

AGENDA PACKET

02/05/20 REGULAR MEETING



BARNSTABLE COUNTY

COMMISSIONERS
RONALD R. BEATY, Barnstable
RONALD BERGSTROM, Chatham
MARY PAT FLYNN, Falmouth

THE REGIONAL GOVERNMENT OF CAPE COD

Board of Regional Commissioners

REGULAR MEETING AGENDA



DATE: February 5, 2020

TIME: 10:00 A.M.

PLACE: Commissioners' Conference Room
Superior Courthouse
3195 Main Street
Barnstable, MA 02630

1. Call to Order
2. Pledge of Allegiance
3. Moment of Silence
4. Public Comment
5. Approval of Minutes
 - a. Regular Meeting of January 29, 2020
6. General Business
 - a. Report by Josh Reitsma, Fisheries & Aquaculture Specialist, and Harriet Booth, Marine Resource Specialist, Cape Cod Cooperative Extension on travel to the Milford Aquaculture Seminar, hosted by the National Oceanic and Atmospheric Administration's Milford Aquaculture Laboratory, Northeast Fisheries Science Center in Shelton, Connecticut from January 13, 2020 through January 15, 2020
 - b. Proposed Ordinance 20-__, Adopting an Operating Budget for the Dredge Enterprise Fund, in the amount of \$1,849,437.00 for the Fiscal Year 2021, beginning July 1, 2020 and ending June 30, 2021

Note: For all items under General Business, the Board may take official action including votes

7. New Business – Other business not reasonably anticipated by the Chair
8. Commissioners' Actions
 - a. Authorizing the execution of an amendment to an agreement, executed September 12, 2018, with Restore America's Estuaries, for a Southeast New England Program (SNEP) Watershed Grant to the Cape Cod Commission, in the amount of \$399,998.00 for the period of September 1, 2018 through September 30, 2020, extending the period of performance through March 31, 2021
 - b. Authorizing the execution of an amendment to a sub-award agreement, executed October 10, 2018, through the Cape Cod Commission, with the Association to Preserve Cape Cod, under the Cape Cod Commission's SNEP Watershed Grant project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" in the amount of \$99,488.00, for a period from October 1, 2018 through July 31, 2020, extending the period of performance through February 28, 2021
 - c. Authorizing the execution of an amendment to a sub-award agreement, executed October 10, 2018, through the Cape Cod Commission, with Waquoit Bay Reserve Foundation, under the Cape Cod Commission's SNEP Watershed Grant project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" in the amount of \$42,684.00, for a period from October 1, 2018 through July 31, 2020, extending the period of performance through February 28, 2021
 - d. Authorizing the execution of an amendment to a sub-award agreement, executed October 10, 2018, through the Cape Cod Commission, with Woods Hole Oceanographic Institution, under the Cape Cod Commission's SNEP Watershed Grant project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" in the amount of \$107,289.00, for a period from October 1, 2018 through July 31, 2020, extending the period of performance through February 28, 2021
 - e. Authorizing the award of contracts for the leasing and maintenance of portable toilets to Nauset Disposal for the Towns of Brewster, Eastham and Yarmouth
 - f. Authorizing the execution of a contract with American Fire Training Systems, for a Fire Training Academy Prop (Mobile), for an amount not to exceed \$374,000.00, for a period from January 22, 2020 through May 1, 2020

- g. Authorizing the discharge of a mortgage to Barnstable County, by and through the Cape Cod Commission, and through an assignment of mortgage by the Housing Assistance Corporation, dated May 11, 1995 and recorded at the Barnstable County Registry of Deeds at Book 9703 Page 60
- h. Authorizing the execution of Certificates for Dissolving Septic Betterments

9. Commissioners' Reports

10. County Administrator and Staff Reports

11. Adjournment

Reasonable accommodations for people with disabilities are available upon request. Please contact Justyna Marczak, Barnstable County ADA Coordinator at jmarczak@barnstablecounty.org or call 508-375-6646 at least 24 hours in advance of the meeting. The County Commissioners' meeting may be viewed in real time at <https://www.youtube.com/user/BarnstableCounty>, <https://www.barnstablecounty.org/>



DOCUMENT LIST

Agenda Item 5a:

- Draft Minutes of the Board of Regional Commissioners Regular Meeting of January 29, 2020

Agenda Item 6b:

- Amendment to an agreement, executed September 12, 2018, with Restore America's Estuaries, for a Southeast New England Program (SNEP) Watershed Grant to the Cape Cod Commission, in the amount of \$399,998.00 for the period of September 1, 2018 through September 30, 2020, extending the period of performance through March 31, 2021, as presented, 2nd by Commissioner Flynn, approved 0-0-0

Agenda Item 8a:

- Amendment to an agreement, executed September 12, 2018, with Restore America's Estuaries, for a Southeast New England Program (SNEP) Watershed Grant to the Cape Cod Commission, in the amount of \$399,998.00 for the period of September 1, 2018 through September 30, 2020, extending the period of performance through March 31, 2021, as presented, 2nd by Commissioner Flynn, approved 0-0-0
- Agreement, executed September 12, 2018, with Restore America's Estuaries, for a Southeast New England Program (SNEP) Watershed Grant to the Cape Cod Commission, in the amount of \$399,998.00 for the period of September 1, 2018 through September 30, 2020, extending the period of performance through March 31, 2021, as presented, 2nd by Commissioner Flynn, approved 0-0-0

Agenda Item 8b:

- Amendment to a sub-award agreement, executed October 10, 2018, through the Cape Cod Commission, with the Association to Preserve Cape Cod, under the Cape Cod Commission's SNEP Watershed Grant project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" in the amount of \$99,488.00, for a period from October 1, 2018 through July 31, 2020, extending the period of performance through February 28, 2021, as presented, 2nd by Commissioner Flynn, approved 0-0-0
- Sub-award agreement, executed October 10, 2018, through the Cape Cod Commission, with the Association to Preserve Cape Cod, under the Cape Cod Commission's SNEP Watershed Grant project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" in the amount of \$99,488.00, for a period from October 1, 2018 through July 31, 2020, extending the period of performance through February 28, 2021, as presented, 2nd by Commissioner Flynn, approved 0-0-0

Agenda Item 8c:

- Amendment to a sub-award agreement, executed October 10, 2018, through the Cape Cod Commission, with Waquoit Bay Reserve Foundation, under the Cape Cod Commission's SNEP Watershed Grant project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" in the amount of \$42,684.00, for a period from October 1, 2018 through July 31, 2020, extending the period of performance through February 28, 2021, as presented, 2nd by Commissioner Flynn, approved 0-0-0
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Agenda Item 8d:

- Amendment to a sub-award agreement, executed October 10, 2018, through the Cape Cod Commission, with Woods Hole Oceanographic Institution, under the Cape Cod Commission's SNEP Watershed Grant project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" in the amount of \$107,289.00, for a period from October 1, 2018 through July 31, 2020, extending the period of performance through February 28, 2021, as presented, 2nd by Commissioner Flynn, approved 0-0-0
- Sub-award agreement, executed October 10, 2018, through the Cape Cod Commission, with Woods Hole Oceanographic Institution, under the Cape Cod Commission's SNEP Watershed Grant project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" in the amount of \$107,289.00, for a period from October 1, 2018 through July 31, 2020, extending the period of performance through February 28, 2021, as presented, 2nd by Commissioner Flynn, approved 0-0-0

Agenda Item 8e:

- Memorandum dated February 3, 2020 to the County Commissioners from Jennifer Frates, Chief Procurement Officer, regarding "Notice of Bid Award - #7899 Leasing & Maintenance of Portable Toilets"

Agenda Item 8f:

- Contract with American Fire Training Systems, for a Fire Training Academy Prop (Mobile), for an amount not to exceed \$374,000.00, for a period from January 22, 2020 through May 1, 2020, as presented, 2nd by Commissioner Flynn, approved 0-0-0

- Memorandum dated January 15, 2020 to the County Commissioners from Jennifer Frates, Chief Procurement Officer, regarding "Notice of Bid Award - #7897 Fire Training Academy Prop (Mobile)"
- Award of a contract to American Fire Training Systems, for a Fire Training Academy Prop (Mobile), for an amount not to exceed \$374,000.00

Agenda Item 8g:

- Discharge of a mortgage to Barnstable County, by and through the Cape Cod Commission, and through an assignment of mortgage by the Housing Assistance Corporation, dated May 11, 1995 and recorded at the Barnstable County Registry of Deeds at Book 9703 Page 60, as presented, 2nd by Commissioner Flynn, approved 0-0-0
- Memorandum to Jack Yunits, Jr., County Administrator / County Commissioners, from Renie Hamman, HOME Program Manager, regarding "Discharge of HOME Mortgage, 20 Short Way, West Yarmouth / Brayton, Rosamund, dated January 31, 2020

Agenda Item 8h:

- Memorandum dated January 6, 2020 to the Board of Regional Commissioners from Community Septic Loan Program regarding Certificates for Dissolving Betterments

AGENDA ITEM 5a

Regular Meeting of January 29, 2020

COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss.

At a regular meeting of the Barnstable County Board of Regional Commissioners, held in the Commissioners' Conference Room, in the Superior Courthouse, on the twenty-ninth day of January, A.D. 2020

Barnstable County Commissioners:

Ronald R. Beaty Present

Ronald Bergstrom Present

Mary Pat Flynn Present

Staff Present:

Jack Yunits County Administrator

Steve Tebo Assistant County Administrator

Owen Fletcher Executive Assistant, Administration

Beth Albert Director, Human Services

Daniel Gray Continuum of Care Program Manager, Human Services

Renie Hamman HOME Program Manager, Human Services

Bill Traverse Director, Information Technology

Ian Roberts Technical Support Specialist, Information Technology

1. Call to Order

Chairman Bergstrom called the meeting to order at 10:00 A.M.

2. Pledge of Allegiance

3. Moment of Silence

Chairman Bergstrom asked those present at the meeting to observe a moment of silence to support all members of the United States Armed Forces serving at home and abroad.

4. Public Comment

No members of the public offered comment.

5. Approval of Minutes

a. Regular Meeting of January 22, 2020

Motion by Commissioner Beaty to approve the minutes of the Board of Regional Commissioners' Regular Meeting of January 22, 2020 as presented, 2nd by Commissioner Flynn, approved 3-0-0

6. General Business

a. Presentation regarding the Cape and Islands Regional Network on Homelessness

Ms. Albert and Mr. Gray presented to the Board. Ms. Albert detailed the reasoning behind the County providing services to the community through the Network. She noted that the County providing those services improves coordination between stakeholders, and meets requirements to receive federal grant funding. Ms. Albert highlighted current applications to fund several grants.

Mr. Gray explained the County's process for identifying homeless populations pursuant to federal requirements. The Board had a lengthy discussion regarding methods of working with community stakeholders to identify and serve the County's homeless population.

b. Proposed Ordinance 20-__, To make appropriations for Barnstable County's operating budget for the Fiscal Year 2021, in the amount of \$20,594,545.00, including the operations of the County Assembly, Executive branch, County agencies, boards, commissions, departments and institutions and the maintenance of certain County functions; for interest, reserve funds and serial bond requirements of the County

Motion by Commissioner Beaty to authorize the introduction of Proposed Ordinance 20-__ (to be numbered), To make appropriations for Barnstable County's operating budget for the Fiscal Year 2021, in the amount of \$20,594,545.00, including the operations of the County Assembly, Executive branch, County agencies, boards, commissions, departments and institutions and the maintenance of certain County functions; for interest, reserve funds and serial bond requirements of the County, at the next meeting of the County Assembly of Delegates, pursuant to Sections 2- 8(e) and 5 - 4(a) of the Barnstable County Home Rule Charter, as presented, 2nd by Commissioner Flynn, approved 2-1-0 (YES: Bergstrom, Flynn. NO: Beaty)

Ms. Braccia and Mr. Yunits presented to the Board on this item. They noted the final approximate budget increase from Fiscal Year 2020 to the Board's proposed budget for Fiscal Year 2021 was 2%. The Board discussed the process the Assembly of Delegates would use to hear the budget. Mr. Yunits also spoke regarding the County's work with consultant retained for the dredge program to plan for the program's costs and operations.

c. Proposed Ordinance 20-__, Adopting an Operating Budget for the Cape Cod Commission, in the amount of \$5,719,095, for the Fiscal Year 2020, beginning July 1, 2020 and ending June 30, 2021

Motion by Commissioner Beaty to authorize the introduction of Proposed Ordinance 20-__ (to be numbered), Adopting an Operating Budget for the Cape Cod Commission, in the amount of \$5,719,095, for the Fiscal Year 2020, beginning July 1, 2020 and ending June 30, 2021, at the next meeting of the County Assembly of Delegates, pursuant to Sections 2- 8(e) and 5 - 4(a) of the Barnstable County Home Rule Charter, as presented, 2nd by Commissioner Flynn, approved 2-1-0 (YES: Bergstrom, Flynn. NO: Beaty)

Mr. Bergstrom noted that Kristy Senatori, Executive Director of the Cape Commission, previously presented on this item to the Board and no Commissioners expressed issues with it.

d. Proposed Ordinance 20-__, Adopting an Operating Budget for the Dredge Enterprise Fund, in the amount of \$1,849,437.00 for the Fiscal Year 2021, beginning July 1, 2020 and ending June 30, 2021

The Board postponed the hearing of this item until it could hear more information from Administration regarding the status of the County Dredge

7. New Business – Other business not reasonably anticipated by the Chair

There was no new business at this meeting.

8. Commissioners' Actions

- a. Authorizing the appointment of Frances McClennen to the Barnstable County HOME Consortium Advisory Council, as the Town of Orleans Representative, for a three-year term from February 1, 2020 through**

Motion by Commissioner Beaty to authorize the appointment of Frances McClennen to the Barnstable County HOME Consortium Advisory Council, as the Town of Orleans Representative, for a three-year term from February 1, 2020 through January 31, 2023, as presented, 2nd by Commissioner Flynn, approved 3-0-0

Ms. Hamman answered questions from the Board regarding the staggered terms of body's members.

- b. Authorizing the transfer of funds, in the amount of \$37,100.00, in the County Information Technology Department Budget, to cover Fiscal Year 2020 costs**

Motion by Commissioner Beaty to authorize the transfer of funds, in the amount of \$37,100.00, in the County Information Technology Department Budget, to cover Fiscal Year 2020 costs, as presented, 2nd by Commissioner Flynn, approved 3-0-0

Mr. Traverse explained the need for the transfers and clarified that the transfers were solely within the department's budget.

- c. Authorizing the submission of a letter supporting a request to the United States Coast Guard to reconsider the permanent disestablishment of the Chatham Beach Lighted Whistle Buoy "C" (LLNR 520)**

Motion by Commissioner Beaty to authorize the submission of a letter supporting a request to the United States Coast Guard to reconsider the permanent disestablishment of the Chatham Beach Lighted Whistle Buoy "C" (LLNR 520), as presented, 2nd by Commissioner Flynn, approved 3-0-0

- d. Authorizing the approval of a grounds request by the Cape Cod Doxie Day Committee to utilize the Barnstable County Superior Courthouse for an event on September 26, 2020**

Motion by Commissioner Beaty to authorize the approval of a grounds request by the Cape Cod Doxie Day Committee to utilize the Barnstable County Superior Courthouse Complex for an event on September 26, 2020, subject to the execution of a Memorandum of Understanding between the County Facilities Department and the Committee, as presented, 2nd by Commissioner Flynn, approved 3-0-0

Mr. Yunits asked that Board approval of this item be subject to a future memorandum of understanding before the event between the Committee and the Counties' Facilities Department.

- e. Authorizing the execution of an amendment to an agreement, executed August 26, 2019, for a grant from the Massachusetts Executive Office of Health and Human Services, through the County Human Services Department, to the Housing Assistance Corporation, in the amount of \$38,504.00, to provide Homeless Youth Program services, for a period from July 1 2019 through June 30 2020, increasing funding by \$51,405.00 for Program Manager position costs**

Motion by Commissioner Beaty to authorize to the execution of an amendment to an agreement, executed August 26, 2019, for a grant from the Massachusetts Executive Office of Health and Human Services, through the County Human Services Department, to the Housing Assistance Corporation, in the amount of \$38,504.00, to provide Homeless Youth Program services, for a period from July 1 2019 through June 30 2020, increasing funding by \$51,405.00 for Program Manager position costs, as presented, 2nd by Commissioner Flynn, approved 3-0-0

Ms. Albert answered questions from the Board on the funding of the grant.

- f. Authorizing the discharge of a mortgage by Alicia Mitchell, to Barnstable County, acting by and through the Cape Cod Commission, dated February 27, 2008, and recorded with the Barnstable County Land Court as**

Motion by Commissioner Beaty to authorize the discharge of a mortgage by Alicia Mitchell, to Barnstable County, acting by and through the Cape Cod Commission, dated February 27, 2008, and recorded with the Barnstable County Land Court as Document No. 1083818, as presented, 2nd by

- g. Authorizing the execution of Certificates for Dissolving Septic Betterments**

The Board did not receive any certificates for the Chair to execute at this meeting.

9. Commissioners' Reports

Chairman Bergstrom spoke regarding a meeting that Mr. Yunits recently attended with members of the Cape Cod State Legislative Delegation as well as other members of the Massachusetts Legislature. He thanked them for their continued support for legislation critical to the County.

Commissioner Beaty spoke regarding his attendance at a Cape & Vineyard Electric Cooperative meeting as well as a Cape and Islands Workforce Board meeting.

10. County Administrator and Staff Reports

Mr. Yunits spoke regarding correspondence dated January 2, 2020 to Jack Yunits from Thomas J. Rooney, Superintendent of the Barnstable Fire District Water Department regarding the clean-up at the County Fire Rescue Academy. Mr. Yunits noted the letter was the first the County heard of some of the District's issues. Mr. Yunits, Mr. Tebo, and the Board engaged in a lengthy technical discussion regarding testing standards, sources of possible contamination from other entities, cleanup technologies, and costs.

11. Adjournment

Barnstable, ss. at 11:34 A.M. on this twenty-ninth day of January A.D. 2020, Commissioner Beaty made a motion to adjourn, 2nd by Commissioner Flynn, approved 3-0-0

List of Documents

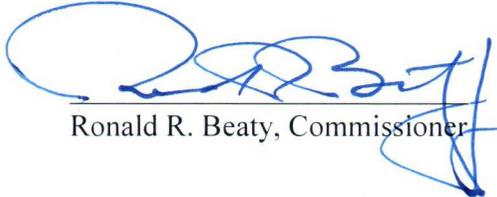
- Proposed Ordinance 20-__, To make appropriations for Barnstable County's operating budget for the Fiscal Year 2021, in the amount of \$20,594,545.00, including the operations of the County Assembly, Executive branch, County agencies, boards, commissions, departments and institutions and the maintenance of certain County functions; for interest, reserve funds and serial bond requirements of the County
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- Proposed Ordinance 20-__, Adopting an Operating Budget for the Cape Cod Commission, in the amount of \$5,719,095.00, for the Fiscal Year 2021, beginning July 1, 2020 and ending June 30, 2021
- Proposed Ordinance 20-__, Adopting an Operating Budget for the Dredge Enterprise Fund, in the amount of \$1,849,437.00 for the Fiscal Year 2021, beginning July 1, 2020 and ending June 30, 2021
- Letter to Renie Hamman, HOME Program Manager, Barnstable County Dept. of Human Services, dated January 24, 2020, from Lisa Shaw, Administrative Assistant to the Orleans Town Administrator
- Transfer Request Form dated January 21, 2020 submitted by the Information Technology Department
- Letter dated January 29, 2020 to Lieutenant Arthur Fooks, Waterways Management Division, Sector Southeastern New England, United States Coast Guard, regarding "Project No. 01-18-041, U.S. Coast Guard proposal to disestablish the Chatham Beach Lighted Whistle Buoy C (LLNR 520)" from the Barnstable County Board of Regional Commissioners
- Correspondence dated January 21, 2020 to Owen Fletcher, Executive Assistant, Barnstable County Administration, from Betsy Davis, Cape Cope Doxie Day Committee
- Proposal to Owen Fletcher, Executive Assistant from Eva Carbanaro and Betsy Davis with the subject "2020 Cape Cod Doxie Day" dated January 21, 2020

- Amendment to an agreement, executed August 26, 2019, for a grant from the Massachusetts Executive Office of Health and Human Services, through the County Human Services Department, to the Housing Assistance Corporation, in the amount of \$38,504.00, to provide Homeless Youth Program services, for a period from July 1 2019 through June 30 2020, increasing funding by \$51,405.00 for Program Manager position costs
- Agreement, executed August 26, 2019, for a grant from the Massachusetts Executive Office of Health and Human Services, through the County Human Services Department, to the Housing Assistance Corporation, in the amount of \$38,504.00, to provide Homeless Youth Program services, for a period from July 1 2019 through June 30 2020, increasing funding by \$51,405.00 for Program Manager position costs
- Discharge of a mortgage by Alicia Mitchell to Barnstable County, acting by and through the Cape Cod Commission, dated February 27, 2008 and recorded with the Barnstable Land Court Registry as Document Number 1083818

Approved, Board of Regional Commissioners


Ronald Bergstrom, Chair


Mary Pat Flynn, Vice-Chair


Ronald R. Beaty, Commissioner

A true copy, attest:

The foregoing records have been read and approved, February 5, 2020.

A true copy, attest:


Janice O'Connell, Regional Clerk



AGENDA ITEM 6b

Proposed Ordinance 20-__, Adopting an Operating Budget for the Dredge Enterprise Fund, in the amount of \$1,849,437.00 for the Fiscal Year 2021, beginning July 1, 2020 and ending June 30, 2021

BARNSTABLE COUNTY
In the Year Two Thousand and Twenty
Proposed Ordinance 20-___

Adopting an Operating Budget for the Dredge Enterprise Fund for the Fiscal Year 2021, beginning July 1, 2020 and ending June 30, 2021

The Cape Cod Regional Government, known as Barnstable County hereby ordains;

SECTION 1. A budget consisting of the appropriations listed in SECTION 2 below be adopted for the Fiscal Year July 1, 2020 through June 30, 2021.

SECTION 2. Appropriations for said budget are as follows:

COUNTY SERVICES

Dredge	\$1,849,437
Total County Services	\$1,849,437

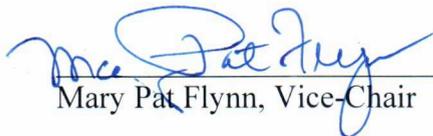
TOTAL FY 2021 BUDGET **\$1,849,437**

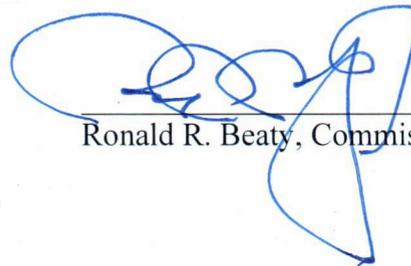
SECTION 3. No appropriation listed above may be exceeded without appropriate ordinance action to amend budget.

SECTION 4. This ordinance shall take effect July 1, 2020.

Approve by the Board of Regional Commissioners February , 2020


Ronald Bergstrom, Chair


Mary Pat Flynn, Vice-Chair


Ronald R. Beaty, Commissioner

COMMONWEALTH OF MASSACHUSETTS

BARNSTABLE, SS.

At a regular meeting of the Barnstable County Board of Regional Commissioners, in the Commissioners' Conference Room, in the Superior Courthouse, on the fifth day of February, A.D. 2020, motion by Commissioner Beaty to authorize the introduction of Proposed Ordinance 20-__ (to be numbered), Proposed Ordinance 20-__, Adopting an Operating Budget for the Dredge Enterprise Fund, in the amount of \$1,849,437.00 for the Fiscal Year 2021, beginning July 1, 2020 and ending June 30, 2021, at the next meeting of the County Assembly of Delegates, pursuant to Sections 2- 8(e) and 5 - 4(a) of the Barnstable County Home Rule Charter, as presented, 2nd by Commissioner Flynn, approved 2-1-0

Ronald Bergstrom, Chair: Y
Mary Pat Flynn, Vice-Chair: Y
Ronald R. Beaty, Commissioner: Y

A true copy, attest, February 5, 2020


Janice O'Connell, Regional Clerk



AGENDA ITEM 8a

Authorizing the execution of an amendment to an agreement, executed September 12, 2018, with Restore America's Estuaries, for a Southeast New England Program (SNEP) Watershed Grant to the Cape Cod Commission, in the amount of \$399,998.00 for the period of September 1, 2018 through September 30, 2020, extending the period of performance through March 31, 2021



2018 SNEP WATERSHED GRANTS

Amendment to Subrecipient Agreement *regarding* No-Cost Grant Extension

This constitutes an amendment to the agreement between Restore America’s Estuaries (RAE or the Recipient) and the Subrecipient identified below, regarding the responsibilities of each in their roles as Recipient and Subrecipient under the 2018 round of Southeast New England Program (SNEP) Watershed Grants, **EPA FAIN Grant #00A00370**, and its amendments and supplements.

No-Cost Extension

This amendment constitutes a no-cost extension of the subrecipient grant identified below. Under this extension, all work funded by the grant must be completed by **March 31, 2021**. Grant reporting shall be adjusted accordingly, as follows:

Report	Period Covered	Due Date
Progress #1	Aug. 1, 2018 – Dec. 31, 2018	Jan. 31, 2019
Progress #2	Jan. 1, 2019 – Jun. 30, 2019	Jul. 31, 2019
Progress #3	Jul. 1, 2019 – Dec. 31, 2019	Jan. 31, 2020
Progress #4	Jan. 1, 2020 – Jun. 30, 2020	Jul. 31, 2020
Progress #5	Jul. 1, 2020 – Dec. 31, 2020	Jan. 31, 2021
Final Report	Entire Project period (completion no later than Mar. 31, 2021)	60 days following completion of Project and no later than May 31, 2021.

Signatures

For Restore America's Estuaries

By: Jeff Benoit
Jeff Benoit, President & CEO

Date: 11-27-18

For Subrecipient

Contract #SNEPWG18-9-CCC _____

Subrecipient Organization: Cape Cod Commission (Barnstable County)

Signature: Ron Bergstrom, Mary Pat Flynn, Ron Beaty

Name & Title: Ron Bergstrom, Mary Pat Flynn, Ron Beaty
Barnstable County Commissioners

Date: 02/05/20

COMMONWEALTH OF MASSACHUSETTS

BARNSTABLE, SS.

At a regular meeting of the Barnstable County Board of Regional Commissioners, in the Commissioners' Conference Room, in the Superior Courthouse, on the fifth day of February, A.D. 2020, motion by Commissioner Beaty to authorize the execution of an amendment to an agreement, executed September 12, 2018, with Restore America's Estuaries, for a Southeast New England Program (SNEP) Watershed Grant to the Cape Cod Commission, in the amount of \$399,998.00 for the period of September 1, 2018 through September 30, 2020, extending the period of performance through March 31, 2021, as presented, 2nd by Commissioner Flynn, approved 0-0-0

Ronald Bergstrom, Chair: Y

Mary Pat Flynn, Vice-Chair: Y

Ronald R. Beaty, Commissioner: Y

A true copy, attest, February 5, 2020


Janice O'Connell, Regional Clerk





2018 SNEP WATERSHED GRANTS

Subrecipient Agreement Between Restore America's Estuaries and Cape Cod Commission (Barnstable County)

September 1, 2018 – September 30, 2020

Contract #SNEPWG18-9-CCC

Points of Contact

For Restore America's Estuaries:

Thomas Ardito
401-575-6109
tardito@estuaries.org
P.O. Box 476, Saunderstown, RI 02874

For Cape Cod Commission (Barnstable County):

Erin Perry, Special Projects Manager
3225 Main St., Barnstable, MA 02630
508-744-1236
eperry@capecodcommission.org

This constitutes an agreement between Restore America's Estuaries (RAE or the Recipient) and Cape Cod Commission (Barnstable County) (CCC or the Subrecipient), regarding the responsibilities of each in their roles as Recipient and Subrecipient under the 2018 round of Southeast New England Program (SNEP) Watershed Grants, **EPA FAIN Grant #00A00370**, and its amendments and supplements.

1. Contract Documents: Contract documents shall consist of this agreement and the following attachments, all of which are incorporated by reference into this agreement.

Attachment 1: Progress Report Requirements

Attachment 2: Final Report Requirements

Attachment 3: Project workplan and budget.

2. Services: CCC agrees to perform services as described in the scope and budget provided in Attachment 3 of this agreement (hereinafter the "Project.")

3. Contract Amount: Restore America's Estuaries agrees to make available \$399,998 for use by CCC for the contract period. CCC agrees to expend this money in conformity with the scope and budget in Attachment 3 (the Project.) CCC agrees to provide \$145,665 in Project-related matching costs as described in the budget. Matching funds must be from non-federal sources and must be expended during the period of this agreement.

4. Contract Period: This agreement covers the period **September 1, 2018 through September 30, 2020**. Work shall be completed and all reimbursable expenses incurred by **August 31, 2020**.

5. Alterations: Any alterations in the scope of the work performed shall be submitted by the Subrecipient in writing to RAE, and must be approved in advance in writing by RAE. Cumulative transfers of funds among approved direct cost categories that exceed 10% of the total award must be approved by RAE in writing in advance.

For Subrecipients with a current Negotiated Indirect Cost Rate Agreement (NICRA) on file with a federal agency, amended budgets must maintain consistency with the NICRA and the requirements of the 2018 SNEP Watershed Grants Request for Proposals (RFP). For these Subrecipients, indirect costs may not exceed 25% of the award amount.

For Subrecipients without a current NICRA, amended budgets must maintain consistency with the requirements of the 2018 SNEP Watershed Grants RFP, and may not exceed 10% of Modified Total Direct Costs as described in the RFP.

6. Progress & Final Reports: The Subrecipient agrees to submit progress reports twice yearly, and a final report upon completion of the Project, according to the following schedule:

Report	Period Covered	Due Date
Progress #1	Sep. 1, 2018 – Dec. 31, 2018	Jan. 31, 2019
Progress #2	Jan. 1, 2019 – Jun. 30, 2019	Jul. 31, 2019
Progress #3	Jul. 1, 2019 – Dec. 31, 2019	Jan. 31, 2020
Progress #4	Jan. 1, 2020 – Jun. 30, 2020	Jul. 31, 2020
Final Report	Entire Project period (completion no later than Aug. 31, 2020)	30 days following completion of Project and no later than Sept. 30, 2020.

Progress and final reports will reference the goals and objectives included in Attachment 3 and indicate the progress that has been made toward each during the reporting period. Subrecipient agrees to prepare and submit progress and final reports as described above and in Attachments 1 & 2. RAE reserves the right to withhold payments if the Subrecipient has not submitted the reports on schedule or if reports are unsatisfactory in meeting the requirements of this agreement. See Attachments 1 & 2 for more information on reporting formats.

Final reports should be geared toward an audience broader than simply RAE – in other words, it should be designed to communicate Project outcomes and results in a meaningful way to end users, stakeholders and others who may be able to learn from or take advantage of, or learn from Project outcomes and results. In all cases the final report should include an executive summary providing a brief but complete overview of Project outcomes and results, as specified in Attachment 1. In the event that the final report is intended for a technical audience, the executive summary should be written for a general audience and suitable for such purposes as reporting to funding agencies, elected officials, general-interest media outlets, etc. See Attachment 2 for more information.

Be sure to take plenty of high-resolution photographs throughout the course of the Project for use in progress reporting and, most importantly, the final report and executive summary. See Attachments 1 & 2 for more information.

7. Collaboration and Communication: SNEP Watershed Grants Program supports the Southeast New England Program (SNEP), an initiative of the U.S. Environmental Protection Agency (EPA), Region 1. The mission of SNEP is to:

Foster collaboration among regional partners across southeast New England’s coastal watersheds to protect and restore water quality, ecological health and diverse habitats by sharing knowledge and resources, promoting innovative approaches, and leveraging economic and environmental investments to meet the needs of current and future generations.

More information about SNEP is available at

<https://www.epa.gov/snecwrp>

Strong local and regional partnerships are essential in carrying out the mission of SNEP. Subrecipient agrees to participate in SNEP through at least two workshops or conferences over the course of the Project.

Subrecipient agrees to acknowledge SNEP and RAE in communications with the media, the public, and elected officials about the Project, including all publications, work products, academic and general publications, videos, signage, press releases, etc. Signs, printed reports and similar materials should include the SNEP logo where practicable. Subrecipients may download high-resolution digital files of the SNEP logo at www.snepgrants.org.

Example acknowledgement language:

[Project name] is supported by the Southeast New England Program (SNEP) Watershed Grants. SNEP Watershed Grants are funded by the U.S. Environmental Protection Agency (EPA) through a collaboration with Restore America's Estuaries (RAE). For more on SNEP Watershed Grants, see www.snepgrants.org

Subrecipient will coordinate with RAE on outreach plans, events, products, and media coverage associated with the Project, so that RAE may assist with the development of outreach communications and messaging. Subrecipient should provide drafts of any outreach plans to RAE staff for review and input. In particular, all press releases should be shared with RAE in draft at least one week in advance of release to allow RAE the opportunity to provide comments, and a quote if requested.

Subrecipient agrees to provide copies of final outreach products, website mentions, press materials, photos, etc. via the standard progress reports to RAE, or when available throughout the award period.

Subrecipient will provide RAE with high-resolution before, during, and post-implementation photos of the Project. Photos of Project sites prior to construction and during Project implementation should be submitted with progress reporting or as requested by RAE.

Subrecipient will notify RAE of all significant Project-related meetings and events (Project team meetings, public meetings, public hearings and presentations, press events, commencement of construction, ribbon-cuttings, etc.) at least one week prior to the event.

SNEP Watershed Grants are federal funds. RAE will assume, therefore, that all completed work products funded by SNEP are in the public domain, free of copyright or other intellectual property protections, unless covered by another applicable agreement or requirement (e.g., university intellectual property policies). In the event that Project work

products are subject to other intellectual property requirements, the Subrecipient shall inform RAE of such requirements ***prior to signature*** of this grant.

Project implementation sites (e.g., best management practice (BMP) installations, construction areas, etc.) must display, where appropriate and practicable, a permanent sign indicating that the Project has received funding through the U.S. Environmental Protection Agency, Southeast New England Program, and Restore America's Estuaries, and including the SNEP logo. Signage should also identify other contributing partners.

