) for each mile of shoreline, with an ultimate goal of 420 sites (CRMC 2016).

While the number of designated public ROW has been reported as 221 for several years, the number of sites under review has increased recently. Public access along newly developing waterfronts is an area of both concern and potential, but new CRMC coastal buffer zone policies for urban waterfront redevelopment in the upper Bay create the possibility of continuous "Urban Coastal Greenways" along urban waterfronts (CRMC 2012, CRMC 2011). Save The Bay is committed to creating access to the shoreline throughout the Bay and working with local partners to ensure that each of the designated CRMC ROW is properly documented, maintained, and accessible for residents and visitors to the Narragansett Bay region.

Several datasets which document access to the shore have been developed in recent decades. However, the publicly-available geospatial datasets have deficiencies of inaccuracy and incompleteness that may make them unreliable to use. The development of a single, accurate, spatially-rectified dataset of the state-designated ROW would benefit the CRMC program and the public by providing a reliable and informative tool for identifying and describing access points and their accessibility. Additionally, the current conditions of the ROW have not been comprehensively assessed in several years and impediments to access and use of ROW have been recently exposed. Developing an up-to-date inventory of the status and conditions of the designated ROW would inform coastal managers and advocates in efforts to assure that public access is available at these sites.

This project aimed to rectify and correct the existing geographic information system (GIS) datasets and combine them into a single, accurate GIS dataset. Additionally, we aimed to ground truth the locations of the currently designated CRMC ROW and collect additional data that could inform the conditions of the sites, including identifying and characterizing any obstructions to access, documenting effects of erosion, estimating the number of available parking sites, and interpreting the potential recreational and other uses of the sites, among other information. These data could then be transferred to spreadsheet software for analysis to identify sites in need of advocacy or legal action to remediate any impediments to the public's use of these important resources.

Methods

Two GIS datasets of Rhode Island state-designated ROW are currently available to the public. One is under the control of the CRMC and was used to create a GIS web server (available at: <http://www.crmc.ri.gov/publicaccess.html>). A second dataset of all known access points in the state are available through the Rhode Island Geographic Information System (RIGIS, available at: <http://www.rigis.org/data>). We used ESRI ArcView software to combine the attribute tables of the two datasets and pare them down to only the state-designated ROW.

We used aerial photointerpretation and research of designation documents to preliminarily correct the access point spatial data and create a corrected single shapefile dataset containing only state-designated ROW containing the entire suite of attribute table data. Erroneous data points were identified and corrected by rectifying GIS coordinates for the ROW with georectified aerial imagery from RIGIS and Google Earth, ROW designation documentation from CRMC, municipal plat maps, and GPS information, as necessary and available. Existing CRMC GIS coordinates were coarsely verified in the field using modern smart phones (Apple iPhone 5/6; Samsung Galaxy S4). The data coordinates collected were used as ground verification of more accurate existing GIS geospatial data and locating residential properties. Improving spatial accuracy of the dataset was not a goal of this project; rather the spatial goal was correcting the locations of clearly erroneous data points in the dataset. Using modern smart phone GPS technology, accuracy within 3m was assumed (ArcGIS, available: <http://blogs.esri.com/esri/arcgis/2013/07/15/smartphones-tablets-and-gps-accuracy/>).

We developed field datasheets for documenting access information during site visits (App. 1). The attributes included in the datasheets were governed by the goals of the project. Field datasheets were used to conduct site assessments at each of the designated ROW during the summer months of 2015. Measurement data were taken at each ROW using a tape measure in the field for ROW width, whereas the length of the ROW was roughly estimated using aerial photointerpretation and the measurement function on Google Earth, using the most recent aerial imagery (September 2014). All GIS coordinates and field measurements were verified in the office using ESRI ArcGIS and rectified aerial photography from RIGIS. Data collected included both condition data and ancillary data interpreting possible uses of each ROW (App. 1). Additionally, four to five photographs were taken at each ROW, as possible: one depicting the street-side entrance to the ROW, one looking back to the ROW from the shoreline, one looking right at the shoreline, one looking left at the shoreline, and one showing signage, if any. Field data were rectified against the site photos to determine the extent of obstruction by rocks, fences and gates. Only obstructions apparently impeding walking foot access to the shore (i.e., not requiring climbing over or crouching under the obstruction or leaving the ROW to bypass) were accepted as obstructions for the dataset. Data were uploaded and analyzed using Microsoft Excel software.