8. Permits & Compliance: Subrecipient will ensure that implementation of the Project meets all federal, state and local environmental laws and consistency requirements, including EPA Quality Assurance Project Plan (QAPP) requirements.

9. Invoices: Subrecipient will invoice RAE at least quarterly and at most monthly for reimbursable Project expenses. Generally, payment of approved expenses will be by reimbursement by RAE; however, the Subrecipient may request advance payment if necessary.

In the event that advance funds are needed, requests should be made at least one month prior to the anticipated need for the funds.

Invoices must follow the following format:

- The invoice must be on organization letterhead.
- Reference the contract number.
- Include date of invoice and period covered.
- List the total amount of expenses and match incurred during the invoice period by approved grant budget categories, as contained in the line item budget in Attachment 3.
- Indicate the amount of cumulative expenses and match from the beginning of the budget period and the balance still available. This information should also be listed by approved grant budget categories, as contained in the line item budget in Attachment 3.
- Include a general description of work performed or costs incurred.
- List the Project task that the requested amount applies to. If the requested remittance amount applies to two or more Project tasks, the invoice must list the amount that will be applied to each.
- Cash and in-kind matching funds should be listed separately, and the source of all match identified.
- Include organization name, mailing address for payment, and any cost codes that should be included on the check.
- Invoices must be signed by an authorized representative of the organization.

Submit invoices in PDF format to:

snepgrants@estuaries.org

Note: Variances among approved direct cost categories that cumulatively exceed 10% of the total award must be approved by RAE in advance in writing.

10. Financial Records: Subrecipient agrees to maintain accurate records of all costs incurred in the performance of this work, including matching funds, and agrees to allow Restore America’s Estuaries, EPA, and their duly authorized representatives reasonable access to their records to verify the validity of expenses reimbursed under this agreement. Subrecipient agrees to maintain financial records, supporting documents and other records pertaining to this agreement for a period of three (3) years from the termination date of this agreement.

To comply with federal regulations, Subrecipient agrees to maintain a financial management system that provides accurate, current and complete disclosure of the financial status of the subaward. This means the financial system must be capable of generating regular financial status reports which indicate the dollar amount allocated for the award (including any budget revisions), the amount obligated, and the amount expended for each activity. The system must permit the comparison of actual expenditures and revenues against budgeted amounts.

Accounting records must be supported by source documentation. Invoices, bills of lading, purchase vouchers, payrolls and the like must be secured and retained for three (3) years in order to show for what purpose funds were spent. Payments should not be made without invoices and vouchers physically in hand. All vouchers and invoices should be on vendors' letterheads.

All employees paid in whole or in part from funds provided under this agreement must prepare a time sheet indicating the hours worked for each pay period. Personnel activity reports (i.e. timesheets) reflect an after-the-fact determination of the actual activity of each employee charging time to the agreement and must reflect all time spent by an employee and be signed by the employee or a supervisor. “Timesheets” are required only for those employees charging time to the Project, and then must reflect all time spent by the employee.

Subrecipient should keep records, based on these time sheets and the hourly payroll costs for each employee, indicating the distribution of payroll charges.

Subrecipient must maintain in its records documentation of non-federal Project-related matching costs in the amount specified in the budget under Attachment 3. Subrecipient agrees to adhere to federal rules and guidelines governing documentation and acceptability of Project-related matching costs.

Matching Contributions, whether in the form of cash, goods and services, or property, must be:

- 1) Non-federal in nature (Federally appropriated or managed funds are ineligible.);
- 2) Utilized for work in support of the Project;
- 3) Expended within the timeframe of this contract; and,

4) Voluntary in nature (Funds presented for fulfillment of mitigation, restitution, or other permit or court-ordered settlements are not eligible.). Subrecipients must document and maintain all records of matching contributions.

11. Audits: RAE reserves the right to audit some or all of the Project costs, expenses, payments, etc., either formally or informally, as the Project proceeds and/or upon completion.

In the event that the Subrecipient's total expenditures under federal awards exceed \$750,000 in a fiscal year, an audit meeting the requirements of 2 CFR 200 is required. It is the Subrecipient's responsibility to contract for this audit and to submit a copy to RAE no later than thirteen months after the close of the fiscal year to which the audit pertains, for fiscal years that fall in whole or in part within the period of this agreement. If an audit discloses findings or recommendations, Subrecipient agrees to include with the audit report a corrective action plan containing the following:

- The name and number of the person responsible for the corrective action plan.
- Specific steps to be taken to comply with the recommendations.
- A timetable for performance and/or implementation dates for each recommendation.
- Descriptions of monitoring to be conducted to ensure implementation.

In the event that the Subrecipient completes any other routine or required audits during the period of this grant (for example, an annual independent audit), the Subrecipient will inform RAE of the availability of the audit within 30 days of completion, and will provide RAE with a copy of the audit *if requested by RAE*.

12. Allowable and Unallowable Costs: SNEP Watershed Grants are federal funds. Subrecipient agrees to follow federal regulations as put forth in 2 CFR 200 and applicable OMB Circulars in determining allowable costs under this agreement. Subrecipient agrees not to use funds provided under this agreement for any cost that is unallowable under these regulations. Reimbursement by RAE for any cost that is later determined to be unallowable does not constitute sanction by RAE for the unallowable use of these funds.

13. Indemnification: The Subrecipient agrees to indemnify RAE against all losses for expenses incurred by the Subrecipient that are, or are later held to be, unallowable. Reimbursement by RAE to the Subrecipient for such costs does not negate nor in any way nullify the Subrecipient's responsibility under this provision.

As the direct Recipient of funds under this Award, RAE is responsible for the management of the award and is ultimately responsible for ensuring compliance with all federal requirements. The Subrecipient will cooperate with RAE in achieving compliance with the specific terms and conditions of the award, as well as the other terms and conditions specified in this agreement.

14. Project Data and Results: Sharing of Project data and results, including environmental data and analysis, is a SNEP priority. All information collected and/or created under this grant/cooperative agreement will be made visible, accessible and independently understandable to users in a timely manner (typically no later than one (1) year after the data are collected or created) free of charge or at minimal cost that is no more than the cost of distribution to the user.

Project results will similarly be made available in a timely manner, typically via the final report described above and in Attachment 2.

15. Signatures

For Restore America's Estuaries

By:  _____
Jeff Benoit, President & CEO

Date: 9-4-18

For Cape Cod Commission (Barnstable County):

By:  _____
Name & Title: Leo Cakounes, Ron Beaty, Mary Pat Flynn,
Barnstable County Commissioners

Date: 09/12/18

Attachments

- Attachment 1: Progress Report Requirements
- Attachment 2: Final Report Requirements
- Attachment 3: Project workplan and budget.



2018 SNEP WATERSHED GRANTS Subrecipient Agreement

Attachment 1: Progress Report Requirements

General Instructions

The Progress Report consists of:

1. Cover Information;
2. Project Report Narrative;
3. Project Budget Report;
4. Supporting Materials;
5. Certification.

Progress reports shall be completed and returned within one month of the end of a reporting period, using the following calendar:

Report	Period Covered	Due Date
Progress #1	Sep. 1, 2018 – Dec. 31, 2018	Jan. 31, 2019
Progress #2	Jan. 1, 2019 – Jun. 30, 2019	Jul. 31, 2019
Progress #3	Jul. 1, 2019 – Dec. 31, 2019	Jan. 31, 2020
Progress #4	Jan. 1, 2020 – Jun. 30, 2020	Jul. 31, 2020
Final Report	Entire Project period (completion no later than Aug. 31, 2020)	30 days following completion of Project and no later than Sept. 30, 2020.

If there was no Project activity during the period, a report should still be filed, explaining why there was no activity. Please use the template attached to these instructions to complete the progress report. The report should be submitted via email in PDF format to:

snepgrants@estuaries.org

The form may be signed electronically.

The following pages provide a template and instructions for progress reports. Use this format.

(Attach. 1 Cont'd)

**SNEP Watershed Grants
Progress Report Template**
Annotated with Instructions

1. Cover Information

Date

Project Name

Contract Number (SNEPWG18-###)

Grant Period (for entire Project)

Grantee Organization

Report Contact Person, with telephone & email

Project Leader (if different)

Reporting Period

Report Type and Number (e.g., Progress #2)

2. Project Report Narrative

Summarize the Project activities undertaken during the current reporting period within the following headings, building upon the narrative from previous reports, if any.

2.A. Results & Progress to Date

Describe in sufficient detail the goals of the Project, and the progress and results achieved during the current reporting period, building on the narrative from previous reports, if any.

Report accomplishments or setbacks on specific tasks as described in the scope of work, Attachment 3. This should include information such as:

- problems that the Project is addressing;
- short and long term objectives, and how they are being or have been met;
- relevance of the Project to restoring and protecting coastal and watershed ecosystems in the Southeast New England Region;
- activities carried out in this reporting period, including specific techniques and materials used;
- deliverables or milestones completed or partially completed during the reporting period (if partially completed, describe current status, percentage completion, etc.);
- findings to date or lessons learned during this reporting period;

- challenges or potential roadblocks to future progress (Note: If you have immediate concerns about the Project, please contact RAE to discuss the issue as soon as possible.)

2.B. Work Remaining Under Current Contract

Describe in sufficient detail the activities remaining and next steps to be completed under the current contract. Provide an updated timeline of major Project tasks, as applicable.

2.C. Compliance

Describe the status of Quality Assurance Project Plan (QAPP) completion, submittal and approval. List any permits required for the Project, and their status (e.g., not yet applied for, submitted and under review, approved on [date], etc.).

2.D. Project Partners

List major Project partners, and briefly note their contributions.

2.E. Volunteer and Community Involvement

Describe community support and any public involvement in the Project, including the specific roles of volunteers in Project activities. List the number of volunteers and hours that were contributed during this period. If volunteer time is being used as match, report this in the budget section, described below.

2.F. Outreach & Communications

Describe any outreach or educational activities (e.g. training, brochures, videos, press releases or public events) related to the Project. **Include PDF copies of press releases, outreach documents, newspaper articles, etc. as described under “Supporting Materials,” below.**

3. Project Budget Report

The budget report must provide sufficient information and detail to explain Project expenses, for the reporting period *and* cumulative-to-date, in the context of the objectives, tasks, and categories provided in the Project narrative and budget under Attachment 3. The budget report should be organized so that a reviewer can easily judge whether expenditures to date for the Project are tracking well with progress toward objectives and, if not, to understand why.

3.A. Summary Budget Table

Provide a summary budget table to show overall expenditures and match during the reporting period and cumulative-to-date, using the following format. Be sure to fully document match and match sources.

Summary Budget Table

	Budget Category	Total Budgeted Funds	Total Budgeted Match	Grant Funds Expended this period	Grant Funds Expended Cumulative	Match Funds Expended this period	Match Funds Expended Cumulative	Match Source
a	Personnel							
b	Fringe							
c	Travel							
d	Equipment							
e	Supplies							
f	Contractual							
g	Other							
h	Total Direct							
i	Indirect							
j	Total							

3.B. Detailed Project Budget Table

The centerpiece of the Project budget report is a budget table or tables utilizing the same cost categories and level of detail as the Project budget under Attachment 3. Report expenditures by category and, if applicable, task. Where a category is very broad, provide sufficient breakdown detail – for example, where “personnel” covers a number of individuals, show expenses for each individual; under “subcontracts” show expenses for each subcontract, etc. The table need only describe expenditures during the reporting period, rather than cumulatively. Add additional tables if need be to provide sufficient detail, or to summarize costs by task. **Where additional tables are used, ensure that the reviewer can easily understand how they relate to one another and the summary budget table.**

3.C. Budget Narrative

Use a budget narrative, keyed to the budget tables where necessary, to provide sufficient detail on expenditures and match. The budget narrative in the report may follow the format of the budget narrative in the Project budget under Attachment 3. Be sure to explain any deviations from the approved budget. The Subrecipient Agreement details requirements for prior approval for changes to Project budgets.

4. Supporting Materials

Include high-resolution digital copies, using PDF format for documents and JPG or TIFF format for images, of supporting materials related to the Project, including:

- Project maps and drawings;
- Technical memoranda, data analyses and modeling reports;
- Project photographs, including photos depicting implementation sites before, during, and after implementation; photos of Project signs, etc.;
- Press releases, news articles, brochures, educational curricula, etc.

In the event that file sizes for supporting materials are too large to attach, contact RAE to set up a shared cloud file.

5. Certification

Include this language: *The undersigned verifies that the descriptions of activities and expenditures in this progress report are accurate to the best of my knowledge; and that the activities were conducted in agreement with the grant contract. I also understand that matching fund levels established in the grant contract must be met.*

Grantee Signature:

Name:

Job Title

Date:

Organization:



2018 SNEP WATERSHED GRANTS Subrecipient Agreement

Attachment 2: Final Report Requirements

General Instructions

The Project final report follows the same format as interim progress reports, with several important differences:

- The final report covers the Project from beginning to end, describing the entire course of the Project, and presenting all expenditures and results;
- It includes lessons learned from the vantage point of the completed Project;
- It provides greater detail on both process and outcomes; and
- It includes an executive summary written for a general or general professional audience (more on this below).

The Final Report consists of:

0. Executive Summary;
1. Cover Information;
2. Project Report Narrative;
3. Project Budget Report;
4. Supporting Materials;
5. Certification.

The Final Report covers the entire Project period (completion no later than Aug. 31, 2020) and must be submitted within 30 days following completion of the Project (no later than Sept. 30, 2020.)

The report should be submitted via email in PDF format to:

snepgrants@estuaries.org

The form may be signed electronically.

The following pages provide a template and instructions for final reports. Use this format.

(Attach. 2 Cont'd)

**SNEP Watershed Grants
Final Report Template**
Annotated with Instructions

O. Executive Summary

The executive summary (ES) is most easily completed after the rest of the final report has been written; however, it is an essential component of the report and should not be treated as an afterthought. Communication, collaboration, learning and technology transfer are fundamental to the mission of the Southeast New England Program (SNEP). The executive summary will be a principal means by which outcomes of the Project are communicated; therefore, it should adhere to the following guidelines:

- The executive summary should be written and formatted so it can be used as a stand-alone report. It should make sense to a reader with no prior knowledge of the Project, and should be fully understandable independent of the rest of the final report or any other Project information or documentation.
- Follow the format and utilize the headings for the full final report (listed below), providing complete information on the Project, including a summary of costs and match.
- The ES should include its own title or cover page so that it can be easily separated from the rest of the report. This may be a general, illustrated cover for the entire report that doubles as a cover for the ES.
- Consider your audience. You may choose to write for a general audience – for example, all adult residents of a particular municipality. Or, you may gear the ES toward a more professional audience – for example, water resources managers throughout the SNEP region. In every case, however, it should be written for a broader audience than simply the Project team and grant managers. If it is written for a more technical audience, it should still be written in such a way that an informed general reader – for example, a newspaper reporter – can make sense of it. If you use acronyms or technical terms, for example, provide a glossary if need be to define them.
- Communicate the story of the Project. The reader should understand, not just what you did, but why you did it – why it is important, and how it will positively affect ecosystems and communities in Southeast New England. If it pertains to a specific resource, thoroughly describe its impact on that resource, and also explain its broader impact. For example, for a Project that restores water quality, the ES should describe the specific parameters of that restoration, but should also discuss the importance of the improvement to the community, such as beach use, shellfishing or the local tourism economy, and describe the area (watershed, estuary, community, etc.) affected by the work.

- Use images to help tell that story. The ES should include the best and most informative maps, photos or other images from among the supplemental materials (Section 4, below). At the very least, the ES should include a map of the Project area and some high-resolution photos of the Project area, community meetings, construction work if any, researchers performing sampling, etc. The ES should include enough images to convey the outcomes of the Project while maintaining an easily readable summary and convenient digital file size.
- Include an overview of Project costs and match. Describe volunteer participation.
- In general, the ES should be about 3-5 pages of text, and 5-10 pages complete with images.
- The ES must prominently acknowledge SNEP support of the Project. Suggested language for this acknowledgement is provided in the subrecipient agreement.

1. Cover Information

The cover information for the final report is identical to that for a progress report, except that the reporting period is the entire (actual) grant period, as follows:

Project Name
 Contract Number (SNEPWG18-###)
 Grant and Reporting Period (actual, completed)

Grantee Organization
 Report Contact Person, with telephone & email
 Project Leader (if different)

Report Type: Final

2. Project Report Narrative

Summarize the Project activities undertaken during the course of the Project. Unlike progress reports, the final report *does not* build upon the narrative from previous reports, but should be a stand-alone report, describing the Project from beginning to end.

2.A. Project Results

Describe in sufficient detail the goals of the Project, and the progress and results achieved over the course of the Project. Report accomplishments or setbacks on specific tasks as described in the scope of work, Attachment 3. This should include information such as:

- problems that the Project addressed;
- short and long term objectives, and how they are being or have been met;
- relevance of the Project to restoring and protecting coastal and watershed ecosystems in the Southeast New England Region;
- geographic area(s) affected by the Project;

- activities carried out to complete the Project, including specific techniques and materials used;
- deliverables or milestones completed;
- findings to date or lessons learned during this reporting period;
- changes made to the Project plan over the course of the Project, why they were made and how they worked out;
- next steps for future progress;
- challenges for future progress.

2.C. Compliance

List or summarize any compliance activities completed – Quality Assurance Project Plan (QAPP), permits, etc.

2.D. Project Partners

List major Project partners, and note their contributions in detail.

2.E. Volunteer and Community Involvement

Describe community support and any public involvement in the Project, including the specific roles of volunteers in Project activities. List the number of volunteers and hours that were contributed during the Project. If used as match, report the match figures under the budget section described below.

2.F. Outreach & Communications

Describe any outreach or educational activities (e.g. training, brochures, videos, press releases or public events) related to the Project. **Include PDF copies of press releases, outreach documents, newspaper articles, etc. as described under “Supporting Materials,” below.**

3. Project Budget Report

The budget report must provide sufficient information and detail to explain Project expenses for the entire Project, in the context of the objectives, tasks, and categories provided in the Project narrative and budget under Attachment 3. The budget report should be organized so that a reviewer can easily judge whether expenditures tracked the original Project budget and, if not, to understand why.

3.A. Summary Budget Table

Provide a summary budget table to show overall expenditures and match over the course of the entire Project, using the following format. Be sure to fully document match and match sources.

Summary Budget Table

	Budget Category	Total Budgeted Funds	Total Budgeted Match	Total Budgeted Grant + Match	Actual Grant Funds Expended	Actual Match Funds Expended	Actual Expended Grant + Match	Match Source
a	Personnel							
b	Fringe							
c	Travel							
d	Equipment							
e	Supplies							
f	Contractual							
g	Other							
h	Total Direct							
i	Indirect							
j	Total							

3.B. Detailed Project Budget Table

As with progress reports, the centerpiece of the final budget report is a budget table or tables utilizing the same cost categories and level of detail as the Project budget under Attachment 3. Report expenditures by category and, if applicable, task. Where a category is very broad, provide sufficient breakdown detail – for example, where “personnel” covers a number of individuals, show expenses for each individual; under “subcontracts” show expenses for each subcontract, etc. This table will report expenditures over the course of the entire Project. Add additional tables if need be to provide sufficient detail, or to summarize costs by task. **Where additional tables are used, ensure that the reviewer can easily understand how they relate to one another and the summary budget table.**

3.C. Budget Narrative

Use a budget narrative, keyed to the budget tables where necessary, to provide sufficient detail on expenditures and match. The budget narrative in the report may follow the format of the budget narrative in the Project budget under Attachment 3. Be sure to explain any deviations from the approved budget. The Subrecipient Agreement details requirements for prior approval for changes to Project budgets.

4. Supporting Materials

Include high-resolution digital copies, using PDF format for documents and JPG or TIFF format for images, of supporting materials related to the Project, including:

- Project maps and drawings;
- Maps of Project results or outcomes if applicable;
- Technical memoranda, data analyses and modeling reports;
- Project photographs, including photos depicting implementation sites before, during, and after implementation; photos of Project signs, etc.;
- Press releases, news articles, brochures, educational curricula, etc.

In the event that file sizes for supporting materials are too large to attach, contact RAE to set up a shared cloud file.

5. Certification

Include this language: *The undersigned verifies that the descriptions of activities and expenditures in this final report are accurate to the best of my knowledge; and that the activities were conducted in agreement with the grant contract. I also understand that matching fund levels established in the grant contract must be met.*

Grantee Signature:

Name:

Job Title

Date:

Organization:

Attach. 3

3225 MAIN STREET • P.O. BOX 226
BARNSTABLE, MASSACHUSETTS 02630



CAPE COD
COMMISSION

(508) 362-3828 • Fax (508) 362-3136 • www.capecodcommission.org

August 29, 2018

The following details our proposed project, partner organizations, and project costs.

Project Title: Regional Collection and Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making

Location of Project: Cape Cod, Massachusetts

Applicant: Cape Cod Commission (Barnstable County)
3225 Main Street
Barnstable, MA 02630

Nature of Organization: Regional Planning Agency, Department of Barnstable County

Project Lead/Point of Contact: Erin Perry, Special Projects Manager
eperry@capecodcommission.org
508-744-1236

Partner Organizations: Association to Preserve Cape Cod
Center for Coastal Studies
UMass Dartmouth School for Marine Science and Technology
Waquoit Bay National Estuarine Research Reserve
Woods Hole Oceanographic Institution

Total Request: \$399,998
Total Non-Federal Match: \$145,665
Total Project Cost: \$545,663
Match Percentage: 36.42%

We look forward to the opportunity to complete the proposed work.

Sincerely,

Kristy Senatori
Executive Director

PROJECT NARRATIVE

Problem Statement: Cape Cod's 53 coastal embayments, nearly 1,000 ponds, and sole source aquifer are ecologically rich and extremely fragile (see project area map in attachment A). Human activity and land use – primarily nutrient pollution from septic systems – have significantly degraded estuarine and freshwater quality. Cape Cod communities struggling to find cost-effective strategies to reduce nitrogen can turn to the Area Wide Water Quality Management Plan for Cape Cod (208 Plan), recently updated by the Cape Cod Commission (Commission). Although the 208 Plan focuses on nitrogen as the major target for improving water quality in estuaries, phosphorus loading to freshwater ponds and streams must be targeted for pollution control measures. The 208 Plan provides a framework of traditional and non-traditional strategies for estuarine and freshwater quality improvement.

Towns are responsible for implementing strategies to reduce nutrients. In many areas across the region development density is not adequate to support cost-effective traditional collection and treatment of wastewater; therefore, towns are relying on the 208 Plan framework as a pathway for non-traditional strategies. Performance of these strategies is less certain, and implementation relies heavily on adaptive management. In addition to nutrients from septic systems, stormwater runoff is also a concern – one that all Cape Cod communities within the Southeast New England Program region are required to address through Municipal Separate Storm Sewer System (MS4) permits.

The 208 Plan's efficacy as a framework for local water quality management depends on the ability to ground-truth and record if strategies enacted in the field are effective and if the environment is responding with water quality improvements. Towns must revisit implementation plans periodically, as required as a condition of consistency with the 208 Plan and MS4 permits, and to maintain compliance with Watershed Permits issued by the Massachusetts Department of Environmental Protection. In most cases, towns must revisit plans at least every five years, and adjust their approaches as necessary. Towns, Barnstable County and partner organizations are collecting data annually and as nutrient management alternatives are implemented. Data analyses are needed to evaluate and determine success – or failure – of approaches.

This proposal seeks support to improve recording, management and translation of monitoring data, so towns better understand if management strategies are successful. It includes new methods for data analysis, evaluation, reporting, and translation to improve understanding of water quality trends and better integrate results into local planning and policy development, creating a path forward for the provision of data and information that will serve the 15 Cape Cod communities and the region well into the future.

Project Description: The Commission has developed a regional water quality database to centralize water quality data historically collected by multiple organizations and agencies. The project team proposes to enhance this framework by integrating additional data and adding tools to ensure data accuracy and assess nutrient mitigation strategies. Funding will help develop a user-friendly interface that analyzes estuarine monitoring data for each estuary with an existing long-term dataset. One watershed will be selected to pilot the interface in order to demonstrate and assess its effectiveness as a decision-support tool. In addition, the project team will compile and analyze existing data associated with freshwater resources, including ponds, lakes, and drinking water; and develop information products to improve understanding of the interconnection of all water resources to Cape Cod's Sole Source Aquifer. Together, these improvements will create a feedback-loop so that the effect of nutrient reduction strategies on a resource can be understood, captured, and used in real-time strategic decisions for nutrient reduction. Recognizing the importance of clean water and supporting all aspects of the environment on Cape Cod, information compiled and analyzed as part of this project will also be made more widely available through a variety of outreach initiatives.

A key feature of this program is that data analysis will provide a measure of the health of the water body and watershed to guide investment in nutrient reduction strategies. Another feature of this program is its

collaborative approach to water resources data aggregation, providing a platform that makes it possible for towns to have a comprehensive picture of the benefits of their investments across all gradients of the watershed. End user engagement is woven into each proposed task ensuring that the products provided at the end of the project will be easily applied and readily utilized by the research and management communities on Cape Cod. The goal is to provide towns with the best available science-based information, so investments in nutrient reduction and groundwater protection have the best possible effect on resources. This goal will be reached through the expertise of the project team, End User Group established as part of the project, and the State of the Waters: Cape Cod Advisory Committee established by the Association to Preserve Cape Cod (APCC). The project team includes experts in water resources, database management, data collection and analysis, collaboration and outreach and project management. The proposed work will be achieved through the following project tasks:

- Task 1: Data integration, quality assurance and control
- Task 2: Collaboration with end users and pilot project
- Task 3: Data analysis and development of a processing script
- Task 4: Integration with web-based user interface and other information products
- Task 5: Targeted outreach to inform local action
- Task 6: Final report

Task 1: Data integration, quality assurance and control

Water quality data as available through project partners and collaborators from all regions of Cape Cod, including estuarine and freshwater environments, will be inventoried and entered into the regional database. The Commission maintains data in an SQL database and will work with project partners to expand the existing database, as needed.

Estuarine Data: Commission staff will work with partner monitoring organizations to compile estuarine water quality data not currently in the regional database. The original effort to compile and integrate data into the database occurred in 2016 and included development of the database infrastructure, identification of data fields and compilation of historical data through 2015. The database will be updated to include all available data through to the present time. The monitoring organizations contributing data include the Center for Coastal Studies (CCS), Buzzards Bay Coalition (BBC), University of Massachusetts Dartmouth School for Marine Science and Technology (SMAST), and the Waquoit Bay National Estuarine Research Reserve (WBNERR). Data collection for these water quality monitoring programs began in 2006, 1992, 1987, and 1993, respectively.

To take advantage of all available long-term monitoring data, while also establishing quality control standards, any historic data generated before or without an approved Quality Assurance Project Plan (QAPP) will be flagged accordingly in the database as part of the quality assurance and quality control (QA/QC) process. Metadata will accompany the database, as well as any final reports acknowledging the use and confidence level of non-QAPP approved data. Three of the four contributing monitoring organizations (CCS, BBC, SMAST) hold current EPA-approved QAPPs. While BBC is not an official partner on this project, they have provided data for use in the database and agree to continue doing so. WBNERR will develop a QAPP in the first year of this proposed project. WBNERR currently sends samples to CCS and SMAST for nutrient analyses under two different water quality monitoring programs; therefore, those nutrient data are covered under approved QAPPs. WBNERR also maintains long-term data (1998 – present) collected using automatic YSI loggers (i.e., sondes) as part of the NOAA National Estuarine Research Reserve System-Wide Monitoring Program (SWMP), but the standard operating procedures for this program are not covered under previously approved QAPPs.

By developing a comprehensive QAPP for WBNERR, records with high (15-minute) temporal resolution of temperature, salinity, pH, dissolved oxygen, turbidity, and chlorophyll *a* fluorescence can be incorporated into the regional database and used in correlation with nutrient dynamics to model changes. The QAPP will strengthen WBNERR's data collection process and enhance its ability to share

and integrate data across private and academic institutions and state and federal agencies. This increased capacity for standardized data sharing is significant for this project but also for future collaborations.

Freshwater Data: Extensive data is available on the quality of Cape Cod's freshwater resources. APCC staff, working with the project team and trained volunteers, will identify and compile freshwater quality data to suitable standards, including state and federal Clean Water Act standards for surface waters and drinking water. An inventory of data will be developed to ensure data sources can be tracked and recorded. Data will be maintained in the regional database.

Data sources will be identified by the project team, guided by standards set by the State of the Waters Advisory Committee to ensure evaluation of all important and credible sources. Data will be compiled for lakes, rivers, public drinking water supplies, and groundwater. This effort will leverage the existing water resources data compiled and maintained by each project partner and will evaluate and compile appropriate data from other sources as an initial step in the project. Data utilized will include, but not be limited to, the 17 years of data collected by the Pond and Lake Stewardship (PALS) Program, as well as data collected from detailed pond assessments and water use and drinking water quality data from the 17 individual water purveyors on Cape Cod, all of which has been compiled by Commission staff.

The Commission and project partners will work with a consultant to develop a QAPP for pond and lake data. In the past, the Massachusetts Department of Environmental Protection (DEP) has declined to accept the existing PALS data for use in identifying and listing impaired waters. As with estuarine data, any historic data generated before or without an approved QAPP will be flagged accordingly and metadata will accompany the database.

Database Quality Assurance and Quality Control (QA/QC): A system for identifying potential errors in source data and/or inconsistencies in database formatting will be established.

The Commission and project partners will work with a consultant to complete the following tasks: 1) develop and agree upon a set of "filter rules" for both historic and future water quality data sets to identify potential errors in the source data; 2) implement a system for performing QA/QC on historical data sets and new data sets, as provided; 3) identify and address database formatting inconsistencies, such as inconsistent station IDs, that impact importing data sets and searchability of the database

As previously described, data not covered by a previously approved QAPP will be flagged accordingly and metadata accompanying the database, as well as final reports, will acknowledge the confidence level of non-QAPP approved data.

Task 1 Outputs: 1) Inventory of water quality data, including sources, parameters and dates; 2) Identification of data gaps; 3) Complete, up-to-date regional estuarine and freshwater quality databases; 4) WBNERR QAPP; 5) Ponds QAPP

Task 2: Collaboration with end users

The goal of this project is to make information more accessible and useable by towns and the region, all of whom are working to meet a regional goal of improving the quality of water resources. Social science research shows that to increase the likelihood of science and data being applied, managers and decision-makers must understand the science and find it to be legitimate and credible (Cash et al. 2003). To enhance the likelihood that data and products from this project are used and trusted, the project team intends to create deliberate processes that engage end users (those in a position to apply the project deliverables), ensuring they understand the data and that data products and analyses meet their information needs.

To this end we have designed a collaborative end user engagement process to enable this project to bridge the science to management divide and achieve desired outcomes. The project approach includes

integrating defined steps that will link the technical aspects of data collection and analysis to development of decision-support tools that meet end user needs and are able to help guide management decisions. The collaborative process is designed to be iterative and end user driven and builds in meaningful and deliberate opportunities for regional and local decision-makers to contribute to project outcomes. End user collaboration will be integrated in every aspect of the project, initiated at the beginning and sustained to the end. Utilizing this collaborative approach will set up the project for greater success by strengthening partner relationships as well as data sharing mechanisms that will continue beyond the life of the project. The impact of the collaboration process will also be evaluated as part of our project activities.

Key end users fall into four main groups: 1) water quality managers, regulators and policymakers who will draw on information and decision-support tools created from this effort to inform their work and management decisions, 2) water quality monitoring organizations who collect, analyze and contribute data to the regional database, 3) decision-makers from one watershed who will work with the project team to pilot test applying information to their local management needs and interests, and 4) researchers who can use information from the regional database as a platform for supporting local studies on the effectiveness of water quality approaches applied in the Cape Cod setting.

The seven groups of end users identified include: 1) The Cape Cod Water Protection Collaborative (CCWPC), which includes representatives from all fifteen Cape Cod towns and two County representatives. The mission of this body is to protect Cape Cod's shared water resources by promoting and supporting the coordinated, cost-effective and environmentally sound development and implementation of local water quality initiatives; 2) The Cape Cod Commission; 3) DEP; 4) The Environmental Protection Agency (EPA); 5) Monitoring organizations – CCS, APCC, WBNERR, BBC, pond associations; 6) Water quality committees, water resource managers and local officials from one pilot watershed; 7) Researchers (SMAST).

Engagement with end users will be structured and facilitated by a trained engagement specialist from WBNERR. Facilitators will ensure that open and regular communication is established and sustained with end users over the course of the project. The collaborative process has been broken into five objectives:

Collaboration Objective 1: Establish an End User Group to provide guidance to the project team and help make key decisions on different aspects of work products.

Process: The End User Group will be established at the beginning of the project and will be comprised of the membership of the Cape Cod Water Protection Collaborative and one designated representative from each of the other end user groups, including the project team organizations. The End User Group will meet on a quarterly basis. Meeting will be structured and professionally facilitated.

Anticipated Outcomes: Strengthened relationships among project partners, monitoring organizations, and end users, which is essential for increasing project impact and achievement of objectives.

Collaboration Objective 2: Work with water quality monitoring organizations to discuss database interface, data needs, reporting procedures, data QA/QC protocols, and all related processes necessary to establish a database that is as complete as possible and trusted by partners.

Process: The project team will hold a workshop soon after project start-up to bring key monitoring groups together to discuss all aspects of database set-up and use including data access, delivery, archiving, and quality control, as well as individual agency roles necessary to sustain the effort beyond the life of the project.

Anticipated Outcomes: Clear list of action items and responsible parties to strengthen database refinement and roll-out.

Collaboration Objective 3: Work with the End User Group to identify priority water quality information needs that can be addressed by accessing data from the regional database, as well as desired data outputs.

Process: Through facilitated meetings, WBNERR will work with end users to identify the key types of information and data outputs decision-makers need. Feedback will be summarized and shared with the project team. This feedback will be used to guide Task 3 and development of a data analysis processing script.

Anticipated Outcomes: Prioritized list of data analyses and desired outputs, as well as a list of data gaps.

Collaboration Objective 4: Work with pilot watershed group to conduct further analyses, interpret and translate results, and identify opportunities for applying data within the watershed to help inform water quality management decisions.