Results and Discussion

Five of the 222 ROW reported in the existing dataset were duplicated entries under erroneous naming codes. We found 216 distinct designated ROW to actually exist. Duplicate entries were removed from the dataset leaving 216 ROW reported in the dataset. All 216 designated ROW

were assessed during the summer of 2015; results of those assessments are analyzed and reported here. An additional ROW in Bristol was designated by CRMC in January, 2016, before the final drafting of this report, which results in 217 currently-designated ROW. Although the new ROW is not analyzed and reported here with our results, we will incorporate it into the final GIS dataset before it is finalized.

Save The Bay staff, volunteers, and interns documented apparent recent use at most of the ROW, but it is apparent that almost half of all ROW have not recently been maintained (Table 1; Fig.1). More than a third of all ROW were at least partly obstructed to foot traffic (Table 1, Table 2). Vegetation overgrowth and property encroachment were the most common obstructions (Figs. 1 and 2), while purposeful obstruction of the ROW (placement of boulders, fences, or gates) was observed at nearly a tenth of the sites (Table 1; Figs 2 and 3). Warwick, Bristol, Jamestown, Portsmouth, Newport, Narragansett, and Westerly had high incidences of ROW obstruction, while Warwick, Westerly, and South Kingstown had the highest numbers of apparent purposeful obstructions (Table 2).

We observed evident nearby parking at only half of the ROW (Table 1; Fig. 4). Eight of Rhode Island's 21 coastal communities provide evident parking at less than half of their respective ROW. North Kingstown, South Kingstown, and Warren provide no evident parking for any of their ROW, while Bristol, Newport, and Warwick each have a dozen or more ROW without evident parking (Table 3). State ROW are designated for use by the general public, but a lack of public parking at these ROW decreases the accessibility of these sites to most citizens (Fig. 5). CRMC has noted that designation of ROW is sometimes followed by the posting of no parking signs, likely in response to local complaints (K. Cute, personal communication). Save The Bay recommends that this issue be studied and investigated further, including working with local towns to address the need for increased parking at ROW and incorporating this in to local comprehensive planning efforts. Save The Bay has seen success with the addition of bike racks adjacent to ROWs in New Shoreham, and would recommend this as a consideration where the addition of parking is not feasible.

We observed litter at more than a third of the ROW; fishing debris accounted for about half of this (Table 1). Only 32 ROW had trash receptacles and 11 had recycling receptacles (Fig. 6). Litter is a concern for immediate quality of the access point and for the local water quality of the accessible water. Stormwater can carry litter and associated pollutants into the water during heavy rains. While supplying trash receptacles places a resource burden on the state or town, and presents an opportunity for abuse by those looking for free trash disposal, Save The Bay recommends that towns consider using fixed and locked receptacle having restricted-sized openings, or engage with CRMC's very successful *Adopt an Access* program. Save The Bay recommends that outreach efforts to towns, community groups, and residents should be undertaken to recruit interested parties to adopt ROW and assist CRMC and towns with keeping ROW clean and accessible to the public.

Coastal flooding, coastal erosion, and stormwater erosion were each observed at about a third of the ROW (Table 1). With the effects of climate change becoming more apparent along our

coastline, we expected to find signs of coastal flooding and erosions due to rising sea levels and more frequent coastal storms, and signs of increased stormwater erosion from an increase in heavy rain events. Based upon sea level rise predictions for the Rhode Island coastline, it is imperative that the state and local partners actively research and advocate for the designation of new ROW along our shoreline. Given these sea level rise predications, it is likely that many of the lower lying ROW may be submerged at the end of the century. Moving forward, CRMC and partners may need to address access issues caused by coastal flooding, erosion, and sea level rise.