Process: Drawing on a review of available data by watershed, as well as the data needed to effectively run the processing script, the project team will select a pilot watershed. This decision will be made as part of the project implementation process and with consideration to areas where use of the regional database and processing script may be illustrated most effectively. This will inform lessons learned and serve as a template for other watersheds. Two meetings with key decision-makers within the pilot watershed, as well as database developers and technical data experts will take place. The purpose of these meetings will be to unpack and illustrate how municipalities can apply project outputs to decision-making, as part of local planning and management efforts. Where and how analyses can help decision-makers evaluate implementation of local water quality plans will be a focus of these deliberations. After the pilot process has been completed WBNERR will convene a regional workshop to share results of what was learned and transfer lessons to decision-makers in other watersheds on Cape Cod. Lessons and results from the process will be captured in the final project report.

Anticipated Outcomes: Decision-makers from pilot watershed receive analyzed and interpreted watershed specific data to inform management efforts. Decision-makers understand, trust and can apply the project outputs.

Collaboration Objective 5: Work with monitoring organizations and selected researchers from the pilot watershed to identify monitoring and research gaps. This is essential to create a feedback loop that allows the project team to identify how the regional database can be used to help improve monitoring.

Process: Given the range of approaches being considered across the region to help improve water quality, it is critical that a component of this project is geared toward better understanding outstanding monitoring needs. A workshop will be held to identify (i) if and where monitoring should/can be enhanced or streamlined, (ii) if previously uncollected parameters are needed to capture key trends, (iii) gaps in current monitoring efforts and resources needed to meet these gaps, (iv) opportunities where monitoring groups can work together more effectively to achieve shared goals and strengthen the regional database.

Anticipated Outcome: Recommendations developed to help guide future monitoring efforts. Identification of key research needs that is shared with regional research entities.

Task 2 Outputs: 1) Guidance on database QA/QC; 2) List of priority data outputs for Task 3; 3) Final report for one pilot watershed; 4) Key recommendations to guide future monitoring efforts; 4) List of key research needs to help inform local management efforts

Task 3: Data analysis and development of a processing script

As previously described and as will be further developed and defined by the collaborative process, data analysis tools summarizing water quality data into metrics that are easy to digest, and representative of trends and patterns are needed. Information is needed at spatial scales ranging from the sampling station to the watershed to the region. In response to this regional management need the project team will analyze spatial and temporal trends in water quality across the coastal and fresh waters of Cape Cod.

Location-specific water quality monitoring is necessary to identify problems and develop and evaluate management solutions because underlying drivers of declining water quality may be dramatically different from one watershed to another. Broader spatial and temporal scale analyses are often not available when water quality monitoring focuses on a single watershed or water body. The project team plans to utilize the regional database to generate a region-wide dataset, which will be critical to understanding both local and broader scale patterns in water quality and climate indicators. For example: water quality, indicated by chlorophyll *a* pigments, has declined across Buzzards Bay and other Cape Cod coastal embayments over the past several decades. The decline in water quality observed across Buzzards Bay is more consistent with regional climate warming, rather than trends in nutrient loading or nitrogen concentration (Rheuban et al. 2016, Williamson et al. 2017). Using this database, the following question can be answered: do our observations in Buzzards Bay represent a similar pattern across the all the coastal and fresh waters of Cape Cod?

Woods Hole Oceanographic Institution (WHOI) will develop a processing script for data trend analyses. Detailed data analyses will allow end users to discern if implemented mitigation strategies are effective or if other factors beyond traditional management tools have impacted local and regional water quality. The proposed work will make data analysis accessible to local stakeholders by combining modern, open source data analytics toolboxes with web-based dashboards and GIS. The data analysis will be designed such that metrics will be generated upon request at user-defined spatial and temporal scales. Data analyses will utilize QA/QC protocols and will have the ability to integrate new data into analyses as the database is updated, providing long-term benefit to end users beyond the period of the grant.

In conjunction with the collaborative process, the project team will generate a detailed interpretation of historical water quality data for one pilot watershed. This detailed interpretation will also include an analysis of nitrogen loading history based on published nitrogen loading models. Project partners at WHOI completed a nitrogen loading trend analysis of 28 embayments within the Buzzards Bay watershed (Williamson et al. 2017) and propose a similar analysis for the detailed interpretation of a chosen embayment. Data needs for the historical nitrogen loading trend analysis, such as land use and MA level III assessors' data, have already been compiled by project partners. This historical nitrogen loading trend analysis will allow us to compare nutrient input trends with water quality trends and will provide a framework of analyses for other regional watersheds.

APCC staff will analyze and compare freshwater quality data to suitable water quality standards, including state and federal Clean Water Act standards for surface waters and drinking water. Work will take advantage of existing resources, such as the Cape Cod Pond and Lake Atlas, which includes freshwater standards for evaluating pond water quality that consultants have been using for most detailed pond studies since 2003.

All analyses will be used in development of water resources report cards and the “State of the Waters: Cape Cod” report, which will grade and characterize water resources (described as part of task 4).

Task 3 Outputs: 1) Complete and annotated processing script for estuarine data analyses; 2) Data trend analyses for currently available estuarine and freshwater data sets; 3) Data interpretation for one pilot watershed; 4) Evaluation of current water quality relative to known standards (ex. nitrogen TMDLs); 5) Comparison of water quality across regions to identify trends and commonalities; 6) Summary of results and needs assessment.

Task 4: Integration with web-based user interface and other information products

Data and analyses will be made available through a web-based user interface, water resources report cards, the “State of the Waters: Cape Cod” annual reports, and other information products.

The processing script will be integrated into the regional database and website user interface. Commission staff will review the data processing script developed by WHOI, work with WHOI staff to integrate the script into an SQL procedure, and verify script functionality through testing of the procedure. Commission staff will edit existing SQL tables or create new tables for processed data from the SQL procedure to interface with the web-based interface.

Estuarine data analyses that result from the processing script and that are consistent with the end user needs established in task 2 will be displayed on the regional database website. To ensure ease of access and use, Commission staff will work with project partners and the End User Group to assess the suitability of the current web interface. Charts and visuals will be edited and/or created, as needed, to display appropriate analyses.

Estuarine and freshwater data analyses will be used to develop the “State of the Waters: Cape Cod” report, which will be an organized compilation of report cards. All data and analyses from task 3 will be integrated into water resources report cards that characterize issues and form the basis of the report. APCC will characterize water resources based on analyses completed. Report cards will describe and grade watersheds, ponds and lakes, drinking water, coastal waters, and groundwater on Cape Cod.

To develop report cards, APCC will use a methodology that has been used effectively to raise public awareness and promote action in areas such as California, Florida, Maine, New Hampshire, New York, Oregon, Texas, Washington, the Great Lakes, Chesapeake Bay, U.S. waters and internationally. In Massachusetts, report cards have highlighted water quality problems and improvements in at least five water bodies, including the Blackstone River, Charles River, Mystic River, Buzzards Bay, and Taunton River. Report cards were also used to highlight beach water quality issues at 15 public beaches in metropolitan Boston. A list of the report cards referenced can be found in attachment B.

Aside from Buzzards Bay communities, Cape Cod does not have any water resources report cards to help the public and decision makers understand problems and encourage action. Most report cards assign a letter grade using defined criteria and sometimes the grade is combined with a color scale to indicate degree of severity. The result is powerful, graphic, and easy to comprehend.

The “State of the Waters: Cape Cod” Report will integrate the report cards and be easily understood by the general public yet developed with sufficient rigor to be accepted by experts and regulators. The report will be publicly available through digital and conventional media and will become a regular and prominent feature released at the APCC annual meetings and promoted in other venues. In subsequent years, the report will be updated to reflect the latest data.

The report will be used as an educational resource, but also to identify themes and issues and inform better public policy regarding the improvement and preservation of Cape Cod’s water resources.

Task 4 Outputs: 1) Updated web-based user interface to display and make publicly accessible all data and analyses; 2) Water resources report cards that provide letter grades for water quality of lakes, rivers, estuaries and coastal waters, groundwater, drinking water and watersheds; 3) “State of the Waters: Cape Cod” Report

Task 5: Targeted Outreach to Inform Local Action

Results will be delivered and translated to local-decision-makers best positioned to apply and integrate findings into local planning and management.

In addition to the workshops and meetings identified above, WBNERR will conduct two additional workshops to share results from this work with the full End User Group, other regional decision-makers, and the public. The purpose of these workshops is to share results of data analysis and information products with those who need the information to make decisions. Depending on timing and feedback from the End User Group and project team, these workshops may be stand alone or combined and/or coordinated with other long standing regional outreach events that are well known and well attended. Three of these include the One Cape Summit (led by the Commission), the Cape Coastal Conference (led by WBNERR and several partner organizations and agencies) and the APCC Annual Meeting. Linking the project outreach and communication plan with these established regional events will help to strengthen overall impact and enhance cohesiveness.

Annual Meetings: APCC will release the “State of the Waters: Cape Cod” Report at its annual meeting, in August/September of each year. Most meetings draw approximately 150 people. The Commission will showcase this project at the OneCape Summit, which focuses on both the environment and the economy, but was originally established to address progress on water quality improvement. The Summit attracts between 200 and 300 attendees each year. The annual Cape Coastal Conference will also be an opportunity for the distribution of project information. It typically draws between 300 and 400 attendees. This established pattern of annual regional events will help draw attention to the project and set the stage for utilizing project outputs to inform restoration and protection of water resources over the long term.

Social media: APCC will design and implement a social media campaign that will publicize the “State of the Waters: Cape Cod” Report. Planned work includes: 1) a blog with short articles and photos about water quality, natural history information on marine and freshwater systems, and best management practices for protecting water resources. 2) social media posts related to water quality and relaying specific information on issues and events to generate interest in this project.

During the first year of the project, the project team will establish a schedule for targeted outreach that takes into consideration annual meeting dates that are not known at the time of this submission.

Task 5 Outputs: 1) Presentation of project results and resources and additional engagement with end users at regional outreach events, including, but not limited to the OneCape Summit, Cape Cod Coastal Conference and the APCC Annual Meeting; 2) Social media posts to share information about the project and project outputs

Task 6: Final Report

The project team will provide a final report that summarizes the data collected, the collaborative process and key outputs and outcomes of the process, data analyses, and information products.

The final report will be available through the Commission’s website and partner websites. Information in the report will be shared at existing regional outreach events, as described in task 5, and sections of the final report will be shared individually. For example, water resources report cards and the “State of the Waters” Cape Cod report will be issued annually and serve as standalone documents. The watershed interpretation will serve a localized purpose, as well as be used as a framework for moving forward in other watersheds across the region. The water quality database will be accessible through the web-based interface and will be used by a wider audience than may utilize the final report.

Task 6 Outputs: Final report that includes, at a minimum, 1) Documentation of data collected and aggregated; 2) Database QA/QC procedures; 3) Annotated processing script; 4) Data analysis methods; 4) Detailed interpretation of one or more watersheds; 5) Water resources report cards; 6) “State of the Waters: Cape Cod” Report; 7) Documentation of public outreach and workshops

Project Timeline and Milestones:

	2018					2019												2020						
	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Task 1																								
Data Compilation																								
Database QA/QC																								
WBNERR QAPP Development																								
Ponds and Lakes QAPP Development																								
Task 2																								
End User Group Mtgs																								
Monitoring Group Workshop																								
Identify Data Outputs/Analysis Needs																								
Pilot Watershed Interpretation																								
Identify Monitoring/Research Gaps																								
Task 3																								
Data Analysis/Script Development																								
Pilot Watershed Analysis/Interpretation																								
Task 4																								
Development of Report Card Template																								
Report Cards Released																								
"State of the Waters: Cape Cod" Released																								
Integrate Script with Database/Website																								
Task 5																								
Develop Targeted Outreach Schedule																								
Targeted Outreach/Workshops/Meetings																								
Task 6																								
Final Report																								

Local Impact: This project is in direct support of the 15 Cape Cod towns implementing local water quality plans, 11 of which are located within the SNEP region. Successful development of consistent and comparable data analyses will track trends in response to plan implementation, provide post-implementation information, help refine local decision-making, and facilitate management to improve water quality. The proposed processing script will be designed to allow for future automated analyses as new estuarine data are available, creating long-term capacity for embayment specific interpretation and informed local water quality decisions past the grant period. The proposed collection and analysis of freshwater data is consistent with the effort initiated for estuarine data in 2016 and will provide for a long-term, consistent database of all water resources information. The Commission is committed to maintaining the data, working with project partners to integrate new data into the future, and utilizing the QA/QC procedures developed as part of this project. APCC is committed to issuing the “State of the Waters: Cape Cod” Report on an annual basis to ensure ongoing evaluation of Cape Cod’s important water resources and responsive and responsible public policy decisions.

Regional Impact: The strong cooperative relationship among monitoring, management and non-profit organizations builds regional capacity to solve water quality challenges through collaborative and innovative restoration techniques. The combined, downloadable dataset allows for regional scale analyses to identify the impacts of climate and tidal variability on water quality management. The database structure, analyses, and information products will be transferable to other areas within the SNEP region and beyond that seek to collect and analyze long-term data sets and translate them into helpful information products.

The project team recognizes the importance of tracking both the impact of the project process and outcomes to inform future learning across the region and increase overall effectiveness. WBNERR has significant experience in project evaluation and will conduct evaluations of workshops held with managers and decision-makers to determine how well objectives were met and where efforts can be improved. WBNERR will also assess the impact of the collaborative process with the End User Group.

Results of these evaluations will be incorporated in the final project report as part of the body of learning related to this project.

Project Team (See attachment C): The project will be led by the Commission, with expertise in water resources, database development and project management. The Commission will lead project activities, coordinate project tasks, track progress, and maintain communication with project partners. Partner monitoring organizations include the CCS, SMAST and WBNERR. Each will provide data as well as guidance on quality assurance/control and serve as an advisor for data analysis. WBNERR will lead collaborative process, plan outreach workshops to decision-makers and researchers and facilitate end user meetings. WHOI will complete the processing script development and data analysis. APCC will expand upon existing freshwater databases and integrate estuarine and freshwater data and analyses into information products, including water resources report cards and the “State of the Waters: Cape Cod” Report, to increase knowledge and understanding of the health of water resources and identify water restoration needs. An End User Group will be established, consisting of project team members, the CCWPC, and other key end users identified in task 2 to assist in defining data outputs.

Integration and Multiple Benefits: This project takes a holistic approach to water resource issues, addressing both estuarine and freshwater quality. It seeks to advance several SNEP priorities, not limited to, fostering integrated approaches to restoring water quality, habitats and ecosystems; building local and regional capacity, tools and knowledge; strengthening sustainable partnerships; and improving the utility of environmental monitoring for ecosystem management. In addition to data collection and analysis, a program script, and information products, outputs will include a thoroughly vetted, downloadable database and metadata file for research and management applications consistent with DEP and EPA water quality monitoring strategies. This robust water quality database can be used by coastal scientists against other large datasets for future research projects. (e.g. marine fish and mammal migrations, coastal bird migrations, the spread of harmful algal blooms, etc.)

Leveraging: This project leverages work completed by each project partner and work completed by DEP and SMAST to develop total maximum daily loads for nitrogen and seeks to expand the effect of this research and long-term data accumulation on local management decisions. The Commission has developed databases and a web interface to store and share a regional data set. This project will take these efforts one step further to be responsive to local needs, fulfill the recommendations of the 208 Plan, and support existing management efforts to improve water quality, habitats and ecosystems.

Outreach and Communications: All work completed for this project will be included in a web-based interface. The program script will be integrated with the database and will be used on a regular basis, as additional data are available. The data and analyses will be used in water resources report cards and an annual “State of the Waters: Cape Cod” report created by APCC. APCC will build on the report cards and State of the Waters report to develop an “action agenda” that provides recommendations for actions to protect and restore water, along with measures for gauging success in implementing actions. The broad-based and diverse target audience will include the public as well as decisionmakers. Through the CCWPC, the Commission will work to share project outputs with each town. In addition, WBNERR will conduct targeted watershed-based workshops to translate information to local decision-makers. Other target audiences include full- and part-time residents, pond associations, municipal boards, departments and water quality/wastewater committees, fisheries stakeholders, other restoration partners, non-governmental organizations, elected officials, and others. Additional outreach materials will be developed, as needed, and project components will be included in presentations by the Commission and partners, as appropriate, at local, state, regional and national meetings to allow for knowledge transfer.

Literature cited can be found in attachment D.

BUDGET DESCRIPTION

Budget Table

Cost Item or Category	Cost Basis	RAE SNEP Request	Non-Federal Match	Match Source	Total Project Cost
Personnel					
Erin Perry, CCC	364 hrs. @ \$43.27	11,812.71	3,937.57	CCC	15,750.28
Tom Cambareri, CCC	153 hrs. @ \$49.53	5,683.57	1,894.52	CCC	7,578.09
Phil Detjens, CCC	208 hrs. @ \$44.45	6,934.20	2,311.40	CCC	9,245.60
Mario Carloni, CCC	364 hrs. @ \$37.18	10,150.14	3,383.38	CCC	13,533.52
Jo Ann Muramoto, APCC	500 hrs. @ \$48.00	18,000.00	6,000.00	APCC-MET	24,000.00
Don Keeran, APCC	502 hrs. @ \$43.20	16,264.80	5,421.60	APCC-MET	21,686.40
Kristin Andres, APCC	502 hrs. @ \$40.00	15,060.00	5,020.00	APCC-MET	20,080.00
Brian Horsley, APCC	416 hrs. @ \$32.00	9,984.00	3,328.00	APCC-MET	13,312.00
Amy Costa, CCS	390 hrs @ \$34.60	11,072.00	2,422.00	CCS	13,494.00
Brian Howes, PI SMAST	70 hrs. @ \$68.46	4,792.20	-		4,792.20
Roland Samimy, SMAST	70 hrs @ \$54.07	3,784.90	-		3,784.90
Outreach Asst., WBNERR	850 hrs. @ \$25.00	21,250.00	-		21,250.00
WQ Monitoring Asst., WBNERR	206 hrs. @ \$20.12	4,144.72	-		4,144.72
Waquoit Bay Volunteers, WBNERR	546 hrs. @ \$24.69	-	13,480.74	WBNERR	13,480.74
Jennie Rheuban, WHOI	1216 hrs. @ \$42.625	51,832.00	-		51,832.00
Total Personnel		190,765.24	47,199.21		237,964.45
Fringe					
Fringe, CCC	66.36%	22,947.70	7,649.23	CCC	30,596.93
Fringe, APCC	25.00%	14,827.20	4,942.40	APCC	19,769.60
Fringe, CCS	20.00%	2,214.40	484.40	CCS	2,698.80
Fringe, SMAST (+\$16.5/wk)	36.27%	3,176.91	-		3,176.91
Fringe, WBNERR	N/A	-	-		-
Fringe, WHOI	45.99%	23,837.54	-		23,837.54
Total Fringe		67,003.74	13,076.03		80,079.78
Travel					
In-state travel (APCC)	2,000 mi @ \$0.545	730.30	359.70	APCC-MET	1,090.00
Out-of-state (RAE Summit 2018; 2 CCC staff)	See Narrative	4,000.00	-		4,000.00
Out-of-state (RAE Summit 2018; 1 APCC staff)	See Narrative	1,340.00	660.00	APCC-MET	2,000.00
Out-of-state travel (WHOI - S. Doney)	See Narrative	4,798.00	-		4,798.00
Total Travel		10,868.30	1,019.70		11,888.00
Equipment					
WQ Monitoring Equipment	See Narrative	6,500.00	-		6,500.00
Total Equipment		6,500.00	-		6,500.00
Supplies					
Software (APCC)	See Narrative	335.00	165.00	APCC-MET	500.00
Workshop Supplies (APCC)	See Narrative	502.50	247.50	APCC-MET	750.00
Workshop Supplies (WBNERR)	See Narrative	1,500.00	-		1,500.00
Total Supplies		2,337.50	412.50		2,750.00
Contractual					
QAQC Database (CCC)	See Narrative	20,000.00	-		20,000.00
QAPP Development (CCC)	See Narrative	-	7,500.00	CCC	7,500.00
OneCape Conferences (Venues & AV equipment)	See Narrative	10,000.00	10,000.00	CCC	20,000.00
Workshop & Coastal Conference expenses (Venues & AV equipment; WBNERR)	See Narrative	6,000.00	-		6,000.00
Web Design (APCC)	See Narrative	13,400.00	6,600.00	APCC-MET	20,000.00
TMDL Solutions (SMAST)	See Narrative	3,500.00	-		3,500.00
Dr. Scott Doney	See Narrative	-	12,339.00	WHOI	12,339.00
Total Contractual		52,900.00	36,439.00		89,339.00
TOTAL DIRECT		\$ 330,375	\$ 98,146		\$ 428,521
CCC Indirect Cost (applied to direct labor only)	71.90%	24,863.46	8,287.82		33,151.29
APCC Indirect Cost	10.00%	9,044.38	3,274.42		12,318.80
CCS Indirect Cost (NICRA)	50.31%	4,428.80	3,717.80		8,146.60
SMAST Indirect Cost (NICRA)	59.00%	1,175.40	7,824.47		8,999.87
WBNERR Indirect Cost	10.00%	3,289.47	1,348.07		4,637.55
WHOI Indirect Cost (NICRA)	62.00%	26,822.00	23,066.00		49,888.00
Total Indirect Cost		\$ 69,624	\$ 47,519		\$ 117,142
TOTAL (Total Direct+Indirect)		\$ 399,998	\$ 145,665		\$ 545,663
Non-Federal Match as a Percentage of the Request:			36.42%		

Budget Table cont.

Grant Totals Per Partner

SNEP Watershed Grant Proposal - Grant Totals per Partner					
Project Partners		RAE SNEP Request	Non-Federal Match	Match Source	Total Project Cost
Cape Cod Commission	Direct Costs	91,528	36,676	CCC	\$ 128,204
	Indirect Costs	24,863	8,288	CCC	\$ 33,151
	Total:	116,392	44,964	CCC	\$ 161,356
Association to Preserve Cape Cod	Direct Costs	90,444	32,744	APCC-MET	\$ 123,188
	Indirect Costs	9,044	3,274	APCC-MET	\$ 12,319
	Total:	99,488	36,019	APCC-MET	\$ 135,507
Center for Coastal Studies	Direct Costs	13,286	2,906	CCS	\$ 16,193
	Indirect Costs	4,429	3,718	CCS	\$ 8,147
	Total:	17,715	6,624	CCS	\$ 24,339
Umass Dartmouth SMAST	Direct Costs	15,254	-	-	\$ 15,254
	Indirect Costs	1,175	7,824	SMAST	\$ 9,000
	Total:	16,429	7,824	SMAST	\$ 24,254
Waquoit Bay National Estuarine Research Reserve	Direct Costs	39,395	13,481	WBNERR	\$ 52,875
	Indirect Costs	3,289	1,348	WBNERR	\$ 4,638
	Total:	42,684	14,829	WBNERR	\$ 57,513
Woods Hole Oceanographic Institute	Direct Costs	80,467	12,339	WHOI	\$ 92,806
	Indirect Costs	26,822	23,066	WHOI	\$ 49,888
	Total:	107,289	35,405	WHOI	\$ 142,694
TOTAL:	Direct Cost	330,374	98,146		\$ 428,521
	Indirect Cost	69,624	47,518		\$ 117,142
	TOTAL:	\$ 399,998	\$ 145,665		\$ 545,663

Budget Narrative

Personnel

Cape Cod Commission

Thomas Cambareri, Water Resources Technical Services Director: Mr. Cambareri will assist with identification of water resources data sources, data compilation, identifying data analysis needs, and development of the pilot watershed interpretation (Task 1, Task 2, Task 3). 153 hrs. @ \$49.53/hr., total \$7,578.09.

Mario Carloni, Geospatial Developer: Mr. Carloni will be responsible for the database web interface and integrating the processing script with the SQL database and web interface (Task 4). 364 hrs. @ \$37.18/hr., total \$13,533.52.

Phil Detjens, Applications Manager: Mr. Detjens will oversee database development and management, integration of the processing script into an SQL procedure and creating and editing SQL tables (Task 4). 208 hrs. @ \$44.45/hr., total \$9,245.60.

Erin Perry, Special Projects Manager: Ms. Perry will serve as project lead for the grant and is responsible for oversight of the project, coordinating with project partners and reporting (Tasks 1-6). 364 hrs. @ \$43.27/hr., total \$15,750.28.

CCC will provide match of in-kind labor. Fringe benefits are allocated as a percentage applied to total direct salaries. The audited FY17 fringe rate is 66.36% and is broken out as: Retirement (23.40%), Paid Leave Benefits (23.21%), Health Insurance (18.12%), and Medicare (1.63%).

Association to Preserve Cape Cod

Jo Ann Muramoto, Director of Science Programs: Dr. Muramoto will be responsible for freshwater data compilation and data analysis and she will prepare the report cards (Task 1, Task 4). 500 hrs. @ \$48/hr., total \$24,000.

Don Keeran, Assistant Director: Mr. Keeran will serve in an advisory capacity and provide guidance on data compilation and development of report cards and State of the Waters Report (Task 1, Task 4). 502 hrs. @ \$43.20/hr., total \$21,686.40.

Kristin Andres, Director of Education and Outreach: Ms. Andres will oversee development of outreach products and activities for development and promotion of State of the Waters Annual Report (Task 4, Task 5). 502 hrs. @ \$40/hr., total \$20,080.

Bryan Horsley, Restoration Technician: Mr. Horsley will assist with GIS mapping and other technical assistance (Task 4, Task 5). 416 hrs. at \$32/hr., total, \$13,312.

APCC match is in-kind labor funded by a 2018 Massachusetts Environmental Trust grant.

Waquoit Bay National Estuarine Research Reserve

Outreach and Engagement Assistant: The Outreach and Engagement Assistant will work with and be supervised by Tonna-Marie Rogers, WBNERR Coastal Training Program Coordinator, and will provide support in collaborative process design, meeting planning and facilitation and overall coordination of WBNERR tasks. Working with the project team and the Commission as lead, the assistant will develop process agendas for end user meetings, design effective processes to meet meeting goals and record action items and decisions (Task 2, Task 5). 850 hrs. @ \$25/hr., total \$21,250.

Water Quality Monitoring Assistant: The Water Quality Assistant will be trained by the WBNERR Research Associate, Jordan Mora, to maintain water quality stations, including but not limited to, collecting and filtering water samples, calibrating equipment, deploying units, and managing downloaded data. The assistant will support Ms. Mora with QAPP development through research and writing (Task 1). 206 hrs. @ \$20.12/hr., total \$4,144.72.

Fringe benefits are not included in proposal, as staff identified are not benefit eligible.

Waquoit Bay Watcher volunteer hours are contributed as match. Volunteer hours are associated with the Waquoit Bay Watchers Citizen Science Water Quality Monitoring Program (SWMP). The SWMP and Waquoit Bay Watcher programs are ongoing and all past and future data collected will be submitted to the Cape Cod Commission's regional database (Task 1). 546 hrs. @ \$24.69/hr., total \$13,480.74.

APCC will act as the fiscal agent for WBNERR.

Woods Hole Oceanographic Institution

Jennie Rheuban, Research Associate III: Ms. Rheuban will be responsible for data analysis and development of processing scripts, providing advice and direction on the selection of a pilot watershed and working with the project team on database quality assurance and control and to complete the detailed interpretation in the pilot watershed. Ms. Rheuban will work with Commission staff to integrate the processing script with the existing SQL database (Task 2, Task 3, Task 4). 1,216 hrs. @ 42.625/hr., total \$51,832.

WHOI match is in-kind labor provided by Dr. Scott Doney in the amount of \$12,339 and a WHOI contribution of \$23,066 for indirect costs in excess of 25% of the requested amount. Dr. Doney will advise Ms. Rheuban on data analysis and assist with data interpretation. WHOI's fringe rate is included in their Negotiated Agreement with Department of Navy. Fringe benefits are allocated as percentage to

total assignable salaries and allocated paid leave benefits, excluding overtime salaries. The provisional fringe rate of 45.99% for calendar year 2018 is broken out as: Retirement (23.19%), Health/Dental (11.55%), FICA (7.72%), Workers Comp (0.38%), Disability (1.00%), and Other Benefits (2.15%).

Center for Coastal Studies

Amy Costa, Associate Scientist: Dr. Costa will assist with quality assurance and control of the database and provide advice and guidance on data outputs and analysis needs (Task 1, Task 2). 390 hrs. @ \$34.60/hr., total \$13,494.

CCS match is 70 hours of in-kind labor provided by Dr. Costa and \$3,718 in indirect cost (\$2,256 for indirect cost in excess of 25% of the requested amount and \$1,462 for indirect cost applied to the in-kind labor)

UMass Dartmouth School for Marine Science and Technology

Brian Howes, Coastal Systems Program Director: Dr. Howes will assist with quality assurance and control of the database and provide advice and guidance on data outputs and analysis needs (Task 1, Task 2). 70 hours @ \$68.46/hr., total \$4,792.20.

Roland Samimy, Senior Research Manager: Dr. Samimy will assist with quality assurance and control of the database and provide advice and guidance on data outputs and analysis needs (Task 1, Task 2). 70 hrs. @ \$54.07/hr., total \$3,784.90.

SMAST will provide match of \$7,824 in indirect costs. The fringe rate is broken out as: 34.68% fringe benefit, 1.41% FICA, plus an additional \$16.50 per week Health and Welfare.

Travel

In-State Travel

In-State Travel is budgeted for attendance at project partner meetings, advisory committee meetings, and SNEP grantee meetings. Total budgeted is \$1,090. APCC source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$730.30. APCC's match: \$359.70.

Out-of-State Travel

RAE Summit: As suggested in the RFP, travel is budgeted for four staff to attend the 2018 RAE Summit. An estimate of \$6,000 includes conference registration fees, travel to/from airport, hotel, flight, and meals. APCC source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$5,340. APCC's match: \$660.

Dr. Scott Doney: Travel is budgeted for Dr. Scott Doney to attend annual meetings on project results. Dr. Doney will provide guidance on data analysis and assist with data interpretation (Task 3). The total amount budgeted is \$4,798. This estimate includes travel from the University of Virginia to WHOI, lodging for one week per year for each of the two years of the proposed project, car rental and per diem.

Equipment

Water Quality Monitoring Equipment

WBNERR will purchase monitoring equipment needed to upgrade the WBNERR water quality monitoring program to data standards comparable to other partner organizations (Task 1). Currently, one of the four SWMP stations is still occupied by an older model sonde, the YSI 6600-series. This station will be upgraded consistent with other sites in Waquoit Bay. The equipment request is for a YSI EXO2 sonde in the amount of \$6,500 (Item #599502-01). The purchase will be made in advance of the 2019 sampling season.

Supplies

Software

APCC will purchase software for data analysis, statistical analysis and plotting. An estimate of \$500 is budgeted (Task 3). APCC source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$335. APCC's match: \$165.

Workshop Supplies

APCC plans meetings to announce the State of the Waters report and has included an estimate of \$750 for supplies (Task 5). Source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$502.50. APCC's match: \$247.50.

WBNERR has budgeted \$1,500 in supplies to support end user meetings and watershed-based workshops to translate data to decision-makers (Task 2, Task 5).

Contractual

Database QA/QC

The Commission will advertise and competitively award a contract to a qualified firm to perform quality assurance and control on the existing database and develop procedures for ensuring quality assurance and control on data loaded to the database in the future (Task 1). A budget estimate of \$20,000 is based on previous experience.

QAPP Development

The Commission will comply with State law, County policies and Uniform Guidance related to procurement and competitively award a contract to a qualified firm to develop a QAPP for pond and lake data (Task 1). A budget estimate of \$7,500 is based on previous experience and funds for the QAPP Development will be provided by the Cape Cod Commission.

OneCape Summits

The Commission will hold two OneCape Summits during the project period. The work proposed in this project will be highlighted at each and each will be used as an opportunity to share data outputs, analyses and available information products. A budget estimate of \$20,000 for venue and audio-visual equipment for two conferences is based on previous experience. The Commission will comply with State law, County policies and Uniform Guidance related to procurement and competitively award a contract to a venue to host the Summits. SNEP request: \$10,000. Commission's match: \$10,000.

Cape Coastal Conference and Workshops

Venue rental fees and fees associated with audio visual equipment are anticipated to support watershed-based workshops and other outreach initiatives, including the Cape Coastal Conference, where project outputs, analyses and information products will be highlighted (Task 2, Task 5). An estimate of \$6,000 is budgeted based on previous experience.

Web Design

APCC will comply with State law and Uniform Guidance related to procurement and competitively award a contract to a qualified web design firm to create a State of Waters website (Task 4). A budget estimate of \$20,000 is based on previous experience. APCC source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$13,400. APCC's match: \$6,600.

TMDL Solutions

TMDL Solutions will work with SMAST to support and provide guidance on data analysis and interpretation (Task 2). SNEP request: \$3,500.

Dr. Scott Doney

Dr. Doney will advise Ms. Rheuban and project partners on biogeochemical data analysis and assist with data interpretation (Task 3). \$12,339 in consulting charges is provided as in-kind match by WHOI.

Indirect Cost

Cape Cod Commission

In accordance with 2 CFR Part 200 App. VII D1b, the Commission, a local government agency that receives less than \$35 million in direct Federal funding, is not required to obtain NICRA. The Commission's audited FY17 indirect rate is 71.90% and is applied to direct labor only. CCC indirect costs included in the SNEP request (\$24,863) are within 25% indirect cost limit. This indirect cost rate equals to 27.16% rate if applied to the Commission's Modified Total Direct Costs of \$91,528.

Association to Preserve Cape Cod

Association to Preserve Cape Cod does not have Negotiated Indirect Cost Rate Agreement and de minimis indirect cost rate of 10% was applied to APCC's Modified Total Direct Costs of \$123,188. Total Indirect Cost: \$12,318.80. SNEP Request: \$9,044. APCC's match: \$3,274.

Waquoit Bay National Estuarine Research Reserve

Waquoit Bay National Estuarine Research Reserve does not have Negotiated Indirect Cost Rate Agreement and de minimis indirect cost rate of 10% was applied to WBNERR's Modified Total Direct Costs. Total Direct cost amount of \$52,875 was reduced by the estimated cost of equipment (\$6,500) for Modified Total Direct Costs of \$46,375. Total Indirect Cost: \$4,637. SNEP Request: \$3,289. WBNERR's match: \$1,348.

Woods Hole Oceanographic Institution

Woods Hole Oceanographic Institution has a Negotiated Indirect Cost Rate Agreement with Department of the Navy, Office of Naval Research, dated January 5, 2018, for the period of 1/1/18 – 12/31/18 (attached) The provisional indirect cost rate for 2018 is 62% and is allocated to Modified Total Direct Costs. Total Indirect Costs: \$49,889 (MTDC base of \$80,467). SNEP request: \$26,822 (25% of the agency request of \$107,289). WHOI's match: \$23,066.