Save The Bay, CRMC, and partners will use the data that was collected through this project to prioritize ROW in need of further research into rectifying deficiencies in access, parking, signage, and other intended functions. These data will provide Save The Bay with information to support future efforts, including (1) the development of a correct and updated list of specific delinquent sites that need Save The Bay's attention on an advocacy, legal, or legislative front; (2) support the ROW adoption program with CRMC where volunteers will monitor conditions and, if necessary, perform regular shoreline cleanups at sites throughout Narragansett Bay and the coast; and (3) provide user-friendly information and maps, in the form of an app or web-based, mobile-friendly interface, to the public, documenting where individuals can easily and safely access and recreate on the Bay. Save The Bay has additionally researched three possible new ROW from a CRMC list of potential access sites. Senior Save The Bay staff oversaw a group of legal interns from the Roger Williams University School of Law to analyze and compile reports on potential ROW. Two completed reports were submitted to CRMC for review.

Save The Bay will continue to develop and utilize this dataset beyond the scope of this Project. We are currently working with the Natural Resources Science Department at the University of Rhode Island to prepare the corrected dataset for publication on the Rhode Island Geographic Information System (RIGIS). This work will include developing properly formatted metadata, linking geospatial and condition data to ROW photos, and selecting data most appropriate for public consumption. We anticipate publishing the data in fall of 2016.

References

- CRMC. 2011. Urban Coastal Greenways Policy for the Metro Bay Region Cranston, East Providence, Pawtucket, and Providence; an Amendment to the Providence Harbor Special Area Management Plan. Available:
http://www.crmc.ri.gov/regulations/SAMP_MB_UGC.pdf. 57 pp.
- CRMC. 2012. The State of Rhode Island Coastal Resource Management Plan as Amended. Available: <http://www.crmc.ri.gov/regulations/RICRMP.pdf>. 270 pp.
- CRMC. 2016. Designation of public rights-of-way to the tidal areas of the State; progress report for July 2015 through June 2016. Available:
http://www.crmc.ri.gov/publicaccess/ROW_RI_2016.pdf. 28 pp.

Tables

Table 1: Summaries of observed and estimated conditions and amenities at 216 state-designated ROW to the coast in Rhode Island during summer 2015.

Amenities	%	How Active	%	Activity / Value	% Supporting
Parking	50	Recent Use	68	Scenic View	88
Handicap Access	19	Recent Maintenance	44	Water Access	49
Trash Recepticles	14			Fishing	35
Recycling Recepticles	5	Obstructions	%	Hiking / Walking	31
		Vegetation Overgrowth	29	Swimming	23
Apparent Issues	%	Property Encroachment	22	Canoeing / Kayaking	23
Coastal Flooding	41	Trees or Shrubs	19	Tidepooling	17
Litter	37	Fence	6	Boat Ramp	12
Stormwater Erosion	34	Locked Gate	4	Shellfishing	11
Coastal Erosion	32	Rocks or Boulders	1	Surfing	8
Vegetation Clearing	28	Overall	42		
Fishing Debris	17	Purposeful	9		

Table 2: Summary of evident obstructions at 216 state-designated ROW to the coast in Rhode Island observed during summer 2015; %RFG means the percent of obstructions that are from rocks, boulders, fences, or gates (i.e. purposeful obstructions); %Veg means the percentage of ROW at least partially obstructed by vegetation overgrowth.

Town	# ROWs	Obstructions	% Obs	Rocks, Fence, Gate	% RFG	Vegetation	% Veg
Warwick	34	13	38	4	12	8	24
Bristol	28	10	36	0	0	8	29
Newport	24	10	42	2	8	7	29
Jamestown	13	9	69	1	8	7	54
Portsmouth	17	9	53	0	0	6	35
Narragansett	13	7	54	0	0	8	62
Westerly	11	7	64	5	45	4	36
East Providence	13	6	46	2	15	2	15
Warren	9	5	56	1	11	4	44
Middletown	10	4	40	2	20	3	30
South Kingstown	4	3	75	3	75	1	25
East Greenwich	6	2	33	0	0	1	17
Charlestown	2	1	50	0	0	1	50
Cranston	3	1	33	0	0	0	0
North Kingstown	3	1	33	0	0	0	0
Pawtucket	1	1	100	0	0	1	100
Providence	3	1	33	0	0	1	33
Tiverton	7	1	14	0	0	1	14
Barrington	2	0	0	0	0	0	0
Little Compton	6	0	0	0	0	0	0
New Shoreham	7	0	0	0	0	0	0
Total	216	91	42	20	9	63	29

Table 3. Number and percentage of ROW per town lacking evident parking during the summer of 2015 among 216 state designated ROW in Rhode Island.

Town	Total ROWs	ROWs without Parking	% without Parking
Bristol	28	19	68
Warwick	34	17	50
Newport	24	12	50
Westerly	11	10	91
Warren	9	9	100
Narragansett	13	9	69
Middletown	10	6	60
Jamestown	13	5	38
South Kingstown	4	4	100
North Kingstown	3	3	100
East Greenwich	6	3	50
Portsmouth	17	3	18
Cranston	3	2	67
Barrington	2	1	50
Charlestown	2	1	50
Providence	3	1	33
Tiverton	7	1	14
East Providence	13	1	8
New Shoreham	7	0	0
Little Compton	6	0	0
Pawtucket	1	0	0
Total	216	107	50

Table 4. Number of ROW per town with posted signage among 216 state designated ROW in Rhode Island.

Town	# of ROW	# Signs Posted	Signs Needed
Barrington	2	1	1
Bristol	28	9	19
Charlestown	2	1	1
Cranston	3	2	1
East Greenwich	6	4	2
East Providence	13	0	13
Jamestown	13	1	12
Little Compton	6	2	4
Middletown	10	6	4
Narragansett	13	10	3
New Shoreham	7	3	4
Newport	24	20	4
North Kingstown	3	0	3
Pawtucket	1	0	1
Portsmouth	17	14	3
Providence	3	1	2
South Kingstown	4	1	3
Tiverton	7	1	6
Warren	9	1	8
Warwick	34	11	23
Westerly	11	5	6
Total	216	93	123

Figures



Figure 1. An unmaintained and inaccessible state-designated ROW in Portsmouth, RI



Figure 2. A state-designated ROW in Portsmouth, RI with apparent property encroachment



Figure 3. A gate and warning signs discouraging access to three state-designated ROW in South Kingstown, RI



Figure 4. A clearly marked and well-maintained ROW on Block Island with ample parking



Figure 5. A state-designated ROW in Jamestown, RI with parking clearly restricted by the town



Figure 6. A well-used, clearly marked ROW in Narragansett, RI with trash and recycling receptacles and parking, but partly overgrown with vegetation

Appendix 1: Field Datasheet

Organization _____ Name(s) of surveyor(s) _____

Phone Number _____ Date _____ Time _____

Shoreline name _____ City/Town _____ County _____

CRMC ROW Designation # _____ Town ROW Designation # _____

Adopting group (if applicable) _____

Is the access point visible? _____ GPS Coordinates at ROW (decimal degrees) _____

- Yes No
- Length of ROW (feet)
 - 0 2-5 5-10 10-20 >20
- Width of ROW – greatest (feet)
 - 0 2-5 5-10 10-20 >20
- Width of ROW – least (feet)
 - 0 2-5 5-10 10-20 >20

- Obstructions:
 - Rocks/boulders Yes No
 - Trees/bushes Yes No
 - Fence Yes No
 - Locked gate Yes No
 - Vegetation overgrowth Yes No
 - Other _____ No

Notes: _____

Does it seem like neighboring properties are encroaching on the ROW? (Property encroachment)

- Yes No

Does it seem like the access point has been used recently?

- Yes No

Does it seem like the access point has been maintained recently?

- Yes No

Evidence of litter

- Yes No

Evidence of fishing debris

- Yes No

Evidence of vegetation clearing/pruning/mowing

- Yes No

Is there parking available?

- Yes No

If yes how many spaces are available?

- 1-5 6-10 10 +

Is it handicapped accessible?

- Yes No

Are there trash receptacles available?

- Yes No

Are there recycling receptacles available?

- Yes No

Is there evidence of stormwater erosion on the ROW pathway?

- Yes No

Is there evidence of coastal erosion of the ROW pathway near the water?