Center for Coastal Studies

Center for Coastal Studies has submitted their Indirect Cost Proposal dated November 30, 2017 to the US Department of Commerce, NOAA Grants Division. CCS has received a letter from NOAA, dated January 31, 2018, stating that Center for Coastal Studies may use their indirect cost rate of 50.31% cited in its Indirect Rate Cost Proposal until the Proposal evaluation process is completed (attached). Indirect Cost rate of 50.31% was applied to MTDC of \$16,192.80. Total Indirect Cost: \$8,147. SNEP Request: \$4,429 (25% of the CCS request of \$17,715). CCS's match: 3,718.

UMass Dartmouth School for Marine Science and Technology

UMass Dartmouth has a Negotiated Indirect Cost Rate Agreement with the Department of Health and Human Services, dated March 10, 2017 (attached). The predetermined rate of 59% is effective for the period of 7/1/18 – 6/30/2010 and has been applied to MTDC of \$15,254. UMass Dartmouth SMAST has elected to include only \$1,175.40 of the indirect costs in their SNEP request and to apply the difference towards their match. Total Indirect Cost: \$9,000. SNEP request: \$1,175. UMass Dartmouth SMAST's match: \$7,825.

Total Indirect Costs included in the SNEP request (\$69,624) equal to 17.41% of the total amount of \$399,998 requested from SNEP for the proposed project.

Grant Totals Per Task

	Total Project Cost Per Task			
	Cost Item	SNEP	Non-Federal Match	Total
Task 1	Salaries & Fringes	46,558.28	24,898.39	71,456.68
	RAE Summit	1,001.67	165.00	1,166.67
	In-State Travel	182.58	89.93	272.50
	QA/QC Database	20,000.00	-	20,000.00
	QAPP Development	-	7,500.00	7,500.00
	Equipment	6,500.00	-	6,500.00
	Indirect Cost	10,314.72	8,460.99	18,775.71
Subtotal:		\$ 84,557	\$ 41,114	\$ 125,672
Task 2	Salaries & Fringes	42,847.38	3,601.53	46,448.92
	RAE Summit	666.67	-	666.67
	Workshop Supplies	750.00	-	750.00
	Cape Coastal Conference	2,500.00	-	2,500.00
	Indirect Cost	11,248.60	9,288.09	20,536.68
Subtotal:		\$ 58,013	\$ 12,890	\$ 70,902
Task 3	Salaries & Fringes	64,364.61	4,653.33	69,017.95
	RAE Summit	1,001.67	165.00	1,166.67
	In-State Travel	182.58	89.93	272.50
	Software	335.00	165.00	500.00
	TMDL Solutions	3,500.00	-	3,500.00
	Dr. Scott Donney & Travel	4,798.00	12,339.00	17,137.00
	Indirect Cost	22,022.25	19,109.62	41,131.87
Subtotal:		\$ 96,204	\$ 36,522	\$ 132,726
Task 4	Salaries & Fringes	71,867.10	19,744.97	91,612.07
	RAE Summit	1,001.67	165.00	1,166.67
	In-State Travel	182.58	89.93	272.50
	Web Design	13,400.00	6,600.00	20,000.00
	Indirect Cost	20,145.69	9,154.09	29,299.78
Subtotal:		\$ 106,597	\$ 35,754	\$ 142,351
Task 5	Salaries & Fringes	28,891.78	6,297.26	35,189.04
	RAE Summit	1,001.67	165.00	1,166.67
	In-State Travel	182.58	89.93	272.50
	Workshop Supplies	1,252.50	247.50	1,500.00
	OneCape Conferences	10,000.00	10,000.00	20,000.00
	Cape Coastal Conference	3,500.00	-	3,500.00
	Indirect Cost	4,492.26	1,038.66	5,530.92
Subtotal:		\$ 49,321	\$ 17,838	\$ 67,159
Task 6	Salaries & Fringes	3,239.28	1,079.76	4,319.04
	RAE Summit	666.67	-	666.67
	Indirect Cost	1,400.00	466.67	1,866.67
Subtotal:		\$ 5,306	\$ 1,546	\$ 6,852
TOTAL:		\$ 399,998	\$ 145,665	\$ 545,663

LIST OF ATTACHMENTS

Maps, photos, drawings, and additional information

- Attachment A. Map of Project Area
- Attachment B. Report Card Examples
- Attachment C: Project Team
- Attachment D: Literature Cited

Letters of Commitment

- Association to Preserve Cape Cod
- Buzzards Bay Coalition
- Cape Cod Water Protection Collaborative
- Center for Coastal Studies
- UMass Dartmouth School for Marine Science and Technology
- Waquoit Bay National Estuarine Research Reserve
- Woods Hole Oceanographic Institution

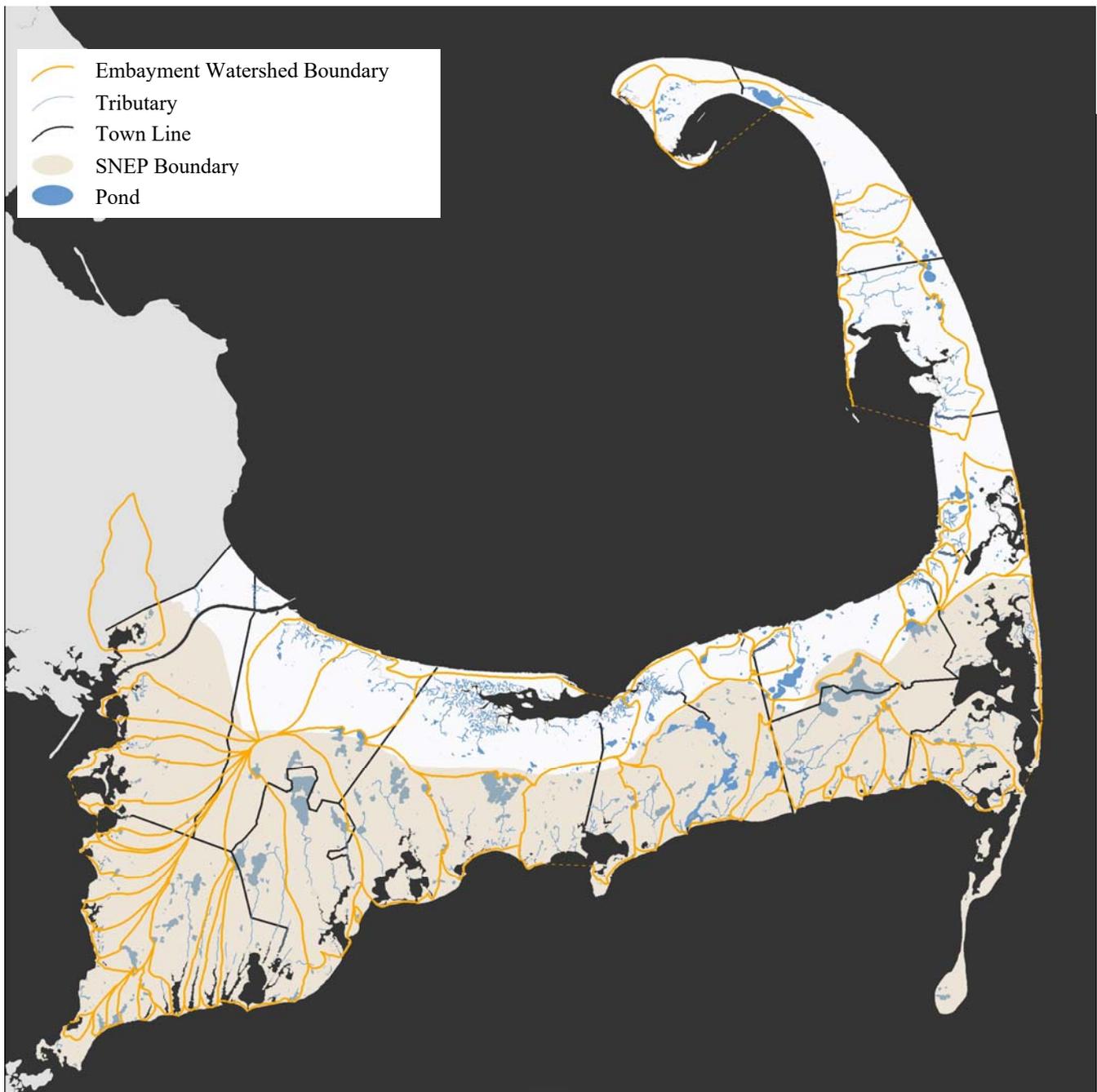
Organizational Budget and Statement of Financial Position

- Barnstable County Approved FY19 Operating and Capital Budget – Cape Cod Commission
- Barnstable County's Basic Financial Statements
 - Summary of Auditor's Results, Schedule of Findings and Questioned Costs
 - Expenditures and Changes in Fund Balances
 - Schedule of Fringe and Indirect Cost Rate – Cape Cod Commission

Negotiated Indirect Cost Rate Agreements

- Center for Coastal Studies
- UMass Dartmouth School for Marine Science and Technology
- Woods Hole Oceanographic Institution

Attachment A: Map of Project Area



Map of Project Area: The proposed project area includes all of Barnstable County. Approximately 60% of Cape Cod is within the SNEP boundary. Almost all the watersheds on Cape Cod that fall within the SNEP boundary are nitrogen impaired and have established total maximum daily loads or Massachusetts Estuaries Project Technical Reports documenting degradation and nitrogen thresholds.

Attachment B: Report Card Examples

California

- Elkhorn Slough National Estuarine Research Reserve. Elkhorn Slough Water Quality Report Card. <http://www.elkhornslough.org/waterquality-reportcard/>.
- California Environmental Protection Agency, State Water Resources Control Board. 2014-2015. https://www.waterboards.ca.gov/about_us/performance_report_1415/plan_assess/11112_tmdl_outcomes.shtml.
- Heal the Bay. Beach Report Cards for California beach water quality. <http://beachreportcard.org/default.aspx?tabid=4>.

Chesapeake Bay

- Chesapeake Bay Report Card. <https://ecoreportcard.org/report-cards/chesapeake-bay> .

Florida

- Florida Department of Environmental Protection. Interactive Water Quality Report Cards. <https://floridadep.gov/dear/watershed-monitoring-section/content/interactive-water-quality-report-cards>

Great Lakes

- Donahue, Michael J. January 2002. The Great Lakes: A Report Card. <https://scholarlycommons.law.case.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1451&context=cuslj>.
- Mills County Watershed Report Card. http://erieconserves.org/wp-content/uploads/mills_report_card.pdf.

Maine

- Natural Resources Council of Maine. 2014 Report Card for Maine. https://www.nrcm.org/wp-content/uploads/2013/09/2014_legislative_reportcard.pdf.

Massachusetts

- Blackstone River Watershed Interactive Water Quality Map. http://zaptheblackstone.org/interactive_map/index.php.
- Environmental Protection Agency, Region 1. 2017. Charles River water quality earns a “B” in 2015. <https://www.epa.gov/newsreleases/charles-river-water-quality-earns-b-grade-2016>.
- Massachusetts Water Resources Authority. 2014. EPA’s annual report card gives the Charles River an A- . <http://www.mwra.com/01news/2014/091114-epa-report-card-charles-river-a-.html>.
- Mystic River Report Card. 2016. <https://mysticriver.org/epa-grade/>.
- Mystic River Watershed Report Card. 2016. 2016 Mystic River Watershed Report Card Frequently Asked Questions. <https://www.epa.gov/mysticriver/2016-mystic-river-watershed-report-card-frequently-asked-questions>.
- Report of the Buzzards Bay Citizens’ Water Quality Monitoring Program 1992-1995. <http://buzzardsbay.org/bbpreports/1996-buzzards-bay-water-quality-monitoring-report.pdf>.
- Save the Harbor/Save the Bay. Annual Beach Water Quality Report Card on the Metropolitan Region’s public beaches. 2017. Report on 2016 beach water quality at 15 public beaches in 10 communities in the Boston area (Lynn, Swampscott, Nahant, Revere, Winthrop, East Boston, South Boston, Dorchester, Quincy and Hull). <http://www.savetheharbor.org/Content/beachesreportcard/>.
- Taunton River Watershed Alliance. 2017. 2016 Water Quality Report Card. <https://savethetaunton.org/2017/02/15/2016-water-quality-report-card/>.

New Hampshire

- New Hampshire Department of Environmental Services. Watershed Report Cards. https://www.des.nh.gov/organization/divisions/water/wmb/swqa/report_cards.htm.

New York

- Long Island Sound Water Report Cards. <https://ecoreportcard.org/report-cards/long-island-sound/>.

Oregon

- City of Portland, Oregon, Watershed Report Card. <https://www.portlandoregon.gov/bes/62109>.
- State of Oregon. Water Quality Index. <http://www.oregon.gov/deq/wq/Pages/WQI.aspx>.
- Willamette River (Oregon) Report Card. <http://www.oregon.gov/deq/wq/Pages/Willamette-River-Report.aspx>.
- Heal the Bays. Beach Report Card for Oregon. <http://beachreportcard.org/?st=OR&f=1>.

Texas

- Mission-Aransas National Estuarine Research Reserve. Little Bay Report Card. <https://missionaransas.org/little-bay-report-card>.

U.S.

- Environmental Working Group. 2017. Clean Water Report Card: Failing Grades. https://static.ewg.org/reports/2000/FailingGrades.pdf?_ga=2.72469146.882043222.1512587101-937361266.1512587101.

Washington State

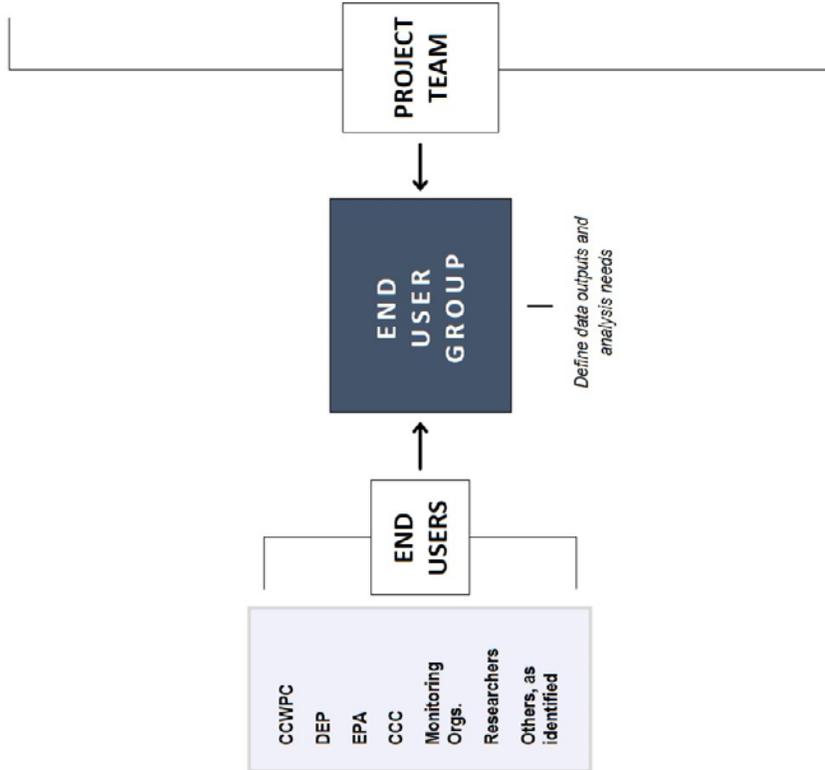
- Pierce County, Washington. 2016 Report Card on Surface Water Health. <https://www.piercecountywa.org/ArchiveCenter/ViewFile/Item/5481>.

International

- World Wildlife Fund. Healthy Rivers for All. <https://www.worldwildlife.org/initiatives/healthy-rivers-for-all>.

Attachment C: Project Team

Woods Hole Oceanographic Institution	<p>Analysis Lead</p> <ul style="list-style-type: none"> Data analysis Processing script development Pilot watershed implementation Integration with database for future analysis and reporting
Waquoit Bay National Estuarine Research Reserve	<p>Collaboration Lead Data and Analysis Advisor</p> <ul style="list-style-type: none"> Provide data Project advisor Quality assurance/control guidance Data analysis advisor Structure collaboration process Facilitate end user meetings
UMass Dartmouth School for Marine Science and Technology	<p>Data and Analysis Advisor</p> <ul style="list-style-type: none"> Provide data Project advisor Quality assurance/control guidance Data analysis advisor
Center for Coastal Studies	<p>Data and Analysis Advisor</p> <ul style="list-style-type: none"> Provide data Project advisor Quality assurance/control guidance Data analysis advisor
Association to Preserve Cape Cod	<p>Information Products Lead</p> <ul style="list-style-type: none"> Integrate water resources data and analyses into information products Create water resources report cards Develop regional State of the Waters report Complete Freshwater data
Cape Cod Commission	<p>Project Lead</p> <ul style="list-style-type: none"> Lead project activities Coordinate tasks and track progress with project partners Database management Lead communication with project partners Data compilation and analysis



AGENDA ITEM 8b

Authorizing the execution of an amendment to a sub-award agreement, executed October 10, 2018, through the Cape Cod Commission, with the Association to Preserve Cape Cod, under the Cape Cod Commission's SNEP Watershed Grant project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" in the amount of \$99,488.00, for a period from October 1, 2018 through July 31, 2020, extending the period of performance through February 28, 2021

AMENDMENT TO SUBAWARD AGREEMENT
BETWEEN

Barnstable County through
Cape Cod Commission
3225 Main Street
Barnstable, MA 02630

and

Association to Preserve Cape Cod
482 Main Street
Dennis, MA 02638

Federal Award Identification Number: 00A00370
Federal Award Date: October 1, 2017
Federal Awarding Agency: U.S. Environmental Protection Agency through Restore America's Estuaries
Subaward Date: September 1, 2018
Subaward to the Cape Cod Commission: \$399,998
Subaward Number: SNEPWG18-9-CCC
CFDA Number/Name: 66.129 – Southeast New England Coastal Watershed Restoration
FFATA Reportable: yes
Research & Development: no

Subaward Start Date: October 1, 2018
Subaward Amount: \$99,488
Subrecipient NICRA: n/a
Subrecipient Match: \$36,019
Subrecipient DUNS: 794871186
Original Subaward Expiration Date: July 31, 2020
Amended Subaward Expiration Date: February 28, 2021

Project Contacts:

Erin Perry, Special Project Manager
eperry@capecodcommission.org
508-744-1236

Gail Coyne, Chief Fiscal Officer
gcoyne@capecodcommission.org
508-744-1202

Subrecipient Project Contacts:

Andrew Gottlieb, Executive Director
agottlieb@apcc.org
508-619-3185

THIS SUBAWARD AGREEMENT (the "Agreement") made the 10th of October, 2018 by and between Barnstable County, acting by and through the Cape Cod Commission (the "Recipient") and the Association to Preserve Cape Cod (the "Subrecipient") so that the Subrecipient may partner with the Recipient in a project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" (the "Project") funded through the Southeast New England Program (SNEP) Watershed Grants, is hereby amendment as follows:

All work in connection with the subaward agreement shall continue until February 28, 2021.

This Amendment does not change any stipulation of the original, previously defined Subaward Agreement.

IN WITNESS WHEREOF, Recipient and Subrecipient have executed this Amendment this _____ day of February in the year two thousand and twenty.

FOR BARNSTABLE COUNTY COMMISSIONERS:

FOR ASSOCIATION TO PRESERVE CAPE COD:

Ron Bergstrom, Chair

Andrew Gottlieb, Executive Director

Mary Pat Flynn, Vice-Chair

Date

Ron Beaty, Commissioner

Date

FOR THE COMMISSION:

Kristy Senatori, Executive Director

Date

SUBAWARD AGREEMENT
BETWEEN

Barnstable County through
Cape Cod Commission
3225 Main Street
Barnstable, MA 02630

and

Association to Preserve Cape Cod
482 Main Street
Dennis, MA 02638

Federal Award Identification Number: 00A00370
Federal Award Date: October 1, 2017
Federal Award Amount: \$7,361,002
Federal Awarding Agency: U.S. Environmental Protection Agency through Restore America's Estuaries
Subaward Date: September 1, 2018
Subaward to the Cape Cod Commission: \$399,998
Subaward Number: SNEPWG18-9-CCC
CFDA Number/Name: 66.129 – Southeast New England Coastal Watershed Restoration
FFATA Reportable: yes
Research & Development: no

Subaward Start Date: October 1, 2018
Subaward Amount: \$99,488
Subrecipient NICRA: n/a
Subrecipient Match: \$36,019
Subrecipient DUNS: 794871186
Subaward Expiration Date: July 31, 2020

Project Contacts:

Erin Perry, Special Project Manager
eperry@capecodcommission.org
508-744-1236

Gail Coyne, Chief Fiscal Officer
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508-744-1202

Subrecipient Project Contacts:

Andrew Gottlieb, Executive Director
agottlieb@apcc.org
508-619-3185

THIS SUBAWARD AGREEMENT (the "Agreement") is being entered into by and between Barnstable County, acting by and through the Cape Cod Commission (the "Recipient") and the Association to Preserve Cape Cod (the "Subrecipient") so that the Subrecipient may partner with the Recipient in a project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" (the "Project") funded through the Southeast New England Program (SNEP) Watershed Grants.

1. Background and Prime Award. U.S. Environmental Protection Agency and Restore America's Estuaries entered into Cooperative Agreement #00A00370 (hereafter referred to as Prime Award) to fund the Southeast New England Watershed Grants Projects. Restore America's Estuaries and the Cape Cod Commission entered into a subrecipient agreement #SNEPWG18-9-CCC to fund the Project. Under the terms of this Agreement, the Recipient awards funds to the Subrecipient for its participation in the Project. Although funds to be provided to the Subrecipient under this Agreement will come ultimately from the U.S. Environmental Protection Agency and Restore America's Estuaries, Subrecipient acknowledges that U.S. Environmental Agency and Restore America's Estuaries are not Parties to this Agreement and have no obligations directly to Subrecipient under this Agreement. Notwithstanding the above, Subrecipient will be subject to and will comply with the terms and conditions contained in the Prime Award which are applicable to the Subrecipient, which are attached hereto as Attachment B and incorporated herein by reference.

2. Scope of Services/Budget. The Subrecipient will perform the scope of services for a maximum subaward of \$99,488 as set forth in Attachment A. The Subrecipient agrees to provide a non-federal match of \$36,019 in project-related costs as described in the budget.

3. Disbursements and Accounting. The Subrecipient will separately account for expenditures made and payments received under this Subaward in its accounting records. The Recipient will not be obligated to pay Subrecipient for any costs not detailed in Attachment A and will be under no obligation to disburse funds to the Subrecipient under the Agreement, except to the extent that funds are disbursed to the Recipient under the Prime Award. Disbursements will be made to Subrecipient on a reimbursement basis no more frequently than quarterly, based upon receipt of a complete and accurate Financial Report for the applicable period. Payments will be sent to Subrecipient via check.

4. Administration: The Subrecipient agrees to comply with the Prime Award Terms and Conditions detailed in Attachment B and with 2 CFR 200 Uniform Guidance.

5. Reporting:

- Performance/Progress Reports – deliverables and progress reports per Attachment A are due 10 days after the quarters ending March 31, June 30, September 30, and December 31. A Final report is due within 30 days of Project completion (no later than August 31, 2020). The Subrecipient should refer to the detailed progress report requirements in Attachment B, Prime Award Conditions and its Attachment 1: Progress Report Requirements and Attachment 2: Final Report Requirements.
Financial Reports – quarterly financial reports are due 10 days after the quarters ending March 31, June 30, September 30, and December 31. Final financial report is due within 30 days of project completion (no later than August 31, 2020). The Subrecipient should refer to the Summary Budget Table reporting requirements also in Attachment B, Prime Award Conditions and its Attachment 1: Progress Report Requirements and Attachment 2: Final Report Requirements.

6. Termination or Suspension of Agreement for Cause. If through any sufficient cause, the Subrecipient or the Recipient fails to fulfill or perform its duties and obligations under this Agreement, or if either party violates or breaches any of the provisions of this Agreement, either party will thereupon have the right to terminate or suspend this Agreement, by giving written notice to the

other party of such termination or suspension and specifying the effective date thereof. Such notice will be given at least fifteen (15) calendar days before such effective date.

7. Termination for Convenience of Recipient. The Recipient will have the right to discontinue the work of the Subrecipient and cancel this Agreement by written notice to the Subrecipient of such termination and specifying the effective date of such termination. In the event of such termination or suspension of this Agreement, the Subrecipient will be entitled to just and equitable compensation for satisfactory work completed, for services performed and for reimbursable expenses necessarily incurred in the performance of this Agreement up to and including the date of termination or suspension.

8. Recordkeeping, Audit, and Inspection of Records. The Subrecipient agrees to maintain books, records, documents and other evidence pertaining to all costs and expenses incurred and revenues acquired under this Subaward (collectively "Records") to the extent and in such detail as will properly reflect all costs and expenses for which reimbursement is claimed. The Records will be maintained in accordance with 2 CFR 200.333. As may be requested, the Subrecipient will provide timely and unrestricted access to its books and accounts, files and other Records with respect to the Project for inspection, review and audit by the Recipient, Restore America's Estuaries, U.S. Environmental Protection Agency and their authorized representatives. Upon inspection, review or audit, if the Recipient, Restore America's Estuaries, or U.S. Environmental Protection Agency disallows any costs claimed by the Subrecipient related to this Agreement, the Subrecipient will be responsible for reimbursing the Commission for any of those costs.

If the Subrecipient has a single audit performed in accordance with Uniform Guidance, the Subrecipient must electronically submit (within the earlier of 30 calendar days after receipt of the auditor's report, or nine months after the end of the audit period) to the Federal Audit Clearinghouse (FAC) the data collection form and the reporting package. The collection form must be obtained from the FAC webpage. The reporting package must include the Financial Statements and Schedule of Expenditures of Federal awards, the summary schedule of prior audit findings, the auditors reports and a corrective action plan. If the Subrecipient does not submit the form and package within the required timeframe, the Recipient may perform additional monitoring of the award.

9. Title to and Use of Work Products and Data. Except to the extent otherwise provided in the Prime Award, all completed work products funded by this Agreement are in the public domain, free of copyright or other intellectual property protections.

10. Announcements and Acknowledgments. All public announcements or news stories concerning the Project will be subject to the prior approval of the Recipient and will indicate the participation of the Recipient, SNEP, Restore America's Estuaries, and U.S. Environmental Protection Agency in the funding of the Project.

11. Liability and Indemnification. The work done by or for the Subrecipient under this Agreement will be performed entirely at the risk of Subrecipient. The Subrecipient will be solely responsible for the payment of any and all claims with respect to, any loss, personal injury, death, property damage, or otherwise, arising out of any act or omission of its employees or agents in connection with the performance of its work, and Subrecipient will indemnify and defend the Recipient, Restore America's Estuaries, and U.S. Environmental Protection Agency, and each of its officers, directors, employees, and agents (in each case, an "Indemnified Party") against, and shall hold each Indemnified Party harmless of and from, any and all claims, liabilities, losses, costs, damages, and other expenses of any kind or nature whatsoever (including, but not limited to, attorneys' fees and expenses, as well as costs of suit, which any Indemnified Party may incur as a result of or in connection with the Project, or which may cause the Commission to be in default under the Prime Award.

12. Choice of Law. This Agreement will be construed under and governed by the laws of the Commonwealth of Massachusetts. The Subrecipient and the agents thereof, agree to bring any federal or state legal proceedings arising under this Agreement, in which the Commission is a party, in a court of competent jurisdiction within the Commonwealth of Massachusetts. This paragraph will not be construed to limit any rights a party may have to intervene in any action, wherever pending, in which the other is a party.

13. Force Majeure. Neither party will be liable to the other nor be deemed to be in breach of this Agreement for failure or delay in rendering performance arising out of causes factually beyond its control and without its fault or negligence. Such causes may include but are not limited to: acts of God or the public enemy, wars, fires, floods, epidemics, strikes, or unusually severe weather. Dates or times of performance will be extended to the extent of delays excused by this section, provided that the party whose performance is affected notifies the other promptly of the existence and nature of such delay.

14. Compliance with Laws. The Subrecipient will promptly comply with all applicable laws, rules, regulations, ordinances, orders and requirements of the Commonwealth and any state or federal governmental authority relating to the delivery of the services described in this Agreement.

15. Headings, Interpretation and Severability. The headings used herein are for reference and convenience only and will not be a factor in the interpretation of the Agreement. If any provision of this Agreement is declared or found to be illegal, unenforceable, or void, then both parties will be relieved of all obligations under that provision. The remainder of the Agreement will be enforced to the fullest extent permitted by law.

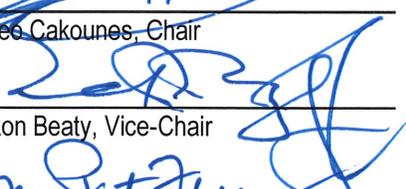
IN WITNESS WHEREOF, Recipient and Subrecipient have executed this Agreement this 10th day of October in the year two thousand and eighteen.

FOR BARNSTABLE COUNTY COMMISSIONERS:

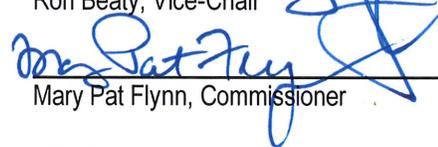
FOR ASSOCIATION TO PRESERVE CAPE COD:



Leo Cakounes, Chair



Ron Beaty, Vice-Chair



Mary Pat Flynn, Commissioner



Andrew Gottlieb, Executive Director

10/2/18

Date

10-10-18

Date

FOR THE COMMISSION:



Kristy Senatori, Executive Director

10/3/2018

Date

ATTACHMENT A SCOPE OF WORK/DELIVERABLES/BUDGET

TASKS

APCC staff will work with Cape Cod Commission staff and other project partners to complete tasks associated with the project titled "Regional Collection and Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making". Project tasks include:

- Task 1: Data integration, quality assurance and control
- Task 2: Collaboration with end users and pilot project
- Task 3: Data analysis and development of a processing script
- Task 4: Integration with web-based user interface and other information products
- Task 5: Targeted outreach to inform local action
- Task 6: Final report

APCC staff will work with the project team on tasks associated with expanding upon existing freshwater databases and integrating estuarine and freshwater data and analyses into information products to increase knowledge and understanding of the health of water resources.

The following work will be completed by APCC staff (in parenthesis is the project task each is associated with):

- Working with the project partners and consultants to develop and agree upon quality assurance and control procedures for both historic and future water quality data (Task 1)
- Working with Commission staff to inventory and compile freshwater data for integration into the water quality database (Task 1)
- Working with Commission staff to develop a Quality Assurance Project Plan (QAPP) for lakes and ponds data (Task 1)
- Coordinating with project partners during regularly scheduled project team meetings (Task 2)
- Attending and participating in End User Group meetings on an approximately quarterly basis (Task 2)
- Attending and participating in up to two workshops with a pilot watershed group (Task 2)
- Working with project partners and an End User Group to define the metrics needed to inform local water quality planning (Task 2 and Task 3)
- Working with Commission staff and project partners to analyze freshwater data included in the water quality database, consistent with the metrics identified (Task 3)
- Developing water resources report cards that provide letter grades for water quality of lakes, rivers, estuaries and coastal waters, groundwater, drinking water and watersheds (Task 4)
- Developing the State of the Waters: Cape Cod report (Task 4)

DELIVERABLES

- Inventory of freshwater quality data
- Compiled historical freshwater quality data
- Water resources report cards
- State of the Waters: Cape Cod report

TIMELINE

The project timeline is as follows:

	2018			2019												2020							
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Task 1																							
Data Compilation																							
Database QA/QC																							
WBNERR QAPP Development																							
Ponds and Lakes QAPP Development																							
Task 2																							
End User Group Mtgs																							
Monitoring Group Workshop																							
Identify Data Outputs/Analysis Needs																							
Pilot Watershed Interpretation																							
Identify Monitoring/Research Gaps																							
Task 3																							
Data Analysis/Script Development																							
Pilot Watershed Analysis/Interpretation																							
Task 4																							
Development of Report Card Template																							
Report Cards Released																							
"State of the Waters: Cape Cod" Released																							
Integrate Script with Database/Website																							
Task 5																							
Develop Targeted Outreach Schedule																							
Targeted Outreach/Workshops/Meetings																							
Task 6																							
Final Report																							

To maintain the proposed timeline and achieve associated milestones, APCC deliverables should be delivered no later than the following:

- Inventory of freshwater quality data – November 30, 2018
- Compiled historical freshwater quality data – January 11, 2019
- Water resources report cards – annually by May 31
- State of the Waters: Cape Cod report – August 30, 2020

APCC - SNEP Watershed Grant Budget					
Cost Item or Category	Cost Basis	RAE SNEP Request	Non-Federal Match	Match Source	Total Project Cost
Personnel					
Jo Ann Muramoto	500 hrs. @ \$48.00	18,000.00	6,000.00	APCC-MET	24,000.00
Don Keeran	502 hrs. @ \$43.20	16,264.80	5,421.60	APCC-MET	21,686.40
Kristin Andres	502 hrs. @ \$40.00	15,060.00	5,020.00	APCC-MET	20,080.00
Brian Horsley	416 hrs. @ \$32.00	9,984.00	3,328.00	APCC-MET	13,312.00
Total Personnel		59,308.80	19,769.60		79,078.40
Fringe					
Fringe, CCC					
Fringe, APCC	25%	14,827.20	4,942.40	APCC-MET	19,769.60
Fringe, BBC					
Fringe, PCCS					
Fringe, SMAST					
Fringe, WBNERR					
Fringe, WHOI					-
Total Fringe		14,827.20	4,942.40		19,769.60
Travel					
In-state travel	2,000 miles x \$.545	730.30	359.70		1,090.00
Out-of-state travel (RAE Summit 2018)	Estimate	1,340.00	660.00		2,000.00
					-
Total travel		2,070.30	1,019.70		3,090.00
Equipment					
					-
Total Equipment		-	-		-
Supplies					
Office Supplies	Estimate	502.50	247.50		750.00
Software	Estimate	335.00	165.00		500.00
Total Supplies		837.50	412.50		1,250.00
Contractual					
QAQC Database					-
web design	Estimate	13,400.00	6,600.00		20,000.00
Total Contractual		13,400.00	6,600.00		20,000.00
					-
TOTAL DIRECT		\$ 90,443.80	\$ 32,744.20		\$ 123,188.00
Modified Total Direct Costs		90,443.80	32,744.20		123,188.00
Indirect 10% of MTDC	10%	9,044.38	3,274.42		12,318.80
TOTAL (Total Direct + 10%MTDC)		\$ 99,488	\$ 36,019		\$ 135,507
Match rate:			36.20%		



2018 SNEP WATERSHED GRANTS

Subrecipient Agreement Between Restore America's Estuaries and Cape Cod Commission (Barnstable County)

September 1, 2018 – September 30, 2020

Contract #SNEPWG18-9-CCC

Points of Contact

For Restore America's Estuaries:

Thomas Ardito
401-575-6109
tardito@estuaries.org
P.O. Box 476, Saunderstown, RI 02874

For Cape Cod Commission (Barnstable County):

Erin Perry, Special Projects Manager
3225 Main St., Barnstable, MA 02630
508-744-1236
eperry@capecodcommission.org

This constitutes an agreement between Restore America's Estuaries (RAE or the Recipient) and Cape Cod Commission (Barnstable County) (CCC or the Subrecipient), regarding the responsibilities of each in their roles as Recipient and Subrecipient under the 2018 round of Southeast New England Program (SNEP) Watershed Grants, **EPA FAIN Grant #00A00370**, and its amendments and supplements.

1. Contract Documents: Contract documents shall consist of this agreement and the following attachments, all of which are incorporated by reference into this agreement.

Attachment 1: Progress Report Requirements

Attachment 2: Final Report Requirements

Attachment 3: Project workplan and budget.

2. Services: CCC agrees to perform services as described in the scope and budget provided in Attachment 3 of this agreement (hereinafter the “Project.”)

3. Contract Amount: Restore America’s Estuaries agrees to make available \$399,998 for use by CCC for the contract period. CCC agrees to expend this money in conformity with the scope and budget in Attachment 3 (the Project.) CCC agrees to provide \$145,665 in Project-related matching costs as described in the budget. Matching funds must be from non-federal sources and must be expended during the period of this agreement.

4. Contract Period: This agreement covers the period **September 1, 2018 through September 30, 2020**. Work shall be completed and all reimbursable expenses incurred by **August 31, 2020**.

5. Alterations: Any alterations in the scope of the work performed shall be submitted by the Subrecipient in writing to RAE, and must be approved in advance in writing by RAE. Cumulative transfers of funds among approved direct cost categories that exceed 10% of the total award must be approved by RAE in writing in advance.

For Subrecipients with a current Negotiated Indirect Cost Rate Agreement (NICRA) on file with a federal agency, amended budgets must maintain consistency with the NICRA and the requirements of the 2018 SNEP Watershed Grants Request for Proposals (RFP). For these Subrecipients, indirect costs may not exceed 25% of the award amount.

For Subrecipients without a current NICRA, amended budgets must maintain consistency with the requirements of the 2018 SNEP Watershed Grants RFP, and may not exceed 10% of Modified Total Direct Costs as described in the RFP.

6. Progress & Final Reports: The Subrecipient agrees to submit progress reports twice yearly, and a final report upon completion of the Project, according to the following schedule:

Report	Period Covered	Due Date
Progress #1	Sep. 1, 2018 – Dec. 31, 2018	Jan. 31, 2019
Progress #2	Jan. 1, 2019 – Jun. 30, 2019	Jul. 31, 2019
Progress #3	Jul. 1, 2019 – Dec. 31, 2019	Jan. 31, 2020
Progress #4	Jan. 1, 2020 – Jun. 30, 2020	Jul. 31, 2020
Final Report	Entire Project period (completion no later than Aug. 31, 2020)	30 days following completion of Project and no later than Sept. 30, 2020.

Progress and final reports will reference the goals and objectives included in Attachment 3 and indicate the progress that has been made toward each during the reporting period. Subrecipient agrees to prepare and submit progress and final reports as described above and in Attachments 1 & 2. RAE reserves the right to withhold payments if the Subrecipient has not submitted the reports on schedule or if reports are unsatisfactory in meeting the requirements of this agreement. See Attachments 1 & 2 for more information on reporting formats.

Final reports should be geared toward an audience broader than simply RAE – in other words, it should be designed to communicate Project outcomes and results in a meaningful way to end users, stakeholders and others who may be able to learn from or take advantage of, or learn from Project outcomes and results. In all cases the final report should include an executive summary providing a brief but complete overview of Project outcomes and results, as specified in Attachment 1. In the event that the final report is intended for a technical audience, the executive summary should be written for a general audience and suitable for such purposes as reporting to funding agencies, elected officials, general-interest media outlets, etc. See Attachment 2 for more information.

Be sure to take plenty of high-resolution photographs throughout the course of the Project for use in progress reporting and, most importantly, the final report and executive summary. See Attachments 1 & 2 for more information.

7. Collaboration and Communication: SNEP Watershed Grants Program supports the Southeast New England Program (SNEP), an initiative of the U.S. Environmental Protection Agency (EPA), Region 1. The mission of SNEP is to:

Foster collaboration among regional partners across southeast New England’s coastal watersheds to protect and restore water quality, ecological health and diverse habitats by sharing knowledge and resources, promoting innovative approaches, and leveraging economic and environmental investments to meet the needs of current and future generations.

More information about SNEP is available at

<https://www.epa.gov/snecwrp>

Strong local and regional partnerships are essential in carrying out the mission of SNEP. Subrecipient agrees to participate in SNEP through at least two workshops or conferences over the course of the Project.

Subrecipient agrees to acknowledge SNEP and RAE in communications with the media, the public, and elected officials about the Project, including all publications, work products, academic and general publications, videos, signage, press releases, etc. Signs, printed reports and similar materials should include the SNEP logo where practicable. Subrecipients may download high-resolution digital files of the SNEP logo at www.snepgrants.org.

Example acknowledgement language:

[Project name] is supported by the Southeast New England Program (SNEP) Watershed Grants. SNEP Watershed Grants are funded by the U.S. Environmental Protection Agency (EPA) through a collaboration with Restore America's Estuaries (RAE). For more on SNEP Watershed Grants, see www.snepgrants.org

Subrecipient will coordinate with RAE on outreach plans, events, products, and media coverage associated with the Project, so that RAE may assist with the development of outreach communications and messaging. Subrecipient should provide drafts of any outreach plans to RAE staff for review and input. In particular, all press releases should be shared with RAE in draft at least one week in advance of release to allow RAE the opportunity to provide comments, and a quote if requested.

Subrecipient agrees to provide copies of final outreach products, website mentions, press materials, photos, etc. via the standard progress reports to RAE, or when available throughout the award period.

Subrecipient will provide RAE with high-resolution before, during, and post-implementation photos of the Project. Photos of Project sites prior to construction and during Project implementation should be submitted with progress reporting or as requested by RAE.

Subrecipient will notify RAE of all significant Project-related meetings and events (Project team meetings, public meetings, public hearings and presentations, press events, commencement of construction, ribbon-cuttings, etc.) at least one week prior to the event.

SNEP Watershed Grants are federal funds. RAE will assume, therefore, that all completed work products funded by SNEP are in the public domain, free of copyright or other intellectual property protections, unless covered by another applicable agreement or requirement (e.g., university intellectual property policies). In the event that Project work

products are subject to other intellectual property requirements, the Subrecipient shall inform RAE of such requirements ***prior to signature*** of this grant.

Project implementation sites (e.g., best management practice (BMP) installations, construction areas, etc.) must display, where appropriate and practicable, a permanent sign indicating that the Project has received funding through the U.S. Environmental Protection Agency, Southeast New England Program, and Restore America's Estuaries, and including the SNEP logo. Signage should also identify other contributing partners.

8. Permits & Compliance: Subrecipient will ensure that implementation of the Project meets all federal, state and local environmental laws and consistency requirements, including EPA Quality Assurance Project Plan (QAPP) requirements.

9. Invoices: Subrecipient will invoice RAE at least quarterly and at most monthly for reimbursable Project expenses. Generally, payment of approved expenses will be by reimbursement by RAE; however, the Subrecipient may request advance payment if necessary.

In the event that advance funds are needed, requests should be made at least one month prior to the anticipated need for the funds.

Invoices must follow the following format:

- The invoice must be on organization letterhead.
- Reference the contract number.
- Include date of invoice and period covered.
- List the total amount of expenses and match incurred during the invoice period by approved grant budget categories, as contained in the line item budget in Attachment 3.
- Indicate the amount of cumulative expenses and match from the beginning of the budget period and the balance still available. This information should also be listed by approved grant budget categories, as contained in the line item budget in Attachment 3.
- Include a general description of work performed or costs incurred.
- List the Project task that the requested amount applies to. If the requested remittance amount applies to two or more Project tasks, the invoice must list the amount that will be applied to each.
- Cash and in-kind matching funds should be listed separately, and the source of all match identified.
- Include organization name, mailing address for payment, and any cost codes that should be included on the check.
- Invoices must be signed by an authorized representative of the organization.

Submit invoices in PDF format to:

snepgrants@estuaries.org

Note: Variances among approved direct cost categories that cumulatively exceed 10% of the total award must be approved by RAE in advance in writing.

10. Financial Records: Subrecipient agrees to maintain accurate records of all costs incurred in the performance of this work, including matching funds, and agrees to allow Restore America’s Estuaries, EPA, and their duly authorized representatives reasonable access to their records to verify the validity of expenses reimbursed under this agreement. Subrecipient agrees to maintain financial records, supporting documents and other records pertaining to this agreement for a period of three (3) years from the termination date of this agreement.

To comply with federal regulations, Subrecipient agrees to maintain a financial management system that provides accurate, current and complete disclosure of the financial status of the subaward. This means the financial system must be capable of generating regular financial status reports which indicate the dollar amount allocated for the award (including any budget revisions), the amount obligated, and the amount expended for each activity. The system must permit the comparison of actual expenditures and revenues against budgeted amounts.

Accounting records must be supported by source documentation. Invoices, bills of lading, purchase vouchers, payrolls and the like must be secured and retained for three (3) years in order to show for what purpose funds were spent. Payments should not be made without invoices and vouchers physically in hand. All vouchers and invoices should be on vendors' letterheads.

All employees paid in whole or in part from funds provided under this agreement must prepare a time sheet indicating the hours worked for each pay period. Personnel activity reports (i.e. timesheets) reflect an after-the-fact determination of the actual activity of each employee charging time to the agreement and must reflect all time spent by an employee and be signed by the employee or a supervisor. “Timesheets” are required only for those employees charging time to the Project, and then must reflect all time spent by the employee.

Subrecipient should keep records, based on these time sheets and the hourly payroll costs for each employee, indicating the distribution of payroll charges.

Subrecipient must maintain in its records documentation of non-federal Project-related matching costs in the amount specified in the budget under Attachment 3. Subrecipient agrees to adhere to federal rules and guidelines governing documentation and acceptability of Project-related matching costs.

Matching Contributions, whether in the form of cash, goods and services, or property, must be:

- 1) Non-federal in nature (Federally appropriated or managed funds are ineligible.);
- 2) Utilized for work in support of the Project;
- 3) Expended within the timeframe of this contract; and,

4) Voluntary in nature (Funds presented for fulfillment of mitigation, restitution, or other permit or court-ordered settlements are not eligible.). Subrecipients must document and maintain all records of matching contributions.

11. Audits: RAE reserves the right to audit some or all of the Project costs, expenses, payments, etc., either formally or informally, as the Project proceeds and/or upon completion.

In the event that the Subrecipient's total expenditures under federal awards exceed \$750,000 in a fiscal year, an audit meeting the requirements of 2 CFR 200 is required. It is the Subrecipient's responsibility to contract for this audit and to submit a copy to RAE no later than thirteen months after the close of the fiscal year to which the audit pertains, for fiscal years that fall in whole or in part within the period of this agreement. If an audit discloses findings or recommendations, Subrecipient agrees to include with the audit report a corrective action plan containing the following:

- The name and number of the person responsible for the corrective action plan.
- Specific steps to be taken to comply with the recommendations.
- A timetable for performance and/or implementation dates for each recommendation.
- Descriptions of monitoring to be conducted to ensure implementation.

In the event that the Subrecipient completes any other routine or required audits during the period of this grant (for example, an annual independent audit), the Subrecipient will inform RAE of the availability of the audit within 30 days of completion, and will provide RAE with a copy of the audit *if requested by RAE*.

12. Allowable and Unallowable Costs: SNEP Watershed Grants are federal funds. Subrecipient agrees to follow federal regulations as put forth in 2 CFR 200 and applicable OMB Circulars in determining allowable costs under this agreement. Subrecipient agrees not to use funds provided under this agreement for any cost that is unallowable under these regulations. Reimbursement by RAE for any cost that is later determined to be unallowable does not constitute sanction by RAE for the unallowable use of these funds.

13. Indemnification: The Subrecipient agrees to indemnify RAE against all losses for expenses incurred by the Subrecipient that are, or are later held to be, unallowable. Reimbursement by RAE to the Subrecipient for such costs does not negate nor in any way nullify the Subrecipient's responsibility under this provision.

As the direct Recipient of funds under this Award, RAE is responsible for the management of the award and is ultimately responsible for ensuring compliance with all federal requirements. The Subrecipient will cooperate with RAE in achieving compliance with the specific terms and conditions of the award, as well as the other terms and conditions specified in this agreement.

14. Project Data and Results: Sharing of Project data and results, including environmental data and analysis, is a SNEP priority. All information collected and/or created under this grant/cooperative agreement will be made visible, accessible and independently understandable to users in a timely manner (typically no later than one (1) year after the data are collected or created) free of charge or at minimal cost that is no more than the cost of distribution to the user.

Project results will similarly be made available in a timely manner, typically via the final report described above and in Attachment 2.

15. Signatures

For Restore America's Estuaries

By:  _____
Jeff Benoit, President & CEO

Date: 9-4-18

For Cape Cod Commission (Barnstable County):

By:  _____
Name & Title: Leo Cakounes, Ron Beaty, Mary Pat Flynn,
Barnstable County Commissioners

Date: 09/12/18

Attachments

- Attachment 1: Progress Report Requirements
- Attachment 2: Final Report Requirements
- Attachment 3: Project workplan and budget.



2018 SNEP WATERSHED GRANTS Subrecipient Agreement

Attachment 1: Progress Report Requirements

General Instructions

The Progress Report consists of:

1. Cover Information;
2. Project Report Narrative;
3. Project Budget Report;
4. Supporting Materials;
5. Certification.

Progress reports shall be completed and returned within one month of the end of a reporting period, using the following calendar:

Report	Period Covered	Due Date
Progress #1	Sep. 1, 2018 – Dec. 31, 2018	Jan. 31, 2019
Progress #2	Jan. 1, 2019 – Jun. 30, 2019	Jul. 31, 2019
Progress #3	Jul. 1, 2019 – Dec. 31, 2019	Jan. 31, 2020
Progress #4	Jan. 1, 2020 – Jun. 30, 2020	Jul. 31, 2020
Final Report	Entire Project period (completion no later than Aug. 31, 2020)	30 days following completion of Project and no later than Sept. 30, 2020.

If there was no Project activity during the period, a report should still be filed, explaining why there was no activity. Please use the template attached to these instructions to complete the progress report. The report should be submitted via email in PDF format to:

snepgrants@estuaries.org

The form may be signed electronically.

The following pages provide a template and instructions for progress reports. Use this format.

(Attach. 1 Cont'd)

**SNEP Watershed Grants
Progress Report Template**
Annotated with Instructions

1. Cover Information

Date

Project Name

Contract Number (SNEPWG18-###)

Grant Period (for entire Project)

Grantee Organization

Report Contact Person, with telephone & email

Project Leader (if different)

Reporting Period

Report Type and Number (e.g., Progress #2)

2. Project Report Narrative

Summarize the Project activities undertaken during the current reporting period within the following headings, building upon the narrative from previous reports, if any.

2.A. Results & Progress to Date

Describe in sufficient detail the goals of the Project, and the progress and results achieved during the current reporting period, building on the narrative from previous reports, if any.

Report accomplishments or setbacks on specific tasks as described in the scope of work, Attachment 3. This should include information such as:

- problems that the Project is addressing;
- short and long term objectives, and how they are being or have been met;
- relevance of the Project to restoring and protecting coastal and watershed ecosystems in the Southeast New England Region;
- activities carried out in this reporting period, including specific techniques and materials used;
- deliverables or milestones completed or partially completed during the reporting period (if partially completed, describe current status, percentage completion, etc.);
- findings to date or lessons learned during this reporting period;

- challenges or potential roadblocks to future progress (Note: If you have immediate concerns about the Project, please contact RAE to discuss the issue as soon as possible.)

2.B. Work Remaining Under Current Contract

Describe in sufficient detail the activities remaining and next steps to be completed under the current contract. Provide an updated timeline of major Project tasks, as applicable.

2.C. Compliance

Describe the status of Quality Assurance Project Plan (QAPP) completion, submittal and approval. List any permits required for the Project, and their status (e.g., not yet applied for, submitted and under review, approved on [date], etc.).

2.D. Project Partners

List major Project partners, and briefly note their contributions.

2.E. Volunteer and Community Involvement

Describe community support and any public involvement in the Project, including the specific roles of volunteers in Project activities. List the number of volunteers and hours that were contributed during this period. If volunteer time is being used as match, report this in the budget section, described below.

2.F. Outreach & Communications

Describe any outreach or educational activities (e.g. training, brochures, videos, press releases or public events) related to the Project. **Include PDF copies of press releases, outreach documents, newspaper articles, etc. as described under “Supporting Materials,” below.**

3. Project Budget Report

The budget report must provide sufficient information and detail to explain Project expenses, for the reporting period *and* cumulative-to-date, in the context of the objectives, tasks, and categories provided in the Project narrative and budget under Attachment 3. The budget report should be organized so that a reviewer can easily judge whether expenditures to date for the Project are tracking well with progress toward objectives and, if not, to understand why.

3.A. Summary Budget Table

Provide a summary budget table to show overall expenditures and match during the reporting period and cumulative-to-date, using the following format. Be sure to fully document match and match sources.

Summary Budget Table

	Budget Category	Total Budgeted Funds	Total Budgeted Match	Grant Funds Expended this period	Grant Funds Expended Cumulative	Match Funds Expended this period	Match Funds Expended Cumulative	Match Source
a	Personnel							
b	Fringe							
c	Travel							
d	Equipment							
e	Supplies							
f	Contractual							
g	Other							
h	Total Direct							
i	Indirect							
j	Total							

3.B. Detailed Project Budget Table

The centerpiece of the Project budget report is a budget table or tables utilizing the same cost categories and level of detail as the Project budget under Attachment 3. Report expenditures by category and, if applicable, task. Where a category is very broad, provide sufficient breakdown detail – for example, where “personnel” covers a number of individuals, show expenses for each individual; under “subcontracts” show expenses for each subcontract, etc. The table need only describe expenditures during the reporting period, rather than cumulatively. Add additional tables if need be to provide sufficient detail, or to summarize costs by task. **Where additional tables are used, ensure that the reviewer can easily understand how they relate to one another and the summary budget table.**

3.C. Budget Narrative

Use a budget narrative, keyed to the budget tables where necessary, to provide sufficient detail on expenditures and match. The budget narrative in the report may follow the format of the budget narrative in the Project budget under Attachment 3. Be sure to explain any deviations from the approved budget. The Subrecipient Agreement details requirements for prior approval for changes to Project budgets.

4. Supporting Materials

Include high-resolution digital copies, using PDF format for documents and JPG or TIFF format for images, of supporting materials related to the Project, including:

- Project maps and drawings;
- Technical memoranda, data analyses and modeling reports;
- Project photographs, including photos depicting implementation sites before, during, and after implementation; photos of Project signs, etc.;
- Press releases, news articles, brochures, educational curricula, etc.

In the event that file sizes for supporting materials are too large to attach, contact RAE to set up a shared cloud file.

5. Certification

Include this language: *The undersigned verifies that the descriptions of activities and expenditures in this progress report are accurate to the best of my knowledge; and that the activities were conducted in agreement with the grant contract. I also understand that matching fund levels established in the grant contract must be met.*

Grantee Signature:

Name:

Job Title

Date:

Organization:



2018 SNEP WATERSHED GRANTS Subrecipient Agreement

Attachment 2: Final Report Requirements

General Instructions

The Project final report follows the same format as interim progress reports, with several important differences:

- The final report covers the Project from beginning to end, describing the entire course of the Project, and presenting all expenditures and results;
- It includes lessons learned from the vantage point of the completed Project;
- It provides greater detail on both process and outcomes; and
- It includes an executive summary written for a general or general professional audience (more on this below).

The Final Report consists of:

0. Executive Summary;
1. Cover Information;
2. Project Report Narrative;
3. Project Budget Report;
4. Supporting Materials;
5. Certification.

The Final Report covers the entire Project period (completion no later than Aug. 31, 2020) and must be submitted within 30 days following completion of the Project (no later than Sept. 30, 2020.)

The report should be submitted via email in PDF format to:

snepgrants@estuaries.org

The form may be signed electronically.

The following pages provide a template and instructions for final reports. Use this format.

(Attach. 2 Cont'd)

**SNEP Watershed Grants
Final Report Template**
Annotated with Instructions

O. Executive Summary

The executive summary (ES) is most easily completed after the rest of the final report has been written; however, it is an essential component of the report and should not be treated as an afterthought. Communication, collaboration, learning and technology transfer are fundamental to the mission of the Southeast New England Program (SNEP). The executive summary will be a principal means by which outcomes of the Project are communicated; therefore, it should adhere to the following guidelines:

- The executive summary should be written and formatted so it can be used as a stand-alone report. It should make sense to a reader with no prior knowledge of the Project, and should be fully understandable independent of the rest of the final report or any other Project information or documentation.
- Follow the format and utilize the headings for the full final report (listed below), providing complete information on the Project, including a summary of costs and match.
- The ES should include its own title or cover page so that it can be easily separated from the rest of the report. This may be a general, illustrated cover for the entire report that doubles as a cover for the ES.
- Consider your audience. You may choose to write for a general audience – for example, all adult residents of a particular municipality. Or, you may gear the ES toward a more professional audience – for example, water resources managers throughout the SNEP region. In every case, however, it should be written for a broader audience than simply the Project team and grant managers. If it is written for a more technical audience, it should still be written in such a way that an informed general reader – for example, a newspaper reporter – can make sense of it. If you use acronyms or technical terms, for example, provide a glossary if need be to define them.
- Communicate the story of the Project. The reader should understand, not just what you did, but why you did it – why it is important, and how it will positively affect ecosystems and communities in Southeast New England. If it pertains to a specific resource, thoroughly describe its impact on that resource, and also explain its broader impact. For example, for a Project that restores water quality, the ES should describe the specific parameters of that restoration, but should also discuss the importance of the improvement to the community, such as beach use, shellfishing or the local tourism economy, and describe the area (watershed, estuary, community, etc.) affected by the work.

- Use images to help tell that story. The ES should include the best and most informative maps, photos or other images from among the supplemental materials (Section 4, below). At the very least, the ES should include a map of the Project area and some high-resolution photos of the Project area, community meetings, construction work if any, researchers performing sampling, etc. The ES should include enough images to convey the outcomes of the Project while maintaining an easily readable summary and convenient digital file size.
- Include an overview of Project costs and match. Describe volunteer participation.
- In general, the ES should be about 3-5 pages of text, and 5-10 pages complete with images.
- The ES must prominently acknowledge SNEP support of the Project. Suggested language for this acknowledgement is provided in the subrecipient agreement.

1. Cover Information

The cover information for the final report is identical to that for a progress report, except that the reporting period is the entire (actual) grant period, as follows:

Project Name
 Contract Number (SNEPWG18-###)
 Grant and Reporting Period (actual, completed)

Grantee Organization
 Report Contact Person, with telephone & email
 Project Leader (if different)

Report Type: Final

2. Project Report Narrative

Summarize the Project activities undertaken during the course of the Project. Unlike progress reports, the final report *does not* build upon the narrative from previous reports, but should be a stand-alone report, describing the Project from beginning to end.

2.A. Project Results

Describe in sufficient detail the goals of the Project, and the progress and results achieved over the course of the Project. Report accomplishments or setbacks on specific tasks as described in the scope of work, Attachment 3. This should include information such as:

- problems that the Project addressed;
- short and long term objectives, and how they are being or have been met;
- relevance of the Project to restoring and protecting coastal and watershed ecosystems in the Southeast New England Region;
- geographic area(s) affected by the Project;

- activities carried out to complete the Project, including specific techniques and materials used;
- deliverables or milestones completed;
- findings to date or lessons learned during this reporting period;
- changes made to the Project plan over the course of the Project, why they were made and how they worked out;
- next steps for future progress;
- challenges for future progress.

2.C. Compliance

List or summarize any compliance activities completed – Quality Assurance Project Plan (QAPP), permits, etc.

2.D. Project Partners

List major Project partners, and note their contributions in detail.

2.E. Volunteer and Community Involvement

Describe community support and any public involvement in the Project, including the specific roles of volunteers in Project activities. List the number of volunteers and hours that were contributed during the Project. If used as match, report the match figures under the budget section described below.

2.F. Outreach & Communications

Describe any outreach or educational activities (e.g. training, brochures, videos, press releases or public events) related to the Project. **Include PDF copies of press releases, outreach documents, newspaper articles, etc. as described under “Supporting Materials,” below.**

3. Project Budget Report

The budget report must provide sufficient information and detail to explain Project expenses for the entire Project, in the context of the objectives, tasks, and categories provided in the Project narrative and budget under Attachment 3. The budget report should be organized so that a reviewer can easily judge whether expenditures tracked the original Project budget and, if not, to understand why.

3.A. Summary Budget Table

Provide a summary budget table to show overall expenditures and match over the course of the entire Project, using the following format. Be sure to fully document match and match sources.

Summary Budget Table

	Budget Category	Total Budgeted Funds	Total Budgeted Match	Total Budgeted Grant + Match	Actual Grant Funds Expended	Actual Match Funds Expended	Actual Expended Grant + Match	Match Source
a	Personnel							
b	Fringe							
c	Travel							
d	Equipment							
e	Supplies							
f	Contractual							
g	Other							
h	Total Direct							
i	Indirect							
j	Total							

3.B. Detailed Project Budget Table

As with progress reports, the centerpiece of the final budget report is a budget table or tables utilizing the same cost categories and level of detail as the Project budget under Attachment 3. Report expenditures by category and, if applicable, task. Where a category is very broad, provide sufficient breakdown detail – for example, where “personnel” covers a number of individuals, show expenses for each individual; under “subcontracts” show expenses for each subcontract, etc. This table will report expenditures over the course of the entire Project. Add additional tables if need be to provide sufficient detail, or to summarize costs by task. **Where additional tables are used, ensure that the reviewer can easily understand how they relate to one another and the summary budget table.**

3.C. Budget Narrative

Use a budget narrative, keyed to the budget tables where necessary, to provide sufficient detail on expenditures and match. The budget narrative in the report may follow the format of the budget narrative in the Project budget under Attachment 3. Be sure to explain any deviations from the approved budget. The Subrecipient Agreement details requirements for prior approval for changes to Project budgets.

4. Supporting Materials

Include high-resolution digital copies, using PDF format for documents and JPG or TIFF format for images, of supporting materials related to the Project, including:

- Project maps and drawings;
- Maps of Project results or outcomes if applicable;
- Technical memoranda, data analyses and modeling reports;
- Project photographs, including photos depicting implementation sites before, during, and after implementation; photos of Project signs, etc.;
- Press releases, news articles, brochures, educational curricula, etc.

In the event that file sizes for supporting materials are too large to attach, contact RAE to set up a shared cloud file.

5. Certification

Include this language: *The undersigned verifies that the descriptions of activities and expenditures in this final report are accurate to the best of my knowledge; and that the activities were conducted in agreement with the grant contract. I also understand that matching fund levels established in the grant contract must be met.*

Grantee Signature:

Name:

Job Title

Date:

Organization:

Attach. 3

3225 MAIN STREET • P.O. BOX 226
BARNSTABLE, MASSACHUSETTS 02630



CAPE COD
COMMISSION

(508) 362-3828 • Fax (508) 362-3136 • www.capecodcommission.org

August 29, 2018

The following details our proposed project, partner organizations, and project costs.

Project Title: Regional Collection and Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making

Location of Project: Cape Cod, Massachusetts

Applicant: Cape Cod Commission (Barnstable County)
3225 Main Street
Barnstable, MA 02630

Nature of Organization: Regional Planning Agency, Department of Barnstable County

Project Lead/Point of Contact: Erin Perry, Special Projects Manager
eperry@capecodcommission.org
508-744-1236

Partner Organizations: Association to Preserve Cape Cod
Center for Coastal Studies
UMass Dartmouth School for Marine Science and Technology
Waquoit Bay National Estuarine Research Reserve
Woods Hole Oceanographic Institution

Total Request: \$399,998
Total Non-Federal Match: \$145,665
Total Project Cost: \$545,663
Match Percentage: 36.42%

We look forward to the opportunity to complete the proposed work.

Sincerely,

Kristy Senatori
Executive Director

PROJECT NARRATIVE

Problem Statement: Cape Cod's 53 coastal embayments, nearly 1,000 ponds, and sole source aquifer are ecologically rich and extremely fragile (see project area map in attachment A). Human activity and land use – primarily nutrient pollution from septic systems – have significantly degraded estuarine and freshwater quality. Cape Cod communities struggling to find cost-effective strategies to reduce nitrogen can turn to the Area Wide Water Quality Management Plan for Cape Cod (208 Plan), recently updated by the Cape Cod Commission (Commission). Although the 208 Plan focuses on nitrogen as the major target for improving water quality in estuaries, phosphorus loading to freshwater ponds and streams must be targeted for pollution control measures. The 208 Plan provides a framework of traditional and non-traditional strategies for estuarine and freshwater quality improvement.

Towns are responsible for implementing strategies to reduce nutrients. In many areas across the region development density is not adequate to support cost-effective traditional collection and treatment of wastewater; therefore, towns are relying on the 208 Plan framework as a pathway for non-traditional strategies. Performance of these strategies is less certain, and implementation relies heavily on adaptive management. In addition to nutrients from septic systems, stormwater runoff is also a concern – one that all Cape Cod communities within the Southeast New England Program region are required to address through Municipal Separate Storm Sewer System (MS4) permits.

The 208 Plan's efficacy as a framework for local water quality management depends on the ability to ground-truth and record if strategies enacted in the field are effective and if the environment is responding with water quality improvements. Towns must revisit implementation plans periodically, as required as a condition of consistency with the 208 Plan and MS4 permits, and to maintain compliance with Watershed Permits issued by the Massachusetts Department of Environmental Protection. In most cases, towns must revisit plans at least every five years, and adjust their approaches as necessary. Towns, Barnstable County and partner organizations are collecting data annually and as nutrient management alternatives are implemented. Data analyses are needed to evaluate and determine success – or failure – of approaches.

This proposal seeks support to improve recording, management and translation of monitoring data, so towns better understand if management strategies are successful. It includes new methods for data analysis, evaluation, reporting, and translation to improve understanding of water quality trends and better integrate results into local planning and policy development, creating a path forward for the provision of data and information that will serve the 15 Cape Cod communities and the region well into the future.

Project Description: The Commission has developed a regional water quality database to centralize water quality data historically collected by multiple organizations and agencies. The project team proposes to enhance this framework by integrating additional data and adding tools to ensure data accuracy and assess nutrient mitigation strategies. Funding will help develop a user-friendly interface that analyzes estuarine monitoring data for each estuary with an existing long-term dataset. One watershed will be selected to pilot the interface in order to demonstrate and assess its effectiveness as a decision-support tool. In addition, the project team will compile and analyze existing data associated with freshwater resources, including ponds, lakes, and drinking water; and develop information products to improve understanding of the interconnection of all water resources to Cape Cod's Sole Source Aquifer. Together, these improvements will create a feedback-loop so that the effect of nutrient reduction strategies on a resource can be understood, captured, and used in real-time strategic decisions for nutrient reduction. Recognizing the importance of clean water and supporting all aspects of the environment on Cape Cod, information compiled and analyzed as part of this project will also be made more widely available through a variety of outreach initiatives.

A key feature of this program is that data analysis will provide a measure of the health of the water body and watershed to guide investment in nutrient reduction strategies. Another feature of this program is its

collaborative approach to water resources data aggregation, providing a platform that makes it possible for towns to have a comprehensive picture of the benefits of their investments across all gradients of the watershed. End user engagement is woven into each proposed task ensuring that the products provided at the end of the project will be easily applied and readily utilized by the research and management communities on Cape Cod. The goal is to provide towns with the best available science-based information, so investments in nutrient reduction and groundwater protection have the best possible effect on resources. This goal will be reached through the expertise of the project team, End User Group established as part of the project, and the State of the Waters: Cape Cod Advisory Committee established by the Association to Preserve Cape Cod (APCC). The project team includes experts in water resources, database management, data collection and analysis, collaboration and outreach and project management. The proposed work will be achieved through the following project tasks:

- Task 1: Data integration, quality assurance and control
- Task 2: Collaboration with end users and pilot project
- Task 3: Data analysis and development of a processing script
- Task 4: Integration with web-based user interface and other information products
- Task 5: Targeted outreach to inform local action
- Task 6: Final report

Task 1: Data integration, quality assurance and control

Water quality data as available through project partners and collaborators from all regions of Cape Cod, including estuarine and freshwater environments, will be inventoried and entered into the regional database. The Commission maintains data in an SQL database and will work with project partners to expand the existing database, as needed.

Estuarine Data: Commission staff will work with partner monitoring organizations to compile estuarine water quality data not currently in the regional database. The original effort to compile and integrate data into the database occurred in 2016 and included development of the database infrastructure, identification of data fields and compilation of historical data through 2015. The database will be updated to include all available data through to the present time. The monitoring organizations contributing data include the Center for Coastal Studies (CCS), Buzzards Bay Coalition (BBC), University of Massachusetts Dartmouth School for Marine Science and Technology (SMAST), and the Waquoit Bay National Estuarine Research Reserve (WBNERR). Data collection for these water quality monitoring programs began in 2006, 1992, 1987, and 1993, respectively.