- Yes No

Is there evidence of the pathway getting flooded during high tide/storm events? (Wrack Line)

- Yes No

Photo number/ID _____ Des#-(S,B,E,L,R)-YYYYMMDD
Sign _____

No Sign Posted

Beginning	End
Left	Right

Potential Uses: Check all that apply

- Scenic view
- Water access
- Swimming
- Fishing
- Shellfishing
- Tidepooling
- Surfing
- Canoe/kayak launch
- Boat Ramp
- Hiking/walking
- Other _____

Appendix 2: Quality Assurance Summary Report

Championing the Public's Right to Access the Shore

EPA Grant Number: CE96184201

June 27, 2016

Save The Bay Inc.
100 Save The Bay Drive
Providence, RI 02905
P: 401-272-3540
F: 401-273-7153
www.savebay.org

All aspects of this Project were conducted according to the Quality Assurance Project Plan (QAPP) identified by the above-referenced title and grant number. Senior Save The Bay staff oversaw and approved all aspects of Project design, technician training, field work, data collection, upload and analysis, data interpretation, and reporting. Save The Bay staff worked to ensure that QAPP protocols were followed throughout the Project. This Quality Assurance Summary Report outlines the protocols as conducted according to the referenced QAPP.

Save The Bay staff and trained technicians conducted all aspects of field work, data collection, and data upload. Quality Assurance was conducted for specific tasks of the Project as follows:

Task 1 – Finalize the geospatial component of a GIS dataset of State-designated rights of ways:

This portion of the Project was conducted strictly in accordance with the QAPP. Save The Bay located each ROW using existing coordinates, georectified aerial photography, street address information, existing ROW documentation, municipal plat maps, and other available information; locations of the ROW were verified and rectified with existing information by senior save the bay staff. A single GPS point for the ROW entrance (street side) was recorded using a modern smartphone with the Google Earth function; this was rectified against existing GPS data in the dataset by Save The Bay senior staff. The widest point and the narrowest point of the ROW were estimated in the field; the points were measured from any obstruction limiting foot access (standing upright) on either side of the ROW and the length of the ROW was roughly estimated using aerial photointerpretation and the measurement function on Google Earth.

Task 2 – Develop datasheets for documenting access information during site visits:

Save The Bay developed field datasheets for the standardized collection of data during ROW site visits according to the QAPP; see Appendix 1 of the Final Report.

Task 3 – Oversee and conduct site visits to the reported 222 currently designated CRMC rights of ways:

Save The Bay senior staff organized and implemented training session for field staff according to the QAPP. The training session covered SOPs for field methods and data collection. Data were verified to be collected according to the QAPP. Field datasheets were periodically reviewed by Save The Bay senior staff to ensure that data were being recorded completely and interpretations of the metrics were correct. Data that were deemed to be incorrectly recorded or interpreted were rectified by a combination of photograph interpretation and field staff interview. Only corrected data were used in the final dataset. Only 216 of the reported 222 ROW were found to exist. The error was corrected in the dataset and all subsequent correspondence, including this report.

Task 4 – Upload data into the GIS system:

Save The Bay senior staff oversaw the uploading of data into a spreadsheet program that appends directly to the GIS dataset. The spreadsheet was periodically reviewed by Save The Bay senior staff to ensure that data were being uploaded completely and interpretations of the metrics were correct. Data that were deemed to be incorrectly uploaded or interpreted were corrected through photograph interpretation and field staff interview. Only corrected data were used in the final dataset.

Task 5 – Analyze and synthesize the data on the 222 designated rights of ways:

Save The Bay senior staff compiled, reviewed, and analyzed the data collected in this Project in accordance with the QAPP. Final data were analyzed using spreadsheet software (Microsoft Excel) and pivot tables to determine trends shown in the Final Report. These trends will inform future advocacy work beyond the scope of the Project. Outcomes were peer reviewed by other senior staff to assure validity.

Task 6 – Coordinate with CRMC to review data:

Save The Bay senior staff and project managers met with CRMC staff at regular intervals to review the project and data according to the QAPP. No adjustments to the QAPP were necessary during the Project period.

Task 5 – Identify sites in need of legal attention, advocacy, or volunteer work to restore full public access:

Save The Bay senior staff used compiled data collected in this Project to identify sites for further review and research, as discussed in the Final Report. Save The Bay notified CRMC of at least one non-compliant designated ROW by the time of this reporting.

Task 6 – Identify opportunities to assist CRMC in the adoption of new public rights of way:

During the Project period, Save The Bay senior staff oversaw legal interns from Roger Williams University School of Law, who submitted reports analyzing potential ROW for CRMC review according to the QAPP. Those reports were submitted directly to CRMC and are available through CRMC public information request.