To take advantage of all available long-term monitoring data, while also establishing quality control standards, any historic data generated before or without an approved Quality Assurance Project Plan (QAPP) will be flagged accordingly in the database as part of the quality assurance and quality control (QA/QC) process. Metadata will accompany the database, as well as any final reports acknowledging the use and confidence level of non-QAPP approved data. Three of the four contributing monitoring organizations (CCS, BBC, SMAST) hold current EPA-approved QAPPs. While BBC is not an official partner on this project, they have provided data for use in the database and agree to continue doing so. WBNERR will develop a QAPP in the first year of this proposed project. WBNERR currently sends samples to CCS and SMAST for nutrient analyses under two different water quality monitoring programs; therefore, those nutrient data are covered under approved QAPPs. WBNERR also maintains long-term data (1998 – present) collected using automatic YSI loggers (i.e., sondes) as part of the NOAA National Estuarine Research Reserve System-Wide Monitoring Program (SWMP), but the standard operating procedures for this program are not covered under previously approved QAPPs.

By developing a comprehensive QAPP for WBNERR, records with high (15-minute) temporal resolution of temperature, salinity, pH, dissolved oxygen, turbidity, and chlorophyll *a* fluorescence can be incorporated into the regional database and used in correlation with nutrient dynamics to model changes. The QAPP will strengthen WBNERR's data collection process and enhance its ability to share

and integrate data across private and academic institutions and state and federal agencies. This increased capacity for standardized data sharing is significant for this project but also for future collaborations.

Freshwater Data: Extensive data is available on the quality of Cape Cod's freshwater resources. APCC staff, working with the project team and trained volunteers, will identify and compile freshwater quality data to suitable standards, including state and federal Clean Water Act standards for surface waters and drinking water. An inventory of data will be developed to ensure data sources can be tracked and recorded. Data will be maintained in the regional database.

Data sources will be identified by the project team, guided by standards set by the State of the Waters Advisory Committee to ensure evaluation of all important and credible sources. Data will be compiled for lakes, rivers, public drinking water supplies, and groundwater. This effort will leverage the existing water resources data compiled and maintained by each project partner and will evaluate and compile appropriate data from other sources as an initial step in the project. Data utilized will include, but not be limited to, the 17 years of data collected by the Pond and Lake Stewardship (PALS) Program, as well as data collected from detailed pond assessments and water use and drinking water quality data from the 17 individual water purveyors on Cape Cod, all of which has been compiled by Commission staff.

The Commission and project partners will work with a consultant to develop a QAPP for pond and lake data. In the past, the Massachusetts Department of Environmental Protection (DEP) has declined to accept the existing PALS data for use in identifying and listing impaired waters. As with estuarine data, any historic data generated before or without an approved QAPP will be flagged accordingly and metadata will accompany the database.

Database Quality Assurance and Quality Control (QA/QC): A system for identifying potential errors in source data and/or inconsistencies in database formatting will be established.

The Commission and project partners will work with a consultant to complete the following tasks: 1) develop and agree upon a set of "filter rules" for both historic and future water quality data sets to identify potential errors in the source data; 2) implement a system for performing QA/QC on historical data sets and new data sets, as provided; 3) identify and address database formatting inconsistencies, such as inconsistent station IDs, that impact importing data sets and searchability of the database

As previously described, data not covered by a previously approved QAPP will be flagged accordingly and metadata accompanying the database, as well as final reports, will acknowledge the confidence level of non-QAPP approved data.

Task 1 Outputs: 1) Inventory of water quality data, including sources, parameters and dates; 2) Identification of data gaps; 3) Complete, up-to-date regional estuarine and freshwater quality databases; 4) WBNERR QAPP; 5) Ponds QAPP

Task 2: Collaboration with end users

The goal of this project is to make information more accessible and useable by towns and the region, all of whom are working to meet a regional goal of improving the quality of water resources. Social science research shows that to increase the likelihood of science and data being applied, managers and decision-makers must understand the science and find it to be legitimate and credible (Cash et al. 2003). To enhance the likelihood that data and products from this project are used and trusted, the project team intends to create deliberate processes that engage end users (those in a position to apply the project deliverables), ensuring they understand the data and that data products and analyses meet their information needs.

To this end we have designed a collaborative end user engagement process to enable this project to bridge the science to management divide and achieve desired outcomes. The project approach includes

integrating defined steps that will link the technical aspects of data collection and analysis to development of decision-support tools that meet end user needs and are able to help guide management decisions. The collaborative process is designed to be iterative and end user driven and builds in meaningful and deliberate opportunities for regional and local decision-makers to contribute to project outcomes. End user collaboration will be integrated in every aspect of the project, initiated at the beginning and sustained to the end. Utilizing this collaborative approach will set up the project for greater success by strengthening partner relationships as well as data sharing mechanisms that will continue beyond the life of the project. The impact of the collaboration process will also be evaluated as part of our project activities.

Key end users fall into four main groups: 1) water quality managers, regulators and policymakers who will draw on information and decision-support tools created from this effort to inform their work and management decisions, 2) water quality monitoring organizations who collect, analyze and contribute data to the regional database, 3) decision-makers from one watershed who will work with the project team to pilot test applying information to their local management needs and interests, and 4) researchers who can use information from the regional database as a platform for supporting local studies on the effectiveness of water quality approaches applied in the Cape Cod setting.

The seven groups of end users identified include: 1) The Cape Cod Water Protection Collaborative (CCWPC), which includes representatives from all fifteen Cape Cod towns and two County representatives. The mission of this body is to protect Cape Cod's shared water resources by promoting and supporting the coordinated, cost-effective and environmentally sound development and implementation of local water quality initiatives; 2) The Cape Cod Commission; 3) DEP; 4) The Environmental Protection Agency (EPA); 5) Monitoring organizations – CCS, APCC, WBNERR, BBC, pond associations; 6) Water quality committees, water resource managers and local officials from one pilot watershed; 7) Researchers (SMAST).

Engagement with end users will be structured and facilitated by a trained engagement specialist from WBNERR. Facilitators will ensure that open and regular communication is established and sustained with end users over the course of the project. The collaborative process has been broken into five objectives:

Collaboration Objective 1: Establish an End User Group to provide guidance to the project team and help make key decisions on different aspects of work products.

Process: The End User Group will be established at the beginning of the project and will be comprised of the membership of the Cape Cod Water Protection Collaborative and one designated representative from each of the other end user groups, including the project team organizations. The End User Group will meet on a quarterly basis. Meeting will be structured and professionally facilitated.

Anticipated Outcomes: Strengthened relationships among project partners, monitoring organizations, and end users, which is essential for increasing project impact and achievement of objectives.

Collaboration Objective 2: Work with water quality monitoring organizations to discuss database interface, data needs, reporting procedures, data QA/QC protocols, and all related processes necessary to establish a database that is as complete as possible and trusted by partners.

Process: The project team will hold a workshop soon after project start-up to bring key monitoring groups together to discuss all aspects of database set-up and use including data access, delivery, archiving, and quality control, as well as individual agency roles necessary to sustain the effort beyond the life of the project.

Anticipated Outcomes: Clear list of action items and responsible parties to strengthen database refinement and roll-out.

Collaboration Objective 3: Work with the End User Group to identify priority water quality information needs that can be addressed by accessing data from the regional database, as well as desired data outputs.

Process: Through facilitated meetings, WBNERR will work with end users to identify the key types of information and data outputs decision-makers need. Feedback will be summarized and shared with the project team. This feedback will be used to guide Task 3 and development of a data analysis processing script.

Anticipated Outcomes: Prioritized list of data analyses and desired outputs, as well as a list of data gaps.

Collaboration Objective 4: Work with pilot watershed group to conduct further analyses, interpret and translate results, and identify opportunities for applying data within the watershed to help inform water quality management decisions.

Process: Drawing on a review of available data by watershed, as well as the data needed to effectively run the processing script, the project team will select a pilot watershed. This decision will be made as part of the project implementation process and with consideration to areas where use of the regional database and processing script may be illustrated most effectively. This will inform lessons learned and serve as a template for other watersheds. Two meetings with key decision-makers within the pilot watershed, as well as database developers and technical data experts will take place. The purpose of these meetings will be to unpack and illustrate how municipalities can apply project outputs to decision-making, as part of local planning and management efforts. Where and how analyses can help decision-makers evaluate implementation of local water quality plans will be a focus of these deliberations. After the pilot process has been completed WBNERR will convene a regional workshop to share results of what was learned and transfer lessons to decision-makers in other watersheds on Cape Cod. Lessons and results from the process will be captured in the final project report.

Anticipated Outcomes: Decision-makers from pilot watershed receive analyzed and interpreted watershed specific data to inform management efforts. Decision-makers understand, trust and can apply the project outputs.

Collaboration Objective 5: Work with monitoring organizations and selected researchers from the pilot watershed to identify monitoring and research gaps. This is essential to create a feedback loop that allows the project team to identify how the regional database can be used to help improve monitoring.

Process: Given the range of approaches being considered across the region to help improve water quality, it is critical that a component of this project is geared toward better understanding outstanding monitoring needs. A workshop will be held to identify (i) if and where monitoring should/can be enhanced or streamlined, (ii) if previously uncollected parameters are needed to capture key trends, (iii) gaps in current monitoring efforts and resources needed to meet these gaps, (iv) opportunities where monitoring groups can work together more effectively to achieve shared goals and strengthen the regional database.

Anticipated Outcome: Recommendations developed to help guide future monitoring efforts. Identification of key research needs that is shared with regional research entities.

Task 2 Outputs: 1) Guidance on database QA/QC; 2) List of priority data outputs for Task 3; 3) Final report for one pilot watershed; 4) Key recommendations to guide future monitoring efforts; 4) List of key research needs to help inform local management efforts

Task 3: Data analysis and development of a processing script

As previously described and as will be further developed and defined by the collaborative process, data analysis tools summarizing water quality data into metrics that are easy to digest, and representative of trends and patterns are needed. Information is needed at spatial scales ranging from the sampling station to the watershed to the region. In response to this regional management need the project team will analyze spatial and temporal trends in water quality across the coastal and fresh waters of Cape Cod.

Location-specific water quality monitoring is necessary to identify problems and develop and evaluate management solutions because underlying drivers of declining water quality may be dramatically different from one watershed to another. Broader spatial and temporal scale analyses are often not available when water quality monitoring focuses on a single watershed or water body. The project team plans to utilize the regional database to generate a region-wide dataset, which will be critical to understanding both local and broader scale patterns in water quality and climate indicators. For example: water quality, indicated by chlorophyll *a* pigments, has declined across Buzzards Bay and other Cape Cod coastal embayments over the past several decades. The decline in water quality observed across Buzzards Bay is more consistent with regional climate warming, rather than trends in nutrient loading or nitrogen concentration (Rheuban et al. 2016, Williamson et al. 2017). Using this database, the following question can be answered: do our observations in Buzzards Bay represent a similar pattern across the all the coastal and fresh waters of Cape Cod?

Woods Hole Oceanographic Institution (WHOI) will develop a processing script for data trend analyses. Detailed data analyses will allow end users to discern if implemented mitigation strategies are effective or if other factors beyond traditional management tools have impacted local and regional water quality. The proposed work will make data analysis accessible to local stakeholders by combining modern, open source data analytics toolboxes with web-based dashboards and GIS. The data analysis will be designed such that metrics will be generated upon request at user-defined spatial and temporal scales. Data analyses will utilize QA/QC protocols and will have the ability to integrate new data into analyses as the database is updated, providing long-term benefit to end users beyond the period of the grant.

In conjunction with the collaborative process, the project team will generate a detailed interpretation of historical water quality data for one pilot watershed. This detailed interpretation will also include an analysis of nitrogen loading history based on published nitrogen loading models. Project partners at WHOI completed a nitrogen loading trend analysis of 28 embayments within the Buzzards Bay watershed (Williamson et al. 2017) and propose a similar analysis for the detailed interpretation of a chosen embayment. Data needs for the historical nitrogen loading trend analysis, such as land use and MA level III assessors' data, have already been compiled by project partners. This historical nitrogen loading trend analysis will allow us to compare nutrient input trends with water quality trends and will provide a framework of analyses for other regional watersheds.

APCC staff will analyze and compare freshwater quality data to suitable water quality standards, including state and federal Clean Water Act standards for surface waters and drinking water. Work will take advantage of existing resources, such as the Cape Cod Pond and Lake Atlas, which includes freshwater standards for evaluating pond water quality that consultants have been using for most detailed pond studies since 2003.

All analyses will be used in development of water resources report cards and the “State of the Waters: Cape Cod” report, which will grade and characterize water resources (described as part of task 4).

Task 3 Outputs: 1) Complete and annotated processing script for estuarine data analyses; 2) Data trend analyses for currently available estuarine and freshwater data sets; 3) Data interpretation for one pilot watershed; 4) Evaluation of current water quality relative to known standards (ex. nitrogen TMDLs); 5) Comparison of water quality across regions to identify trends and commonalities; 6) Summary of results and needs assessment.

Task 4: Integration with web-based user interface and other information products

Data and analyses will be made available through a web-based user interface, water resources report cards, the “State of the Waters: Cape Cod” annual reports, and other information products.

The processing script will be integrated into the regional database and website user interface. Commission staff will review the data processing script developed by WHOI, work with WHOI staff to integrate the script into an SQL procedure, and verify script functionality through testing of the procedure. Commission staff will edit existing SQL tables or create new tables for processed data from the SQL procedure to interface with the web-based interface.

Estuarine data analyses that result from the processing script and that are consistent with the end user needs established in task 2 will be displayed on the regional database website. To ensure ease of access and use, Commission staff will work with project partners and the End User Group to assess the suitability of the current web interface. Charts and visuals will be edited and/or created, as needed, to display appropriate analyses.

Estuarine and freshwater data analyses will be used to develop the “State of the Waters: Cape Cod” report, which will be an organized compilation of report cards. All data and analyses from task 3 will be integrated into water resources report cards that characterize issues and form the basis of the report. APCC will characterize water resources based on analyses completed. Report cards will describe and grade watersheds, ponds and lakes, drinking water, coastal waters, and groundwater on Cape Cod.

To develop report cards, APCC will use a methodology that has been used effectively to raise public awareness and promote action in areas such as California, Florida, Maine, New Hampshire, New York, Oregon, Texas, Washington, the Great Lakes, Chesapeake Bay, U.S. waters and internationally. In Massachusetts, report cards have highlighted water quality problems and improvements in at least five water bodies, including the Blackstone River, Charles River, Mystic River, Buzzards Bay, and Taunton River. Report cards were also used to highlight beach water quality issues at 15 public beaches in metropolitan Boston. A list of the report cards referenced can be found in attachment B.

Aside from Buzzards Bay communities, Cape Cod does not have any water resources report cards to help the public and decision makers understand problems and encourage action. Most report cards assign a letter grade using defined criteria and sometimes the grade is combined with a color scale to indicate degree of severity. The result is powerful, graphic, and easy to comprehend.

The “State of the Waters: Cape Cod” Report will integrate the report cards and be easily understood by the general public yet developed with sufficient rigor to be accepted by experts and regulators. The report will be publicly available through digital and conventional media and will become a regular and prominent feature released at the APCC annual meetings and promoted in other venues. In subsequent years, the report will be updated to reflect the latest data.

The report will be used as an educational resource, but also to identify themes and issues and inform better public policy regarding the improvement and preservation of Cape Cod’s water resources.

Task 4 Outputs: 1) Updated web-based user interface to display and make publicly accessible all data and analyses; 2) Water resources report cards that provide letter grades for water quality of lakes, rivers, estuaries and coastal waters, groundwater, drinking water and watersheds; 3) “State of the Waters: Cape Cod” Report

Task 5: Targeted Outreach to Inform Local Action

Results will be delivered and translated to local-decision-makers best positioned to apply and integrate findings into local planning and management.

In addition to the workshops and meetings identified above, WBNERR will conduct two additional workshops to share results from this work with the full End User Group, other regional decision-makers, and the public. The purpose of these workshops is to share results of data analysis and information products with those who need the information to make decisions. Depending on timing and feedback from the End User Group and project team, these workshops may be stand alone or combined and/or coordinated with other long standing regional outreach events that are well known and well attended. Three of these include the One Cape Summit (led by the Commission), the Cape Coastal Conference (led by WBNERR and several partner organizations and agencies) and the APCC Annual Meeting. Linking the project outreach and communication plan with these established regional events will help to strengthen overall impact and enhance cohesiveness.

Annual Meetings: APCC will release the “State of the Waters: Cape Cod” Report at its annual meeting, in August/September of each year. Most meetings draw approximately 150 people. The Commission will showcase this project at the OneCape Summit, which focuses on both the environment and the economy, but was originally established to address progress on water quality improvement. The Summit attracts between 200 and 300 attendees each year. The annual Cape Coastal Conference will also be an opportunity for the distribution of project information. It typically draws between 300 and 400 attendees. This established pattern of annual regional events will help draw attention to the project and set the stage for utilizing project outputs to inform restoration and protection of water resources over the long term.

Social media: APCC will design and implement a social media campaign that will publicize the “State of the Waters: Cape Cod” Report. Planned work includes: 1) a blog with short articles and photos about water quality, natural history information on marine and freshwater systems, and best management practices for protecting water resources. 2) social media posts related to water quality and relaying specific information on issues and events to generate interest in this project.

During the first year of the project, the project team will establish a schedule for targeted outreach that takes into consideration annual meeting dates that are not known at the time of this submission.

Task 5 Outputs: 1) Presentation of project results and resources and additional engagement with end users at regional outreach events, including, but not limited to the OneCape Summit, Cape Cod Coastal Conference and the APCC Annual Meeting; 2) Social media posts to share information about the project and project outputs

Task 6: Final Report

The project team will provide a final report that summarizes the data collected, the collaborative process and key outputs and outcomes of the process, data analyses, and information products.

The final report will be available through the Commission’s website and partner websites. Information in the report will be shared at existing regional outreach events, as described in task 5, and sections of the final report will be shared individually. For example, water resources report cards and the “State of the Waters” Cape Cod report will be issued annually and serve as standalone documents. The watershed interpretation will serve a localized purpose, as well as be used as a framework for moving forward in other watersheds across the region. The water quality database will be accessible through the web-based interface and will be used by a wider audience than may utilize the final report.

Task 6 Outputs: Final report that includes, at a minimum, 1) Documentation of data collected and aggregated; 2) Database QA/QC procedures; 3) Annotated processing script; 4) Data analysis methods; 4) Detailed interpretation of one or more watersheds; 5) Water resources report cards; 6) “State of the Waters: Cape Cod” Report; 7) Documentation of public outreach and workshops

Project Timeline and Milestones:

	2018					2019												2020						
	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Task 1																								
Data Compilation																								
Database QA/QC																								
WBNERR QAPP Development																								
Ponds and Lakes QAPP Development																								
Task 2																								
End User Group Mtgs																								
Monitoring Group Workshop																								
Identify Data Outputs/Analysis Needs																								
Pilot Watershed Interpretation																								
Identify Monitoring/Research Gaps																								
Task 3																								
Data Analysis/Script Development																								
Pilot Watershed Analysis/Interpretation																								
Task 4																								
Development of Report Card Template																								
Report Cards Released																								
"State of the Waters: Cape Cod" Released																								
Integrate Script with Database/Website																								
Task 5																								
Develop Targeted Outreach Schedule																								
Targeted Outreach/Workshops/Meetings																								
Task 6																								
Final Report																								

Local Impact: This project is in direct support of the 15 Cape Cod towns implementing local water quality plans, 11 of which are located within the SNEP region. Successful development of consistent and comparable data analyses will track trends in response to plan implementation, provide post-implementation information, help refine local decision-making, and facilitate management to improve water quality. The proposed processing script will be designed to allow for future automated analyses as new estuarine data are available, creating long-term capacity for embayment specific interpretation and informed local water quality decisions past the grant period. The proposed collection and analysis of freshwater data is consistent with the effort initiated for estuarine data in 2016 and will provide for a long-term, consistent database of all water resources information. The Commission is committed to maintaining the data, working with project partners to integrate new data into the future, and utilizing the QA/QC procedures developed as part of this project. APCC is committed to issuing the “State of the Waters: Cape Cod” Report on an annual basis to ensure ongoing evaluation of Cape Cod’s important water resources and responsive and responsible public policy decisions.

Regional Impact: The strong cooperative relationship among monitoring, management and non-profit organizations builds regional capacity to solve water quality challenges through collaborative and innovative restoration techniques. The combined, downloadable dataset allows for regional scale analyses to identify the impacts of climate and tidal variability on water quality management. The database structure, analyses, and information products will be transferable to other areas within the SNEP region and beyond that seek to collect and analyze long-term data sets and translate them into helpful information products.

The project team recognizes the importance of tracking both the impact of the project process and outcomes to inform future learning across the region and increase overall effectiveness. WBNERR has significant experience in project evaluation and will conduct evaluations of workshops held with managers and decision-makers to determine how well objectives were met and where efforts can be improved. WBNERR will also assess the impact of the collaborative process with the End User Group.

Results of these evaluations will be incorporated in the final project report as part of the body of learning related to this project.

Project Team (See attachment C): The project will be led by the Commission, with expertise in water resources, database development and project management. The Commission will lead project activities, coordinate project tasks, track progress, and maintain communication with project partners. Partner monitoring organizations include the CCS, SMAST and WBNERR. Each will provide data as well as guidance on quality assurance/control and serve as an advisor for data analysis. WBNERR will lead collaborative process, plan outreach workshops to decision-makers and researchers and facilitate end user meetings. WHOI will complete the processing script development and data analysis. APCC will expand upon existing freshwater databases and integrate estuarine and freshwater data and analyses into information products, including water resources report cards and the “State of the Waters: Cape Cod” Report, to increase knowledge and understanding of the health of water resources and identify water restoration needs. An End User Group will be established, consisting of project team members, the CCWPC, and other key end users identified in task 2 to assist in defining data outputs.

Integration and Multiple Benefits: This project takes a holistic approach to water resource issues, addressing both estuarine and freshwater quality. It seeks to advance several SNEP priorities, not limited to, fostering integrated approaches to restoring water quality, habitats and ecosystems; building local and regional capacity, tools and knowledge; strengthening sustainable partnerships; and improving the utility of environmental monitoring for ecosystem management. In addition to data collection and analysis, a program script, and information products, outputs will include a thoroughly vetted, downloadable database and metadata file for research and management applications consistent with DEP and EPA water quality monitoring strategies. This robust water quality database can be used by coastal scientists against other large datasets for future research projects. (e.g. marine fish and mammal migrations, coastal bird migrations, the spread of harmful algal blooms, etc.)

Leveraging: This project leverages work completed by each project partner and work completed by DEP and SMAST to develop total maximum daily loads for nitrogen and seeks to expand the effect of this research and long-term data accumulation on local management decisions. The Commission has developed databases and a web interface to store and share a regional data set. This project will take these efforts one step further to be responsive to local needs, fulfill the recommendations of the 208 Plan, and support existing management efforts to improve water quality, habitats and ecosystems.

Outreach and Communications: All work completed for this project will be included in a web-based interface. The program script will be integrated with the database and will be used on a regular basis, as additional data are available. The data and analyses will be used in water resources report cards and an annual “State of the Waters: Cape Cod” report created by APCC. APCC will build on the report cards and State of the Waters report to develop an “action agenda” that provides recommendations for actions to protect and restore water, along with measures for gauging success in implementing actions. The broad-based and diverse target audience will include the public as well as decisionmakers. Through the CCWPC, the Commission will work to share project outputs with each town. In addition, WBNERR will conduct targeted watershed-based workshops to translate information to local decision-makers. Other target audiences include full- and part-time residents, pond associations, municipal boards, departments and water quality/wastewater committees, fisheries stakeholders, other restoration partners, non-governmental organizations, elected officials, and others. Additional outreach materials will be developed, as needed, and project components will be included in presentations by the Commission and partners, as appropriate, at local, state, regional and national meetings to allow for knowledge transfer.

Literature cited can be found in attachment D.

BUDGET DESCRIPTION

Budget Table

Cost Item or Category	Cost Basis	RAE SNEP Request	Non-Federal Match	Match Source	Total Project Cost
Personnel					
Erin Perry, CCC	364 hrs. @ \$43.27	11,812.71	3,937.57	CCC	15,750.28
Tom Cambareri, CCC	153 hrs. @ \$49.53	5,683.57	1,894.52	CCC	7,578.09
Phil Detjens, CCC	208 hrs. @ \$44.45	6,934.20	2,311.40	CCC	9,245.60
Mario Carloni, CCC	364 hrs. @ \$37.18	10,150.14	3,383.38	CCC	13,533.52
Jo Ann Muramoto, APCC	500 hrs. @ \$48.00	18,000.00	6,000.00	APCC-MET	24,000.00
Don Keeran, APCC	502 hrs. @ \$43.20	16,264.80	5,421.60	APCC-MET	21,686.40
Kristin Andres, APCC	502 hrs. @ \$40.00	15,060.00	5,020.00	APCC-MET	20,080.00
Brian Horsley, APCC	416 hrs. @ \$32.00	9,984.00	3,328.00	APCC-MET	13,312.00
Amy Costa, CCS	390 hrs @ \$34.60	11,072.00	2,422.00	CCS	13,494.00
Brian Howes, PI SMAST	70 hrs. @ \$68.46	4,792.20	-		4,792.20
Roland Samimy, SMAST	70 hrs @ \$54.07	3,784.90	-		3,784.90
Outreach Asst., WBNERR	850 hrs. @ \$25.00	21,250.00	-		21,250.00
WQ Monitoring Asst., WBNERR	206 hrs. @ \$20.12	4,144.72	-		4,144.72
Waquoit Bay Volunteers, WBNERR	546 hrs. @ \$24.69	-	13,480.74	WBNERR	13,480.74
Jennie Rheuban, WHOI	1216 hrs. @ \$42.625	51,832.00	-		51,832.00
Total Personnel		190,765.24	47,199.21		237,964.45
Fringe					
Fringe, CCC	66.36%	22,947.70	7,649.23	CCC	30,596.93
Fringe, APCC	25.00%	14,827.20	4,942.40	APCC	19,769.60
Fringe, CCS	20.00%	2,214.40	484.40	CCS	2,698.80
Fringe, SMAST (+\$16.5/wk)	36.27%	3,176.91	-		3,176.91
Fringe, WBNERR	N/A	-	-		-
Fringe, WHOI	45.99%	23,837.54	-		23,837.54
Total Fringe		67,003.74	13,076.03		80,079.78
Travel					
In-state travel (APCC)	2,000 mi @ \$0.545	730.30	359.70	APCC-MET	1,090.00
Out-of-state (RAE Summit 2018; 2 CCC staff)	See Narrative	4,000.00	-		4,000.00
Out-of-state (RAE Summit 2018; 1 APCC staff)	See Narrative	1,340.00	660.00	APCC-MET	2,000.00
Out-of-state travel (WHOI - S. Doney)	See Narrative	4,798.00	-		4,798.00
Total Travel		10,868.30	1,019.70		11,888.00
Equipment					
WQ Monitoring Equipment	See Narrative	6,500.00	-		6,500.00
Total Equipment		6,500.00	-		6,500.00
Supplies					
Software (APCC)	See Narrative	335.00	165.00	APCC-MET	500.00
Workshop Supplies (APCC)	See Narrative	502.50	247.50	APCC-MET	750.00
Workshop Supplies (WBNERR)	See Narrative	1,500.00	-		1,500.00
Total Supplies		2,337.50	412.50		2,750.00
Contractual					
QAQC Database (CCC)	See Narrative	20,000.00	-		20,000.00
QAPP Development (CCC)	See Narrative	-	7,500.00	CCC	7,500.00
OneCape Conferences (Venues & AV equipment)	See Narrative	10,000.00	10,000.00	CCC	20,000.00
Workshop & Coastal Conference expenses (Venues & AV equipment; WBNERR)	See Narrative	6,000.00	-		6,000.00
Web Design (APCC)	See Narrative	13,400.00	6,600.00	APCC-MET	20,000.00
TMDL Solutions (SMAST)	See Narrative	3,500.00	-		3,500.00
Dr. Scott Doney	See Narrative	-	12,339.00	WHOI	12,339.00
Total Contractual		52,900.00	36,439.00		89,339.00
TOTAL DIRECT		\$ 330,375	\$ 98,146		\$ 428,521
CCC Indirect Cost (applied to direct labor only)	71.90%	24,863.46	8,287.82		33,151.29
APCC Indirect Cost	10.00%	9,044.38	3,274.42		12,318.80
CCS Indirect Cost (NICRA)	50.31%	4,428.80	3,717.80		8,146.60
SMAST Indirect Cost (NICRA)	59.00%	1,175.40	7,824.47		8,999.87
WBNERR Indirect Cost	10.00%	3,289.47	1,348.07		4,637.55
WHOI Indirect Cost (NICRA)	62.00%	26,822.00	23,066.00		49,888.00
Total Indirect Cost		\$ 69,624	\$ 47,519		\$ 117,142
TOTAL (Total Direct+Indirect)		\$ 399,998	\$ 145,665		\$ 545,663
Non-Federal Match as a Percentage of the Request:			36.42%		

Budget Table cont.

Grant Totals Per Partner

SNEP Watershed Grant Proposal - Grant Totals per Partner					
Project Partners		RAE SNEP Request	Non-Federal Match	Match Source	Total Project Cost
Cape Cod Commission	Direct Costs	91,528	36,676	CCC	\$ 128,204
	Indirect Costs	24,863	8,288	CCC	\$ 33,151
	Total:	116,392	44,964	CCC	\$ 161,356
Association to Preserve Cape Cod	Direct Costs	90,444	32,744	APCC-MET	\$ 123,188
	Indirect Costs	9,044	3,274	APCC-MET	\$ 12,319
	Total:	99,488	36,019	APCC-MET	\$ 135,507
Center for Coastal Studies	Direct Costs	13,286	2,906	CCS	\$ 16,193
	Indirect Costs	4,429	3,718	CCS	\$ 8,147
	Total:	17,715	6,624	CCS	\$ 24,339
Umass Dartmouth SMAST	Direct Costs	15,254	-	-	\$ 15,254
	Indirect Costs	1,175	7,824	SMAST	\$ 9,000
	Total:	16,429	7,824	SMAST	\$ 24,254
Waquoit Bay National Estuarine Research Reserve	Direct Costs	39,395	13,481	WBNERR	\$ 52,875
	Indirect Costs	3,289	1,348	WBNERR	\$ 4,638
	Total:	42,684	14,829	WBNERR	\$ 57,513
Woods Hole Oceanographic Institute	Direct Costs	80,467	12,339	WHOI	\$ 92,806
	Indirect Costs	26,822	23,066	WHOI	\$ 49,888
	Total:	107,289	35,405	WHOI	\$ 142,694
TOTAL:	Direct Cost	330,374	98,146		\$ 428,521
	Indirect Cost	69,624	47,518		\$ 117,142
	TOTAL:	\$ 399,998	\$ 145,665		\$ 545,663

Budget Narrative

Personnel

Cape Cod Commission

Thomas Cambareri, Water Resources Technical Services Director: Mr. Cambareri will assist with identification of water resources data sources, data compilation, identifying data analysis needs, and development of the pilot watershed interpretation (Task 1, Task 2, Task 3). 153 hrs. @ \$49.53/hr., total \$7,578.09.

Mario Carloni, Geospatial Developer: Mr. Carloni will be responsible for the database web interface and integrating the processing script with the SQL database and web interface (Task 4). 364 hrs. @ \$37.18/hr., total \$13,533.52.

Phil Detjens, Applications Manager: Mr. Detjens will oversee database development and management, integration of the processing script into an SQL procedure and creating and editing SQL tables (Task 4). 208 hrs. @ \$44.45/hr., total \$9,245.60.

Erin Perry, Special Projects Manager: Ms. Perry will serve as project lead for the grant and is responsible for oversight of the project, coordinating with project partners and reporting (Tasks 1-6). 364 hrs. @ \$43.27/hr., total \$15,750.28.

CCC will provide match of in-kind labor. Fringe benefits are allocated as a percentage applied to total direct salaries. The audited FY17 fringe rate is 66.36% and is broken out as: Retirement (23.40%), Paid Leave Benefits (23.21%), Health Insurance (18.12%), and Medicare (1.63%).

Association to Preserve Cape Cod

Jo Ann Muramoto, Director of Science Programs: Dr. Muramoto will be responsible for freshwater data compilation and data analysis and she will prepare the report cards (Task 1, Task 4). 500 hrs. @ \$48/hr., total \$24,000.

Don Keeran, Assistant Director: Mr. Keeran will serve in an advisory capacity and provide guidance on data compilation and development of report cards and State of the Waters Report (Task 1, Task 4). 502 hrs. @ \$43.20/hr., total \$21,686.40.

Kristin Andres, Director of Education and Outreach: Ms. Andres will oversee development of outreach products and activities for development and promotion of State of the Waters Annual Report (Task 4, Task 5). 502 hrs. @ \$40/hr., total \$20,080.

Bryan Horsley, Restoration Technician: Mr. Horsley will assist with GIS mapping and other technical assistance (Task 4, Task 5). 416 hrs. at \$32/hr., total, \$13,312.

APCC match is in-kind labor funded by a 2018 Massachusetts Environmental Trust grant.

Waquoit Bay National Estuarine Research Reserve

Outreach and Engagement Assistant: The Outreach and Engagement Assistant will work with and be supervised by Tonna-Marie Rogers, WBNERR Coastal Training Program Coordinator, and will provide support in collaborative process design, meeting planning and facilitation and overall coordination of WBNERR tasks. Working with the project team and the Commission as lead, the assistant will develop process agendas for end user meetings, design effective processes to meet meeting goals and record action items and decisions (Task 2, Task 5). 850 hrs. @ \$25/hr., total \$21,250.

Water Quality Monitoring Assistant: The Water Quality Assistant will be trained by the WBNERR Research Associate, Jordan Mora, to maintain water quality stations, including but not limited to, collecting and filtering water samples, calibrating equipment, deploying units, and managing downloaded data. The assistant will support Ms. Mora with QAPP development through research and writing (Task 1). 206 hrs. @ \$20.12/hr., total \$4,144.72.

Fringe benefits are not included in proposal, as staff identified are not benefit eligible.

Waquoit Bay Watcher volunteer hours are contributed as match. Volunteer hours are associated with the Waquoit Bay Watchers Citizen Science Water Quality Monitoring Program (SWMP). The SWMP and Waquoit Bay Watcher programs are ongoing and all past and future data collected will be submitted to the Cape Cod Commission's regional database (Task 1). 546 hrs. @ \$24.69/hr., total \$13,480.74.

APCC will act as the fiscal agent for WBNERR.

Woods Hole Oceanographic Institution

Jennie Rheuban, Research Associate III: Ms. Rheuban will be responsible for data analysis and development of processing scripts, providing advice and direction on the selection of a pilot watershed and working with the project team on database quality assurance and control and to complete the detailed interpretation in the pilot watershed. Ms. Rheuban will work with Commission staff to integrate the processing script with the existing SQL database (Task 2, Task 3, Task 4). 1,216 hrs. @ 42.625/hr., total \$51,832.

WHOI match is in-kind labor provided by Dr. Scott Doney in the amount of \$12,339 and a WHOI contribution of \$23,066 for indirect costs in excess of 25% of the requested amount. Dr. Doney will advise Ms. Rheuban on data analysis and assist with data interpretation. WHOI's fringe rate is included in their Negotiated Agreement with Department of Navy. Fringe benefits are allocated as percentage to

total assignable salaries and allocated paid leave benefits, excluding overtime salaries. The provisional fringe rate of 45.99% for calendar year 2018 is broken out as: Retirement (23.19%), Health/Dental (11.55%), FICA (7.72%), Workers Comp (0.38%), Disability (1.00%), and Other Benefits (2.15%).

Center for Coastal Studies

Amy Costa, Associate Scientist: Dr. Costa will assist with quality assurance and control of the database and provide advice and guidance on data outputs and analysis needs (Task 1, Task 2). 390 hrs. @ \$34.60/hr., total \$13,494.

CCS match is 70 hours of in-kind labor provided by Dr. Costa and \$3,718 in indirect cost (\$2,256 for indirect cost in excess of 25% of the requested amount and \$1,462 for indirect cost applied to the in-kind labor)

UMass Dartmouth School for Marine Science and Technology

Brian Howes, Coastal Systems Program Director: Dr. Howes will assist with quality assurance and control of the database and provide advice and guidance on data outputs and analysis needs (Task 1, Task 2). 70 hours @ \$68.46/hr., total \$4,792.20.

Roland Samimy, Senior Research Manager: Dr. Samimy will assist with quality assurance and control of the database and provide advice and guidance on data outputs and analysis needs (Task 1, Task 2). 70 hrs. @ \$54.07/hr., total \$3,784.90.

SMAST will provide match of \$7,824 in indirect costs. The fringe rate is broken out as: 34.68% fringe benefit, 1.41% FICA, plus an additional \$16.50 per week Health and Welfare.

Travel

In-State Travel

In-State Travel is budgeted for attendance at project partner meetings, advisory committee meetings, and SNEP grantee meetings. Total budgeted is \$1,090. APCC source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$730.30. APCC's match: \$359.70.

Out-of-State Travel

RAE Summit: As suggested in the RFP, travel is budgeted for four staff to attend the 2018 RAE Summit. An estimate of \$6,000 includes conference registration fees, travel to/from airport, hotel, flight, and meals. APCC source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$5,340. APCC's match: \$660.

Dr. Scott Doney: Travel is budgeted for Dr. Scott Doney to attend annual meetings on project results. Dr. Doney will provide guidance on data analysis and assist with data interpretation (Task 3). The total amount budgeted is \$4,798. This estimate includes travel from the University of Virginia to WHOI, lodging for one week per year for each of the two years of the proposed project, car rental and per diem.

Equipment

Water Quality Monitoring Equipment

WBNERR will purchase monitoring equipment needed to upgrade the WBNERR water quality monitoring program to data standards comparable to other partner organizations (Task 1). Currently, one of the four SWMP stations is still occupied by an older model sonde, the YSI 6600-series. This station will be upgraded consistent with other sites in Waquoit Bay. The equipment request is for a YSI EXO2 sonde in the amount of \$6,500 (Item #599502-01). The purchase will be made in advance of the 2019 sampling season.

Supplies

Software

APCC will purchase software for data analysis, statistical analysis and plotting. An estimate of \$500 is budgeted (Task 3). APCC source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$335. APCC's match: \$165.

Workshop Supplies

APCC plans meetings to announce the State of the Waters report and has included an estimate of \$750 for supplies (Task 5). Source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$502.50. APCC's match: \$247.50.

WBNERR has budgeted \$1,500 in supplies to support end user meetings and watershed-based workshops to translate data to decision-makers (Task 2, Task 5).

Contractual

Database QA/QC

The Commission will advertise and competitively award a contract to a qualified firm to perform quality assurance and control on the existing database and develop procedures for ensuring quality assurance and control on data loaded to the database in the future (Task 1). A budget estimate of \$20,000 is based on previous experience.

QAPP Development

The Commission will comply with State law, County policies and Uniform Guidance related to procurement and competitively award a contract to a qualified firm to develop a QAPP for pond and lake data (Task 1). A budget estimate of \$7,500 is based on previous experience and funds for the QAPP Development will be provided by the Cape Cod Commission.

OneCape Summits

The Commission will hold two OneCape Summits during the project period. The work proposed in this project will be highlighted at each and each will be used as an opportunity to share data outputs, analyses and available information products. A budget estimate of \$20,000 for venue and audio-visual equipment for two conferences is based on previous experience. The Commission will comply with State law, County policies and Uniform Guidance related to procurement and competitively award a contract to a venue to host the Summits. SNEP request: \$10,000. Commission's match: \$10,000.

Cape Coastal Conference and Workshops

Venue rental fees and fees associated with audio visual equipment are anticipated to support watershed-based workshops and other outreach initiatives, including the Cape Coastal Conference, where project outputs, analyses and information products will be highlighted (Task 2, Task 5). An estimate of \$6,000 is budgeted based on previous experience.

Web Design

APCC will comply with State law and Uniform Guidance related to procurement and competitively award a contract to a qualified web design firm to create a State of Waters website (Task 4). A budget estimate of \$20,000 is based on previous experience. APCC source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$13,400. APCC's match: \$6,600.

TMDL Solutions

TMDL Solutions will work with SMAST to support and provide guidance on data analysis and interpretation (Task 2). SNEP request: \$3,500.

Dr. Scott Doney

Dr. Doney will advise Ms. Rheuban and project partners on biogeochemical data analysis and assist with data interpretation (Task 3). \$12,339 in consulting charges is provided as in-kind match by WHOI.

Indirect Cost

Cape Cod Commission

In accordance with 2 CFR Part 200 App. VII D1b, the Commission, a local government agency that receives less than \$35 million in direct Federal funding, is not required to obtain NICRA. The Commission's audited FY17 indirect rate is 71.90% and is applied to direct labor only. CCC indirect costs included in the SNEP request (\$24,863) are within 25% indirect cost limit. This indirect cost rate equals to 27.16% rate if applied to the Commission's Modified Total Direct Costs of \$91,528.

Association to Preserve Cape Cod

Association to Preserve Cape Cod does not have Negotiated Indirect Cost Rate Agreement and de minimis indirect cost rate of 10% was applied to APCC's Modified Total Direct Costs of \$123,188. Total Indirect Cost: \$12,318.80. SNEP Request: \$9,044. APCC's match: \$3,274.

Waquoit Bay National Estuarine Research Reserve

Waquoit Bay National Estuarine Research Reserve does not have Negotiated Indirect Cost Rate Agreement and de minimis indirect cost rate of 10% was applied to WBNERR's Modified Total Direct Costs. Total Direct cost amount of \$52,875 was reduced by the estimated cost of equipment (\$6,500) for Modified Total Direct Costs of \$46,375. Total Indirect Cost: \$4,637. SNEP Request: \$3,289. WBNERR's match: \$1,348.

Woods Hole Oceanographic Institution

Woods Hole Oceanographic Institution has a Negotiated Indirect Cost Rate Agreement with Department of the Navy, Office of Naval Research, dated January 5, 2018, for the period of 1/1/18 – 12/31/18 (attached) The provisional indirect cost rate for 2018 is 62% and is allocated to Modified Total Direct Costs. Total Indirect Costs: \$49,889 (MTDC base of \$80,467). SNEP request: \$26,822 (25% of the agency request of \$107,289). WHOI's match: \$23,066.

Center for Coastal Studies

Center for Coastal Studies has submitted their Indirect Cost Proposal dated November 30, 2017 to the US Department of Commerce, NOAA Grants Division. CCS has received a letter from NOAA, dated January 31, 2018, stating that Center for Coastal Studies may use their indirect cost rate of 50.31% cited in its Indirect Rate Cost Proposal until the Proposal evaluation process is completed (attached). Indirect Cost rate of 50.31% was applied to MTDC of \$16,192.80. Total Indirect Cost: \$8,147. SNEP Request: \$4,429 (25% of the CCS request of \$17,715). CCS's match: 3,718.

UMass Dartmouth School for Marine Science and Technology

UMass Dartmouth has a Negotiated Indirect Cost Rate Agreement with the Department of Health and Human Services, dated March 10, 2017 (attached). The predetermined rate of 59% is effective for the period of 7/1/18 – 6/30/2010 and has been applied to MTDC of \$15,254. UMass Dartmouth SMAST has elected to include only \$1,175.40 of the indirect costs in their SNEP request and to apply the difference towards their match. Total Indirect Cost: \$9,000. SNEP request: \$1,175. UMass Dartmouth SMAST's match: \$7,825.

Total Indirect Costs included in the SNEP request (\$69,624) equal to 17.41% of the total amount of \$399,998 requested from SNEP for the proposed project.

Grant Totals Per Task

	Total Project Cost Per Task			
	Cost Item	SNEP	Non-Federal Match	Total
Task 1	Salaries & Fringes	46,558.28	24,898.39	71,456.68
	RAE Summit	1,001.67	165.00	1,166.67
	In-State Travel	182.58	89.93	272.50
	QA/QC Database	20,000.00	-	20,000.00
	QAPP Development	-	7,500.00	7,500.00
	Equipment	6,500.00	-	6,500.00
	Indirect Cost	10,314.72	8,460.99	18,775.71
Subtotal:		\$ 84,557	\$ 41,114	\$ 125,672
Task 2	Salaries & Fringes	42,847.38	3,601.53	46,448.92
	RAE Summit	666.67	-	666.67
	Workshop Supplies	750.00	-	750.00
	Cape Coastal Conference	2,500.00	-	2,500.00
	Indirect Cost	11,248.60	9,288.09	20,536.68
Subtotal:		\$ 58,013	\$ 12,890	\$ 70,902
Task 3	Salaries & Fringes	64,364.61	4,653.33	69,017.95
	RAE Summit	1,001.67	165.00	1,166.67
	In-State Travel	182.58	89.93	272.50
	Software	335.00	165.00	500.00
	TMDL Solutions	3,500.00	-	3,500.00
	Dr. Scott Donney & Travel	4,798.00	12,339.00	17,137.00
	Indirect Cost	22,022.25	19,109.62	41,131.87
Subtotal:		\$ 96,204	\$ 36,522	\$ 132,726
Task 4	Salaries & Fringes	71,867.10	19,744.97	91,612.07
	RAE Summit	1,001.67	165.00	1,166.67
	In-State Travel	182.58	89.93	272.50
	Web Design	13,400.00	6,600.00	20,000.00
	Indirect Cost	20,145.69	9,154.09	29,299.78
Subtotal:		\$ 106,597	\$ 35,754	\$ 142,351
Task 5	Salaries & Fringes	28,891.78	6,297.26	35,189.04
	RAE Summit	1,001.67	165.00	1,166.67
	In-State Travel	182.58	89.93	272.50
	Workshop Supplies	1,252.50	247.50	1,500.00
	OneCape Conferences	10,000.00	10,000.00	20,000.00
	Cape Coastal Conference	3,500.00	-	3,500.00
	Indirect Cost	4,492.26	1,038.66	5,530.92
Subtotal:		\$ 49,321	\$ 17,838	\$ 67,159
Task 6	Salaries & Fringes	3,239.28	1,079.76	4,319.04
	RAE Summit	666.67	-	666.67
	Indirect Cost	1,400.00	466.67	1,866.67
Subtotal:		\$ 5,306	\$ 1,546	\$ 6,852
TOTAL:		\$ 399,998	\$ 145,665	\$ 545,663

LIST OF ATTACHMENTS

Maps, photos, drawings, and additional information

- Attachment A. Map of Project Area
- Attachment B: Report Card Examples
- Attachment C: Project Team
- Attachment D: Literature Cited

Letters of Commitment

- Association to Preserve Cape Cod
- Buzzards Bay Coalition
- Cape Cod Water Protection Collaborative
- Center for Coastal Studies
- UMass Dartmouth School for Marine Science and Technology
- Waquoit Bay National Estuarine Research Reserve
- Woods Hole Oceanographic Institution

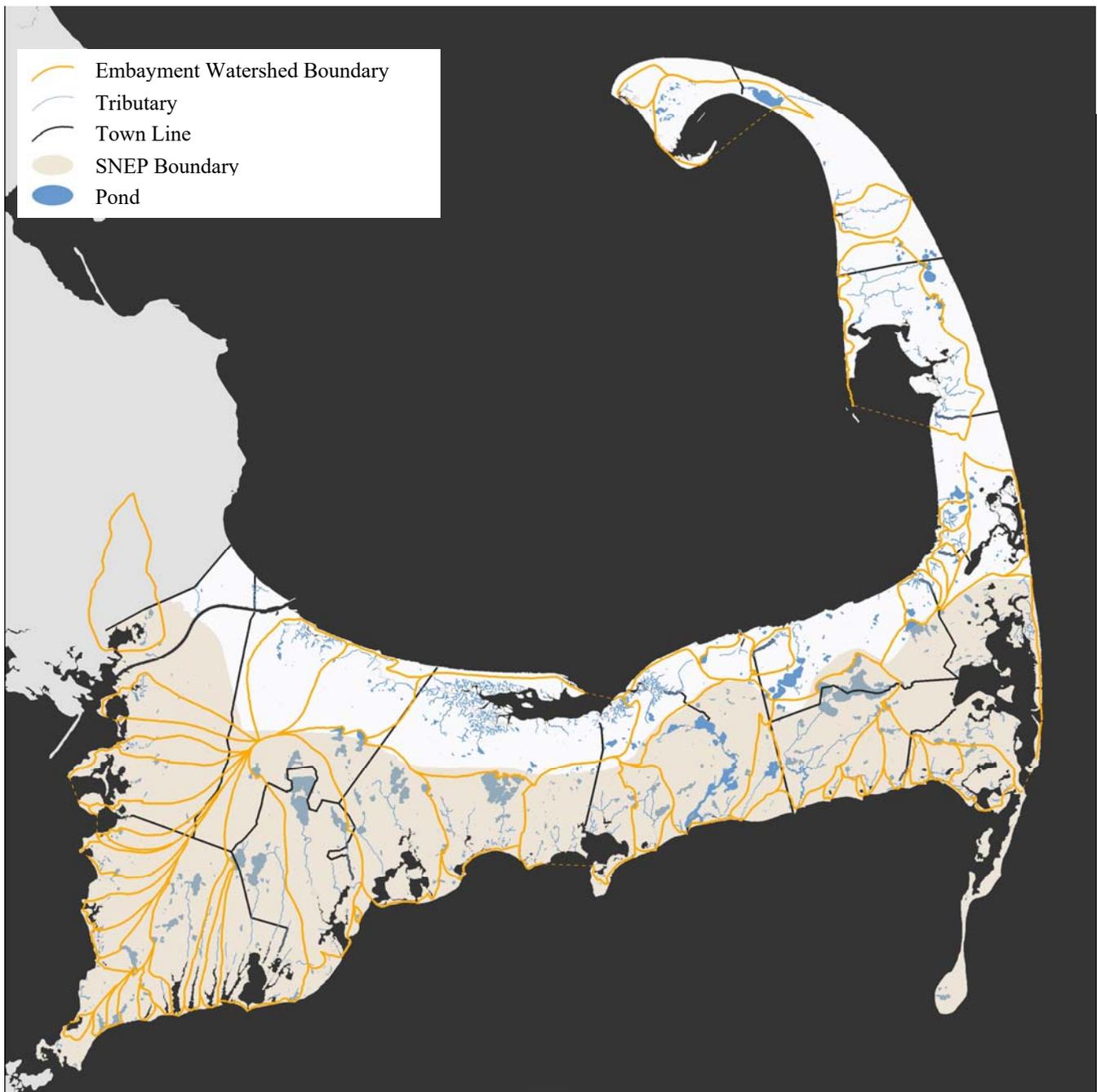
Organizational Budget and Statement of Financial Position

- Barnstable County Approved FY19 Operating and Capital Budget – Cape Cod Commission
- Barnstable County's Basic Financial Statements
 - Summary of Auditor's Results, Schedule of Findings and Questioned Costs
 - Expenditures and Changes in Fund Balances
 - Schedule of Fringe and Indirect Cost Rate – Cape Cod Commission

Negotiated Indirect Cost Rate Agreements

- Center for Coastal Studies
- UMass Dartmouth School for Marine Science and Technology
- Woods Hole Oceanographic Institution

Attachment A: Map of Project Area



Map of Project Area: The proposed project area includes all of Barnstable County. Approximately 60% of Cape Cod is within the SNEP boundary. Almost all the watersheds on Cape Cod that fall within the SNEP boundary are nitrogen impaired and have established total maximum daily loads or Massachusetts Estuaries Project Technical Reports documenting degradation and nitrogen thresholds.

Attachment B: Report Card Examples

California

- Elkhorn Slough National Estuarine Research Reserve. Elkhorn Slough Water Quality Report Card. <http://www.elkhornslough.org/waterquality-reportcard/>.
- California Environmental Protection Agency, State Water Resources Control Board. 2014-2015. https://www.waterboards.ca.gov/about_us/performance_report_1415/plan_assess/11112_tmdl_outcomes.shtml.
- Heal the Bay. Beach Report Cards for California beach water quality. <http://beachreportcard.org/default.aspx?tabid=4>.

Chesapeake Bay

- Chesapeake Bay Report Card. <https://ecoreportcard.org/report-cards/chesapeake-bay> .

Florida

- Florida Department of Environmental Protection. Interactive Water Quality Report Cards. <https://floridadep.gov/dear/watershed-monitoring-section/content/interactive-water-quality-report-cards>

Great Lakes

- Donahue, Michael J. January 2002. The Great Lakes: A Report Card. <https://scholarlycommons.law.case.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1451&context=cuslj>.
- Mills County Watershed Report Card. http://erieconserves.org/wp-content/uploads/mills_report_card.pdf.

Maine

- Natural Resources Council of Maine. 2014 Report Card for Maine. https://www.nrcm.org/wp-content/uploads/2013/09/2014_legislative_reportcard.pdf.

Massachusetts

- Blackstone River Watershed Interactive Water Quality Map. http://zaptheblackstone.org/interactive_map/index.php.
- Environmental Protection Agency, Region 1. 2017. Charles River water quality earns a “B” in 2015. <https://www.epa.gov/newsreleases/charles-river-water-quality-earns-b-grade-2016>.
- Massachusetts Water Resources Authority. 2014. EPA’s annual report card gives the Charles River an A- . <http://www.mwra.com/01news/2014/091114-epa-report-card-charles-river-a-.html>.
- Mystic River Report Card. 2016. <https://mysticriver.org/epa-grade/>.
- Mystic River Watershed Report Card. 2016. 2016 Mystic River Watershed Report Card Frequently Asked Questions. <https://www.epa.gov/mysticriver/2016-mystic-river-watershed-report-card-frequently-asked-questions>.
- Report of the Buzzards Bay Citizens’ Water Quality Monitoring Program 1992-1995. <http://buzzardsbay.org/bbpreports/1996-buzzards-bay-water-quality-monitoring-report.pdf>.
- Save the Harbor/Save the Bay. Annual Beach Water Quality Report Card on the Metropolitan Region’s public beaches. 2017. Report on 2016 beach water quality at 15 public beaches in 10 communities in the Boston area (Lynn, Swampscott, Nahant, Revere, Winthrop, East Boston, South Boston, Dorchester, Quincy and Hull). <http://www.savetheharbor.org/Content/beachesreportcard/>.
- Taunton River Watershed Alliance. 2017. 2016 Water Quality Report Card. <https://savethetaunton.org/2017/02/15/2016-water-quality-report-card/>.

New Hampshire

- New Hampshire Department of Environmental Services. Watershed Report Cards. https://www.des.nh.gov/organization/divisions/water/wmb/swqa/report_cards.htm.

New York

- Long Island Sound Water Report Cards. <https://ecoreportcard.org/report-cards/long-island-sound/>.

Oregon

- City of Portland, Oregon, Watershed Report Card. <https://www.portlandoregon.gov/bes/62109>.
- State of Oregon. Water Quality Index. <http://www.oregon.gov/deq/wq/Pages/WQI.aspx>.
- Willamette River (Oregon) Report Card. <http://www.oregon.gov/deq/wq/Pages/Willamette-River-Report.aspx>.
- Heal the Bays. Beach Report Card for Oregon. <http://beachreportcard.org/?st=OR&f=1>.

Texas

- Mission-Aransas National Estuarine Research Reserve. Little Bay Report Card. <https://missionaransas.org/little-bay-report-card>.

U.S.

- Environmental Working Group. 2017. Clean Water Report Card: Failing Grades. https://static.ewg.org/reports/2000/FailingGrades.pdf?_ga=2.72469146.882043222.1512587101-937361266.1512587101.

Washington State

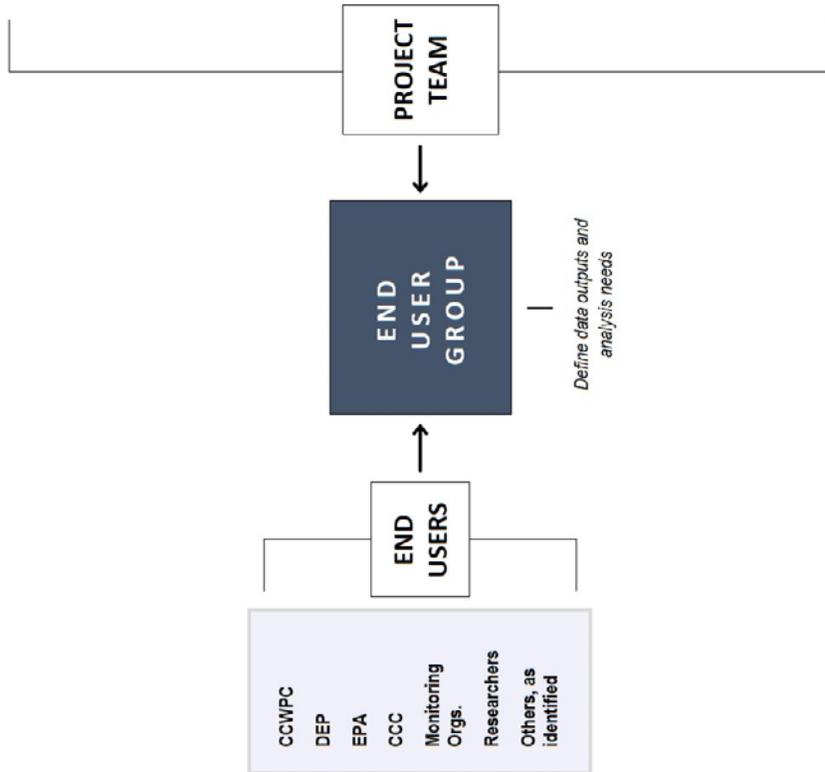
- Pierce County, Washington. 2016 Report Card on Surface Water Health. <https://www.piercecountywa.org/ArchiveCenter/ViewFile/Item/5481>.

International

- World Wildlife Fund. Healthy Rivers for All. <https://www.worldwildlife.org/initiatives/healthy-rivers-for-all>.

Attachment C: Project Team

Woods Hole Oceanographic Institution	<p>Analysis Lead</p> <ul style="list-style-type: none"> Data analysis Processing script development Pilot watershed implementation Integration with database for future analysis and reporting
Waquoit Bay National Estuarine Research Reserve	<p>Collaboration Lead Data and Analysis Advisor</p> <ul style="list-style-type: none"> Provide data Project advisor Quality assurance/control guidance Data analysis advisor Structure collaboration process Facilitate end user meetings
UMass Dartmouth School for Marine Science and Technology	<p>Data and Analysis Advisor</p> <ul style="list-style-type: none"> Provide data Project advisor Quality assurance/control guidance Data analysis advisor
Center for Coastal Studies	<p>Data and Analysis Advisor</p> <ul style="list-style-type: none"> Provide data Project advisor Quality assurance/control guidance Data analysis advisor
Association to Preserve Cape Cod	<p>Information Products Lead</p> <ul style="list-style-type: none"> Integrate water resources data and analyses into information products Create water resources report cards Develop regional State of the Waters report Complete Freshwater data
Cape Cod Commission	<p>Project Lead</p> <ul style="list-style-type: none"> Lead project activities Coordinate tasks and track progress with project partners Database management Lead communication with project partners Data compilation and analysis



AGENDA ITEM 8c

Authorizing the execution of an amendment to a sub-award agreement, executed October 10, 2018, through the Cape Cod Commission, with Waquoit Bay Reserve Foundation, under the Cape Cod Commission's SNEP Watershed Grant project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" in the amount of \$42,684.00, for a period from October 1, 2018 through July 31, 2020, extending the period of performance through February 28, 2021

AMENDMENT TO SUBAWARD AGREEMENT
BETWEEN

Barnstable County through
Cape Cod Commission
3225 Main Street
Barnstable, MA 02630

and

Waquoit Bay Reserve Foundation
P.O. Box 3522
Waquoit, MA 02536

Federal Award Identification Number: 00A00370
Federal Award Date: October 1, 2017
Federal Awarding Agency: U.S. Environmental Protection Agency through Restore America's Estuaries
Subaward Date: September 1, 2018
Subaward to the Cape Cod Commission: \$399,998
Subaward Number: SNEPWG18-9-CCC
CFDA Number/Name: 66.129 – Southeast New England Coastal Watershed Restoration
FFATA Reportable: yes
Research & Development: no

Subaward Start Date: October 1, 2018
Subaward Amount: \$42,684
Subrecipient NICRA: N/A
Subrecipient Match: \$14,829
Subrecipient DUNS:
Original Subaward Expiration Date: July 31, 2020
Amended Subaward Expiration Date: February 28, 2021

Project Contacts:

Erin Perry, Special Project Manager
eperry@capecodcommission.org
508-744-1236

Gail Coyne, Chief Fiscal Officer
gcoyne@capecodcommission.org
508-744-1202

Subrecipient Project Contacts:

Tonna-Marie Rogers,
tonna-marie.surgeon-rogers@state.ma.us
508-457-0495 ext. 110

Rich Donnelly, WBRF Fiscal Coordinator
rich.wbrf@gmail.com

THIS SUBAWARD AGREEMENT (the "Agreement") made the 10th of October, 2018 by and between Barnstable County, acting by and through the Cape Cod Commission (the "Recipient") and Waquoit Bay Reserve Foundation (the "Subrecipient") so that the Subrecipient may partner with the Recipient in a project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" (the "Project") funded through the Southeast New England Program (SNEP) Watershed Grants, is hereby amendment as follows:

All work in connection with the subaward agreement shall continue until February 28, 2021.

This Amendment does not change any stipulation of the original, previously defined Subaward Agreement.

IN WITNESS WHEREOF, Recipient and Subrecipient have executed this Amendment this 5th day of February in the year two thousand and twenty.

FOR BARNSTABLE COUNTY COMMISSIONERS:


Ron Bergstrom, Chair


Mary Pat Flynn, Vice-Chair


Ron Beaty, Commissioner

02/05/20
Date

FOR WAQUOIT, BAY RESERVE FOUNDATION:

 President

Feb 3 2020
Date

FOR THE COMMISSION:


Kristy Senatori, Executive Director

2/4/20
Date

COMMONWEALTH OF MASSACHUSETTS

BARNSTABLE, SS.

At a regular meeting of the Barnstable County Board of Regional Commissioners, in the Commissioners' Conference Room, in the Superior Courthouse, on the fifth day of February, A.D. 2020, motion by Commissioner Beaty to authorize the execution of an amendment to a sub-award agreement, executed October 10, 2018, through the Cape Cod Commission, with Waquoit Bay Reserve Foundation, under the Cape Cod Commission's SNEP Watershed Grant project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" in the amount of \$42,684.00, for a period from October 1, 2018 through July 31, 2020, extending the period of performance through February 28, 2021, as presented, 2nd by Commissioner Flynn, approved 0-0-0

Ronald Bergstrom, Chair:	<u>Y</u>
Mary Pat Flynn, Vice-Chair:	<u>Y</u>
Ronald R. Beaty, Commissioner:	<u>Y</u>

A true copy, attest, February 5, 2020


Janice O'Connell, Regional Clerk



SUBAWARD AGREEMENT
BETWEEN

Barnstable County through
Cape Cod Commission
3225 Main Street
Barnstable, MA 02630

and

Waquoit Bay Reserve Foundation
P.O. Box 3522
Waquoit, MA 02536

Federal Award Identification Number: 00A00370
Federal Award Date: October 1, 2017
Federal Award Amount: \$7,361,002
Federal Awarding Agency: U.S. Environmental Protection Agency through Restore America's Estuaries
Subaward Date: September 1, 2018
Subaward to the Cape Cod Commission: \$399,998
Subaward Number: SNEPWG18-9-CCC
CFDA Number/Name: 66.129 – Southeast New England Coastal Watershed Restoration
FFATA Reportable: yes
Research & Development: no

Subaward Start Date: October 1, 2018
Subaward Amount: \$42,684
Subrecipient NICRA: N/A
Subrecipient Match: \$14,829
Subrecipient DUNS:
Subaward Expiration Date: July 31, 2020

Project Contacts:

Erin Perry, Special Projects Manager
eperry@capecodcommission.org
508-744-1236

Gail Coyne, Chief Fiscal Officer
gcoyne@capecodcommission.org

Subrecipient Project Contacts:

Tonna-Marie Rogers, Acting Manager /
Coastal Training Program Coordinator
tonna-marie.surgeon-rogers@state.ma.us
508-457-0495 ext. 110

Rich Donnelly, WBRF Fiscal Coordinator
rich.wbrf@gmail.com

THIS SUBAWARD AGREEMENT (the "Agreement") is being entered into by and between Barnstable County, acting by and through the Cape Cod Commission (the "Recipient") and Waquoit Bay Reserve Foundation (the "Subrecipient") so that the Subrecipient may partner with the Recipient in a project titled "Regional Collection & Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making" (the "Project") funded through the Southeast New England Program (SNEP) Watershed Grants.

1. Background and Prime Award. U.S. Environmental Protection Agency and Restore America's Estuaries entered into Cooperative Agreement #00A00370 (hereafter referred to as Prime Award) to fund the Southeast New England Watershed Grants Projects. Restore America's Estuaries and the Cape Cod Commission entered into a subrecipient agreement #SNEPWG18-9-CCC to fund the Project. Under the terms of this Agreement, the Recipient awards funds to the Subrecipient for its participation in the Project. Although funds to be provided to the Subrecipient under this Agreement will come ultimately from the U.S. Environmental Protection Agency and Restore America's Estuaries, Subrecipient acknowledges that U.S. Environmental Agency and Restore America's Estuaries are not Parties to this Agreement and have no obligations directly to Subrecipient under this Agreement. Notwithstanding the above, Subrecipient will be subject to and will comply with the terms and conditions contained in the Prime Award which are applicable to the Subrecipient, which are attached hereto as Attachment B and incorporated herein by reference.

2. Scope of Services/Budget. The Subrecipient will perform the scope of services for a maximum subaward of \$42,684 as set forth in Attachment A. The Subrecipient agrees to provide a non-federal match of \$14,829 in project-related costs as described in the budget.

3. Disbursements and Accounting. The Subrecipient will separately account for expenditures made and payments received under this Subaward in its accounting records. The Recipient will not be obligated to pay Subrecipient for any costs not detailed in Attachment A and will be under no obligation to disburse funds to the Subrecipient under the Agreement, except to the extent that funds are disbursed to the Recipient under the Prime Award. Disbursements will be made to Subrecipient on a reimbursement basis no more frequently than quarterly, based upon receipt of a complete and accurate Financial Report for the applicable period. Payments will be sent to Subrecipient via check.

4. Administration: The Subrecipient agrees to comply with the Prime Award Terms and Conditions detailed in Attachment B and with 2 CFR 200 Uniform Guidance.

5. Reporting:

- Performance/Progress Reports – deliverables and progress reports per Attachment A are due 10 days after the quarters ending March 31, June 30, September 30, and December 31. A final report due within 30 days of Project completion (no later than August 31, 2020). The Subrecipient should refer to the detailed progress report requirements in Attachment B, Prime Award Conditions and its Attachment 1: Progress Report Requirements and Attachment 2: Final Report Requirements.
- Financial Reports – quarterly financial reports are due 10 days after the quarters ending March 31, June 30, September 30, and December 31. A final financial report is due within 30 days of project completion (no later than August 31, 2020). The Subrecipient should refer to the Summary Budget Table reporting requirements also in Attachment B, Prime Award Conditions and its Attachment 1: Progress Report Requirements and Attachment 2: Final Report Requirements.

6. Termination or Suspension of Agreement for Cause. If through any sufficient cause, the Subrecipient or the Recipient fails to fulfill or perform its duties and obligations under this Agreement, or if either party violates or breaches any of the provisions of this Agreement, either party will thereupon have the right to terminate or suspend this Agreement, by giving written notice to the

other party of such termination or suspension and specifying the effective date thereof. Such notice will be given at least fifteen (15) calendar days before such effective date.

7. Termination for Convenience of Recipient. The Recipient will have the right to discontinue the work of the Subrecipient and cancel this Agreement by written notice to the Subrecipient of such termination and specifying the effective date of such termination. In the event of such termination or suspension of this Agreement, the Subrecipient will be entitled to just and equitable compensation for satisfactory work completed, for services performed and for reimbursable expenses necessarily incurred in the performance of this Agreement up to and including the date of termination or suspension.

8. Recordkeeping, Audit, and Inspection of Records. The Subrecipient agrees to maintain books, records, documents and other evidence pertaining to all costs and expenses incurred and revenues acquired under this Subaward (collectively "Records") to the extent and in such detail as will properly reflect all costs and expenses for which reimbursement is claimed. The Records will be maintained in accordance with 2 CFR 200.333. As may be requested, the Subrecipient will provide timely and unrestricted access to its books and accounts, files and other Records with respect to the Project for inspection, review and audit by the Recipient, Restore America's Estuaries, U.S. Environmental Protection Agency and their authorized representatives. Upon inspection, review or audit, if the Recipient, Restore America's Estuaries, or U.S. Environmental Protection Agency disallows any costs claimed by the Subrecipient related to this Agreement, the Subrecipient will be responsible for reimbursing the Commission for any of those costs.

If the Subrecipient has a single audit performed in accordance with Uniform Guidance, the Subrecipient must electronically submit (within the earlier of 30 calendar days after receipt of the auditor's report, or nine months after the end of the audit period) to the Federal Audit Clearinghouse (FAC) the data collection form and the reporting package. The collection form must be obtained from the FAC webpage. The reporting package must include the Financial Statements and Schedule of Expenditures of Federal awards, the summary schedule of prior audit findings, the auditors reports and a corrective action plan. If the Subrecipient does not submit the form and package within the required timeframe, the Recipient may perform additional monitoring of the award.

9. Title to and Use of Work Products and Data. Except to the extent otherwise provided in the Prime Award, all completed work products funded by this Agreement are in the public domain, free of copyright or other intellectual property protections.

10. Announcements and Acknowledgments. All public announcements or news stories concerning the Project will be subject to the prior approval of the Recipient and will indicate the participation of the Recipient, SNEP, Restore America's Estuaries, and U.S. Environmental Protection Agency in the funding of the Project.

11. Liability and Indemnification. The work done by or for the Subrecipient under this Agreement will be performed entirely at the risk of Subrecipient. The Subrecipient will be solely responsible for the payment of any and all claims with respect to, any loss, personal injury, death, property damage, or otherwise, arising out of any act or omission of its employees or agents in connection with the performance of its work, and Subrecipient will indemnify and defend the Recipient, Restore America's Estuaries, and U.S. Environmental Protection Agency, and each of its officers, directors, employees, and agents (in each case, an "Indemnified Party") against, and shall hold each Indemnified Party harmless of and from, any and all claims, liabilities, losses, costs, damages, and other expenses of any kind or nature whatsoever (including, but not limited to, attorneys' fees and expenses, as well as costs of suit, which any Indemnified Party may incur as a result of or in connection with the Project, or which may cause the Commission to be in default under the Prime Award.

12. Choice of Law. This Agreement will be construed under and governed by the laws of the Commonwealth of Massachusetts. The Subrecipient and the agents thereof, agree to bring any federal or state legal proceedings arising under this Agreement, in which the Commission is a party, in a court of competent jurisdiction within the Commonwealth of Massachusetts. This paragraph will not be construed to limit any rights a party may have to intervene in any action, wherever pending, in which the other is a party.

13. Force Majeure. Neither party will be liable to the other nor be deemed to be in breach of this Agreement for failure or delay in rendering performance arising out of causes factually beyond its control and without its fault or negligence. Such causes may include but are not limited to: acts of God or the public enemy, wars, fires, floods, epidemics, strikes, or unusually severe weather. Dates or times of performance will be extended to the extent of delays excused by this section, provided that the party whose performance is affected notifies the other promptly of the existence and nature of such delay.

14. Compliance with Laws. The Subrecipient will promptly comply with all applicable laws, rules, regulations, ordinances, orders and requirements of the Commonwealth and any state or federal governmental authority relating to the delivery of the services described in this Agreement.

15. Headings, Interpretation and Severability. The headings used herein are for reference and convenience only and will not be a factor in the interpretation of the Agreement. If any provision of this Agreement is declared or found to be illegal, unenforceable, or void, then both parties will be relieved of all obligations under that provision. The remainder of the Agreement will be enforced to the fullest extent permitted by law.

IN WITNESS WHEREOF, Recipient and Subrecipient have executed this Agreement this 20th day of November in the year two thousand and eighteen.

FOR BARNSTABLE COUNTY COMMISSIONERS:

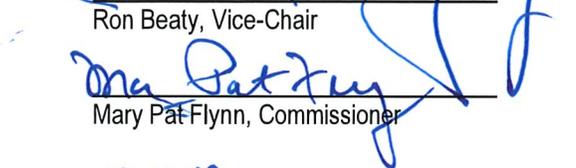
FOR WAQUOIT BAY RESERVE FOUNDATION:



Leo Cakounes, Chair



Ron Beaty, Vice-Chair



Mary Pat Flynn, Commissioner



Nov 20 2018
Date

10-10-18
Date

FOR THE COMMISSION:



Kristy Senatori, Executive Director

10/10/18
Date

ATTACHMENT A SCOPE OF WORK/DELIVERABLES/BUDGET

TASKS

WBNERR and WBRF personnel will work with Cape Cod Commission staff and other project partners to complete tasks associated with the project titled "Regional Collection and Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making". Project tasks include:

- Task 1: Data integration, quality assurance and control
- Task 2: Collaboration with end users and pilot project
- Task 3: Data analysis and development of a processing script
- Task 4: Integration with web-based user interface and other information products
- Task 5: Targeted outreach to inform local action
- Task 6: Final report

WBNERR and WBRF staff will work with the project team on tasks associated with refining the regional water quality database to ensure quality assurance and control, providing advice on region-wide data analyses, and developing and implementing a collaborative end user process that engages those in a position to apply the overall project deliverables.

The following work will be completed by WBNERR and WBRF staff (in parenthesis is the project task each is associated with):

- Working with the project partners and consultants to develop and agree upon quality assurance and control procedures for both historic and future water quality data (Task 1)
- Development of a Quality Assurance Project Plan (QAPP) for Waquoit Bay water quality monitoring data (Task 1)
- Providing historical water quality monitoring data for integration into the regional water quality monitoring database (Task 1)
- Working with water quality monitoring organizations to discuss the database interface, data needs, reporting procedures, data quality assurance and control protocols, and other processes necessary to complete the project (Task 1 and Task 2)
- Attending and participating in End User Group meetings on an approximately quarterly basis (Task 2)
- Coordinating with project partners during regularly scheduled project team meetings (Task 2)
- Working with project partners to ensure that end user collaboration is integrated throughout the project (Task 2)
- Designing an iterative and end user driven process that includes deliberate and diverse opportunities for decision-makers to contribute to project outcomes (Task 2)
- Establishing and coordinating with the End User Group and a pilot watershed group, including but not limited to coordinating their participation, meeting schedules and other logistics (Task 2)
- Facilitating quarterly End User Group meetings and two meetings of a pilot watershed group (Task 2)
- Working with a pilot watershed group to apply data and project outputs to inform decision-making (Task 2)
- Summarizing feedback from End User Group meetings and meetings of a pilot watershed group (Task 2)
- Holding a workshop to identify monitoring research gaps, including but not limited to areas where monitoring should or could be enhanced or streamlined, if new parameters are needed to capture key trends, if there are gaps in current monitoring efforts and what resources are needed to meet these gaps, and opportunities for more effective collaboration (Task 2)

- Working with the End User Group to define the metrics needed to inform local water quality planning (Task 2 and Task 3)
- Serving in an advisory capacity on data analysis (Task 3)

DELIVERABLES

- Historical Waquoit Bay water quality monitoring data
- QAPP for Waquoit Bay monitoring
- Documented collaborative process design
- Established End User Group
- End User and Pilot Watershed meeting summaries

TIMELINE

The project timeline is as follows:

	2018			2019												2020							
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Task 1																							
Data Compilation																							
Database QA/QC																							
WBNERR QAPP Development																							
Ponds and Lakes QAPP Development																							
Task 2																							
End User Group Mtgs																							
Monitoring Group Workshop																							
Identify Data Outputs/Analysis Needs																							
Pilot Watershed Interpretation																							
Identify Monitoring/Research Gaps																							
Task 3																							
Data Analysis/Script Development																							
Pilot Watershed Analysis/Interpretation																							
Task 4																							
Development of Report Card Template																							
Report Cards Released																							
"State of the Waters: Cape Cod" Released																							
Integrate Script with Database/Website																							
Task 5																							
Develop Targeted Outreach Schedule																							
Targeted Outreach/Workshops/Meetings																							
Task 6																							
Final Report																							

To maintain the proposed timeline and achieve associated milestones, WBNERR and WBRF deliverables should be delivered no later than the following:

- Historical Waquoit Bay water quality monitoring data – December 31, 2018
- QAPP for Waquoit Bay monitoring – May 31, 2019
- Documented collaborative process design – November 30, 2018
- Established End User Group – December 31, 2018
- End User and Pilot Watershed meeting summaries – No more than 30 days following each meeting

WBRF - SNEP Watershed Grant Budget					
Cost Item or Category	Cost Basis	RAE SNEP Request	Non-Federal Match	Match Source	Total Project Cost
Personnel					
Outreach & Engagement As	850 hrs. @ \$25.00	21,250.00	-		21,250.00
WQ Monitoring Assistant	206 hrs. @ \$20.12	4,144.72	-		4,144.72
Waquoit BayWatcher Volun	546 hrs. @ \$24.69	-	13,480.74	WBRF/WBNERR	13,480.74
					-
					-
					-
Total Personnel		25,394.72	13,480.74		38,875.46
Fringe					
Fringe, CCC		-	-		-
Fringe, APCC					-
Fringe, CCS					-
Fringe, SMAST					-
Fringe, WBRF					-
Fringe, WHOI					-
Total Fringe		-	-		-
Travel					
In-state travel	xxx mi @ \$0.545				-
Out-of-state travel (RAE Summit 2018)			-		-
					-
Total travel		-	-		-
Equipment					
WQ Monitoring Equipment		6,500.00			6,500.00
					-
Total Equipment		6,500.00	-		6,500.00
Supplies					
Workshop Supplies		1,500.00	-		1,500.00
					-
Total Supplies		1,500.00	-		1,500.00
Contractual					
QAQC Database					-
Workshop Expenses (Venues and AV equip.)		6,000.00	-		6,000.00
					-
Total Contractual		6,000.00	-		6,000.00
TOTAL DIRECT		\$ 39,394.72	\$ 13,480.74		\$ 52,875.46
Modified Total Direct Costs		32,894.72	13,480.74		46,375.46
Indirect 10% of TMDC	10%	3,289.47	1,348.07		4,637.55
TOTAL (Total Direct + 10%TMDC)		\$ 42,684	\$ 14,829		\$ 57,513
Match Rate			34.74%		



2018 SNEP WATERSHED GRANTS

Subrecipient Agreement Between Restore America's Estuaries and Cape Cod Commission (Barnstable County)

September 1, 2018 – September 30, 2020

Contract #SNEPWG18-9-CCC

Points of Contact

For Restore America's Estuaries:

Thomas Ardito
401-575-6109
tardito@estuaries.org
P.O. Box 476, Saunderstown, RI 02874

For Cape Cod Commission (Barnstable County):

Erin Perry, Special Projects Manager
3225 Main St., Barnstable, MA 02630
508-744-1236
eperry@capecodcommission.org

This constitutes an agreement between Restore America's Estuaries (RAE or the Recipient) and Cape Cod Commission (Barnstable County) (CCC or the Subrecipient), regarding the responsibilities of each in their roles as Recipient and Subrecipient under the 2018 round of Southeast New England Program (SNEP) Watershed Grants, **EPA FAIN Grant #00A00370**, and its amendments and supplements.

1. Contract Documents: Contract documents shall consist of this agreement and the following attachments, all of which are incorporated by reference into this agreement.

Attachment 1: Progress Report Requirements

Attachment 2: Final Report Requirements

Attachment 3: Project workplan and budget.

2. Services: CCC agrees to perform services as described in the scope and budget provided in Attachment 3 of this agreement (hereinafter the “Project.”)

3. Contract Amount: Restore America’s Estuaries agrees to make available \$399,998 for use by CCC for the contract period. CCC agrees to expend this money in conformity with the scope and budget in Attachment 3 (the Project.) CCC agrees to provide \$145,665 in Project-related matching costs as described in the budget. Matching funds must be from non-federal sources and must be expended during the period of this agreement.

4. Contract Period: This agreement covers the period **September 1, 2018 through September 30, 2020**. Work shall be completed and all reimbursable expenses incurred by **August 31, 2020**.

5. Alterations: Any alterations in the scope of the work performed shall be submitted by the Subrecipient in writing to RAE, and must be approved in advance in writing by RAE. Cumulative transfers of funds among approved direct cost categories that exceed 10% of the total award must be approved by RAE in writing in advance.

For Subrecipients with a current Negotiated Indirect Cost Rate Agreement (NICRA) on file with a federal agency, amended budgets must maintain consistency with the NICRA and the requirements of the 2018 SNEP Watershed Grants Request for Proposals (RFP). For these Subrecipients, indirect costs may not exceed 25% of the award amount.

For Subrecipients without a current NICRA, amended budgets must maintain consistency with the requirements of the 2018 SNEP Watershed Grants RFP, and may not exceed 10% of Modified Total Direct Costs as described in the RFP.

6. Progress & Final Reports: The Subrecipient agrees to submit progress reports twice yearly, and a final report upon completion of the Project, according to the following schedule:

Report	Period Covered	Due Date
Progress #1	Sep. 1, 2018 – Dec. 31, 2018	Jan. 31, 2019
Progress #2	Jan. 1, 2019 – Jun. 30, 2019	Jul. 31, 2019
Progress #3	Jul. 1, 2019 – Dec. 31, 2019	Jan. 31, 2020
Progress #4	Jan. 1, 2020 – Jun. 30, 2020	Jul. 31, 2020
Final Report	Entire Project period (completion no later than Aug. 31, 2020)	30 days following completion of Project and no later than Sept. 30, 2020.

Progress and final reports will reference the goals and objectives included in Attachment 3 and indicate the progress that has been made toward each during the reporting period. Subrecipient agrees to prepare and submit progress and final reports as described above and in Attachments 1 & 2. RAE reserves the right to withhold payments if the Subrecipient has not submitted the reports on schedule or if reports are unsatisfactory in meeting the requirements of this agreement. See Attachments 1 & 2 for more information on reporting formats.

Final reports should be geared toward an audience broader than simply RAE – in other words, it should be designed to communicate Project outcomes and results in a meaningful way to end users, stakeholders and others who may be able to learn from or take advantage of, or learn from Project outcomes and results. In all cases the final report should include an executive summary providing a brief but complete overview of Project outcomes and results, as specified in Attachment 1. In the event that the final report is intended for a technical audience, the executive summary should be written for a general audience and suitable for such purposes as reporting to funding agencies, elected officials, general-interest media outlets, etc. See Attachment 2 for more information.

Be sure to take plenty of high-resolution photographs throughout the course of the Project for use in progress reporting and, most importantly, the final report and executive summary. See Attachments 1 & 2 for more information.

7. Collaboration and Communication: SNEP Watershed Grants Program supports the Southeast New England Program (SNEP), an initiative of the U.S. Environmental Protection Agency (EPA), Region 1. The mission of SNEP is to:

Foster collaboration among regional partners across southeast New England’s coastal watersheds to protect and restore water quality, ecological health and diverse habitats by sharing knowledge and resources, promoting innovative approaches, and leveraging economic and environmental investments to meet the needs of current and future generations.

More information about SNEP is available at

<https://www.epa.gov/snecwrp>

Strong local and regional partnerships are essential in carrying out the mission of SNEP. Subrecipient agrees to participate in SNEP through at least two workshops or conferences over the course of the Project.

Subrecipient agrees to acknowledge SNEP and RAE in communications with the media, the public, and elected officials about the Project, including all publications, work products, academic and general publications, videos, signage, press releases, etc. Signs, printed reports and similar materials should include the SNEP logo where practicable. Subrecipients may download high-resolution digital files of the SNEP logo at www.snepgrants.org.

Example acknowledgement language:

[Project name] is supported by the Southeast New England Program (SNEP) Watershed Grants. SNEP Watershed Grants are funded by the U.S. Environmental Protection Agency (EPA) through a collaboration with Restore America's Estuaries (RAE). For more on SNEP Watershed Grants, see www.snepgrants.org

Subrecipient will coordinate with RAE on outreach plans, events, products, and media coverage associated with the Project, so that RAE may assist with the development of outreach communications and messaging. Subrecipient should provide drafts of any outreach plans to RAE staff for review and input. In particular, all press releases should be shared with RAE in draft at least one week in advance of release to allow RAE the opportunity to provide comments, and a quote if requested.

Subrecipient agrees to provide copies of final outreach products, website mentions, press materials, photos, etc. via the standard progress reports to RAE, or when available throughout the award period.

Subrecipient will provide RAE with high-resolution before, during, and post-implementation photos of the Project. Photos of Project sites prior to construction and during Project implementation should be submitted with progress reporting or as requested by RAE.

Subrecipient will notify RAE of all significant Project-related meetings and events (Project team meetings, public meetings, public hearings and presentations, press events, commencement of construction, ribbon-cuttings, etc.) at least one week prior to the event.

SNEP Watershed Grants are federal funds. RAE will assume, therefore, that all completed work products funded by SNEP are in the public domain, free of copyright or other intellectual property protections, unless covered by another applicable agreement or requirement (e.g., university intellectual property policies). In the event that Project work

products are subject to other intellectual property requirements, the Subrecipient shall inform RAE of such requirements ***prior to signature*** of this grant.

Project implementation sites (e.g., best management practice (BMP) installations, construction areas, etc.) must display, where appropriate and practicable, a permanent sign indicating that the Project has received funding through the U.S. Environmental Protection Agency, Southeast New England Program, and Restore America's Estuaries, and including the SNEP logo. Signage should also identify other contributing partners.

8. Permits & Compliance: Subrecipient will ensure that implementation of the Project meets all federal, state and local environmental laws and consistency requirements, including EPA Quality Assurance Project Plan (QAPP) requirements.

9. Invoices: Subrecipient will invoice RAE at least quarterly and at most monthly for reimbursable Project expenses. Generally, payment of approved expenses will be by reimbursement by RAE; however, the Subrecipient may request advance payment if necessary.

In the event that advance funds are needed, requests should be made at least one month prior to the anticipated need for the funds.

Invoices must follow the following format:

- The invoice must be on organization letterhead.
- Reference the contract number.
- Include date of invoice and period covered.
- List the total amount of expenses and match incurred during the invoice period by approved grant budget categories, as contained in the line item budget in Attachment 3.
- Indicate the amount of cumulative expenses and match from the beginning of the budget period and the balance still available. This information should also be listed by approved grant budget categories, as contained in the line item budget in Attachment 3.
- Include a general description of work performed or costs incurred.
- List the Project task that the requested amount applies to. If the requested remittance amount applies to two or more Project tasks, the invoice must list the amount that will be applied to each.
- Cash and in-kind matching funds should be listed separately, and the source of all match identified.
- Include organization name, mailing address for payment, and any cost codes that should be included on the check.
- Invoices must be signed by an authorized representative of the organization.

Submit invoices in PDF format to:

snepgrants@estuaries.org

Note: Variances among approved direct cost categories that cumulatively exceed 10% of the total award must be approved by RAE in advance in writing.

10. Financial Records: Subrecipient agrees to maintain accurate records of all costs incurred in the performance of this work, including matching funds, and agrees to allow Restore America’s Estuaries, EPA, and their duly authorized representatives reasonable access to their records to verify the validity of expenses reimbursed under this agreement. Subrecipient agrees to maintain financial records, supporting documents and other records pertaining to this agreement for a period of three (3) years from the termination date of this agreement.

To comply with federal regulations, Subrecipient agrees to maintain a financial management system that provides accurate, current and complete disclosure of the financial status of the subaward. This means the financial system must be capable of generating regular financial status reports which indicate the dollar amount allocated for the award (including any budget revisions), the amount obligated, and the amount expended for each activity. The system must permit the comparison of actual expenditures and revenues against budgeted amounts.

Accounting records must be supported by source documentation. Invoices, bills of lading, purchase vouchers, payrolls and the like must be secured and retained for three (3) years in order to show for what purpose funds were spent. Payments should not be made without invoices and vouchers physically in hand. All vouchers and invoices should be on vendors' letterheads.

All employees paid in whole or in part from funds provided under this agreement must prepare a time sheet indicating the hours worked for each pay period. Personnel activity reports (i.e. timesheets) reflect an after-the-fact determination of the actual activity of each employee charging time to the agreement and must reflect all time spent by an employee and be signed by the employee or a supervisor. “Timesheets” are required only for those employees charging time to the Project, and then must reflect all time spent by the employee.

Subrecipient should keep records, based on these time sheets and the hourly payroll costs for each employee, indicating the distribution of payroll charges.

Subrecipient must maintain in its records documentation of non-federal Project-related matching costs in the amount specified in the budget under Attachment 3. Subrecipient agrees to adhere to federal rules and guidelines governing documentation and acceptability of Project-related matching costs.

Matching Contributions, whether in the form of cash, goods and services, or property, must be:

- 1) Non-federal in nature (Federally appropriated or managed funds are ineligible.);
- 2) Utilized for work in support of the Project;
- 3) Expended within the timeframe of this contract; and,

4) Voluntary in nature (Funds presented for fulfillment of mitigation, restitution, or other permit or court-ordered settlements are not eligible.). Subrecipients must document and maintain all records of matching contributions.

11. Audits: RAE reserves the right to audit some or all of the Project costs, expenses, payments, etc., either formally or informally, as the Project proceeds and/or upon completion.

In the event that the Subrecipient's total expenditures under federal awards exceed \$750,000 in a fiscal year, an audit meeting the requirements of 2 CFR 200 is required. It is the Subrecipient's responsibility to contract for this audit and to submit a copy to RAE no later than thirteen months after the close of the fiscal year to which the audit pertains, for fiscal years that fall in whole or in part within the period of this agreement. If an audit discloses findings or recommendations, Subrecipient agrees to include with the audit report a corrective action plan containing the following:

- The name and number of the person responsible for the corrective action plan.
- Specific steps to be taken to comply with the recommendations.
- A timetable for performance and/or implementation dates for each recommendation.
- Descriptions of monitoring to be conducted to ensure implementation.

In the event that the Subrecipient completes any other routine or required audits during the period of this grant (for example, an annual independent audit), the Subrecipient will inform RAE of the availability of the audit within 30 days of completion, and will provide RAE with a copy of the audit *if requested by RAE*.

12. Allowable and Unallowable Costs: SNEP Watershed Grants are federal funds. Subrecipient agrees to follow federal regulations as put forth in 2 CFR 200 and applicable OMB Circulars in determining allowable costs under this agreement. Subrecipient agrees not to use funds provided under this agreement for any cost that is unallowable under these regulations. Reimbursement by RAE for any cost that is later determined to be unallowable does not constitute sanction by RAE for the unallowable use of these funds.

13. Indemnification: The Subrecipient agrees to indemnify RAE against all losses for expenses incurred by the Subrecipient that are, or are later held to be, unallowable. Reimbursement by RAE to the Subrecipient for such costs does not negate nor in any way nullify the Subrecipient's responsibility under this provision.

As the direct Recipient of funds under this Award, RAE is responsible for the management of the award and is ultimately responsible for ensuring compliance with all federal requirements. The Subrecipient will cooperate with RAE in achieving compliance with the specific terms and conditions of the award, as well as the other terms and conditions specified in this agreement.

14. Project Data and Results: Sharing of Project data and results, including environmental data and analysis, is a SNEP priority. All information collected and/or created under this grant/cooperative agreement will be made visible, accessible and independently understandable to users in a timely manner (typically no later than one (1) year after the data are collected or created) free of charge or at minimal cost that is no more than the cost of distribution to the user.

Project results will similarly be made available in a timely manner, typically via the final report described above and in Attachment 2.

15. Signatures

For Restore America's Estuaries

By:  _____
Jeff Benoit, President & CEO

Date: 9-4-18

For Cape Cod Commission (Barnstable County):

By:  _____
Name & Title: Leo Cakounes, Ron Beaty, Mary Pat Flynn,
Barnstable County Commissioners

Date: 09/12/18

Attachments

- Attachment 1: Progress Report Requirements
- Attachment 2: Final Report Requirements
- Attachment 3: Project workplan and budget.



2018 SNEP WATERSHED GRANTS Subrecipient Agreement

Attachment 1: Progress Report Requirements

General Instructions

The Progress Report consists of:

1. Cover Information;
2. Project Report Narrative;
3. Project Budget Report;
4. Supporting Materials;
5. Certification.

Progress reports shall be completed and returned within one month of the end of a reporting period, using the following calendar:

Report	Period Covered	Due Date
Progress #1	Sep. 1, 2018 – Dec. 31, 2018	Jan. 31, 2019
Progress #2	Jan. 1, 2019 – Jun. 30, 2019	Jul. 31, 2019
Progress #3	Jul. 1, 2019 – Dec. 31, 2019	Jan. 31, 2020
Progress #4	Jan. 1, 2020 – Jun. 30, 2020	Jul. 31, 2020
Final Report	Entire Project period (completion no later than Aug. 31, 2020)	30 days following completion of Project and no later than Sept. 30, 2020.

If there was no Project activity during the period, a report should still be filed, explaining why there was no activity. Please use the template attached to these instructions to complete the progress report. The report should be submitted via email in PDF format to:

snepgrants@estuaries.org

The form may be signed electronically.

The following pages provide a template and instructions for progress reports. Use this format.

(Attach. 1 Cont'd)

**SNEP Watershed Grants
Progress Report Template**
Annotated with Instructions

1. Cover Information

Date

Project Name

Contract Number (SNEPWG18-###)

Grant Period (for entire Project)

Grantee Organization

Report Contact Person, with telephone & email

Project Leader (if different)

Reporting Period

Report Type and Number (e.g., Progress #2)

2. Project Report Narrative

Summarize the Project activities undertaken during the current reporting period within the following headings, building upon the narrative from previous reports, if any.

2.A. Results & Progress to Date

Describe in sufficient detail the goals of the Project, and the progress and results achieved during the current reporting period, building on the narrative from previous reports, if any.

Report accomplishments or setbacks on specific tasks as described in the scope of work, Attachment 3. This should include information such as:

- problems that the Project is addressing;
- short and long term objectives, and how they are being or have been met;
- relevance of the Project to restoring and protecting coastal and watershed ecosystems in the Southeast New England Region;
- activities carried out in this reporting period, including specific techniques and materials used;
- deliverables or milestones completed or partially completed during the reporting period (if partially completed, describe current status, percentage completion, etc.);
- findings to date or lessons learned during this reporting period;

- challenges or potential roadblocks to future progress (Note: If you have immediate concerns about the Project, please contact RAE to discuss the issue as soon as possible.)

2.B. Work Remaining Under Current Contract

Describe in sufficient detail the activities remaining and next steps to be completed under the current contract. Provide an updated timeline of major Project tasks, as applicable.

2.C. Compliance

Describe the status of Quality Assurance Project Plan (QAPP) completion, submittal and approval. List any permits required for the Project, and their status (e.g., not yet applied for, submitted and under review, approved on [date], etc.).

2.D. Project Partners

List major Project partners, and briefly note their contributions.

2.E. Volunteer and Community Involvement

Describe community support and any public involvement in the Project, including the specific roles of volunteers in Project activities. List the number of volunteers and hours that were contributed during this period. If volunteer time is being used as match, report this in the budget section, described below.

2.F. Outreach & Communications

Describe any outreach or educational activities (e.g. training, brochures, videos, press releases or public events) related to the Project. **Include PDF copies of press releases, outreach documents, newspaper articles, etc. as described under “Supporting Materials,” below.**

3. Project Budget Report

The budget report must provide sufficient information and detail to explain Project expenses, for the reporting period *and* cumulative-to-date, in the context of the objectives, tasks, and categories provided in the Project narrative and budget under Attachment 3. The budget report should be organized so that a reviewer can easily judge whether expenditures to date for the Project are tracking well with progress toward objectives and, if not, to understand why.

3.A. Summary Budget Table

Provide a summary budget table to show overall expenditures and match during the reporting period and cumulative-to-date, using the following format. Be sure to fully document match and match sources.

Summary Budget Table

	Budget Category	Total Budgeted Funds	Total Budgeted Match	Grant Funds Expended this period	Grant Funds Expended Cumulative	Match Funds Expended this period	Match Funds Expended Cumulative	Match Source
a	Personnel							
b	Fringe							
c	Travel							
d	Equipment							
e	Supplies							
f	Contractual							
g	Other							
h	Total Direct							
i	Indirect							
j	Total							

3.B. Detailed Project Budget Table

The centerpiece of the Project budget report is a budget table or tables utilizing the same cost categories and level of detail as the Project budget under Attachment 3. Report expenditures by category and, if applicable, task. Where a category is very broad, provide sufficient breakdown detail – for example, where “personnel” covers a number of individuals, show expenses for each individual; under “subcontracts” show expenses for each subcontract, etc. The table need only describe expenditures during the reporting period, rather than cumulatively. Add additional tables if need be to provide sufficient detail, or to summarize costs by task. **Where additional tables are used, ensure that the reviewer can easily understand how they relate to one another and the summary budget table.**

3.C. Budget Narrative

Use a budget narrative, keyed to the budget tables where necessary, to provide sufficient detail on expenditures and match. The budget narrative in the report may follow the format of the budget narrative in the Project budget under Attachment 3. Be sure to explain any deviations from the approved budget. The Subrecipient Agreement details requirements for prior approval for changes to Project budgets.

4. Supporting Materials

Include high-resolution digital copies, using PDF format for documents and JPG or TIFF format for images, of supporting materials related to the Project, including:

- Project maps and drawings;
- Technical memoranda, data analyses and modeling reports;
- Project photographs, including photos depicting implementation sites before, during, and after implementation; photos of Project signs, etc.;
- Press releases, news articles, brochures, educational curricula, etc.

In the event that file sizes for supporting materials are too large to attach, contact RAE to set up a shared cloud file.

5. Certification

Include this language: *The undersigned verifies that the descriptions of activities and expenditures in this progress report are accurate to the best of my knowledge; and that the activities were conducted in agreement with the grant contract. I also understand that matching fund levels established in the grant contract must be met.*

Grantee Signature:

Name:

Job Title

Date:

Organization:



2018 SNEP WATERSHED GRANTS Subrecipient Agreement

Attachment 2: Final Report Requirements

General Instructions

The Project final report follows the same format as interim progress reports, with several important differences:

- The final report covers the Project from beginning to end, describing the entire course of the Project, and presenting all expenditures and results;
- It includes lessons learned from the vantage point of the completed Project;
- It provides greater detail on both process and outcomes; and
- It includes an executive summary written for a general or general professional audience (more on this below).

The Final Report consists of:

0. Executive Summary;
1. Cover Information;
2. Project Report Narrative;
3. Project Budget Report;
4. Supporting Materials;
5. Certification.

The Final Report covers the entire Project period (completion no later than Aug. 31, 2020) and must be submitted within 30 days following completion of the Project (no later than Sept. 30, 2020.)

The report should be submitted via email in PDF format to:

snepgrants@estuaries.org

The form may be signed electronically.

The following pages provide a template and instructions for final reports. Use this format.

(Attach. 2 Cont'd)

**SNEP Watershed Grants
Final Report Template**
Annotated with Instructions

O. Executive Summary

The executive summary (ES) is most easily completed after the rest of the final report has been written; however, it is an essential component of the report and should not be treated as an afterthought. Communication, collaboration, learning and technology transfer are fundamental to the mission of the Southeast New England Program (SNEP). The executive summary will be a principal means by which outcomes of the Project are communicated; therefore, it should adhere to the following guidelines:

- The executive summary should be written and formatted so it can be used as a stand-alone report. It should make sense to a reader with no prior knowledge of the Project, and should be fully understandable independent of the rest of the final report or any other Project information or documentation.
- Follow the format and utilize the headings for the full final report (listed below), providing complete information on the Project, including a summary of costs and match.
- The ES should include its own title or cover page so that it can be easily separated from the rest of the report. This may be a general, illustrated cover for the entire report that doubles as a cover for the ES.
- Consider your audience. You may choose to write for a general audience – for example, all adult residents of a particular municipality. Or, you may gear the ES toward a more professional audience – for example, water resources managers throughout the SNEP region. In every case, however, it should be written for a broader audience than simply the Project team and grant managers. If it is written for a more technical audience, it should still be written in such a way that an informed general reader – for example, a newspaper reporter – can make sense of it. If you use acronyms or technical terms, for example, provide a glossary if need be to define them.
- Communicate the story of the Project. The reader should understand, not just what you did, but why you did it – why it is important, and how it will positively affect ecosystems and communities in Southeast New England. If it pertains to a specific resource, thoroughly describe its impact on that resource, and also explain its broader impact. For example, for a Project that restores water quality, the ES should describe the specific parameters of that restoration, but should also discuss the importance of the improvement to the community, such as beach use, shellfishing or the local tourism economy, and describe the area (watershed, estuary, community, etc.) affected by the work.

- Use images to help tell that story. The ES should include the best and most informative maps, photos or other images from among the supplemental materials (Section 4, below). At the very least, the ES should include a map of the Project area and some high-resolution photos of the Project area, community meetings, construction work if any, researchers performing sampling, etc. The ES should include enough images to convey the outcomes of the Project while maintaining an easily readable summary and convenient digital file size.
- Include an overview of Project costs and match. Describe volunteer participation.
- In general, the ES should be about 3-5 pages of text, and 5-10 pages complete with images.
- The ES must prominently acknowledge SNEP support of the Project. Suggested language for this acknowledgement is provided in the subrecipient agreement.

1. Cover Information

The cover information for the final report is identical to that for a progress report, except that the reporting period is the entire (actual) grant period, as follows:

Project Name
 Contract Number (SNEPWG18-###)
 Grant and Reporting Period (actual, completed)

Grantee Organization
 Report Contact Person, with telephone & email
 Project Leader (if different)

Report Type: Final

2. Project Report Narrative

Summarize the Project activities undertaken during the course of the Project. Unlike progress reports, the final report *does not* build upon the narrative from previous reports, but should be a stand-alone report, describing the Project from beginning to end.

2.A. Project Results

Describe in sufficient detail the goals of the Project, and the progress and results achieved over the course of the Project. Report accomplishments or setbacks on specific tasks as described in the scope of work, Attachment 3. This should include information such as:

- problems that the Project addressed;
- short and long term objectives, and how they are being or have been met;
- relevance of the Project to restoring and protecting coastal and watershed ecosystems in the Southeast New England Region;
- geographic area(s) affected by the Project;

- activities carried out to complete the Project, including specific techniques and materials used;
- deliverables or milestones completed;
- findings to date or lessons learned during this reporting period;
- changes made to the Project plan over the course of the Project, why they were made and how they worked out;
- next steps for future progress;
- challenges for future progress.

2.C. Compliance

List or summarize any compliance activities completed – Quality Assurance Project Plan (QAPP), permits, etc.

2.D. Project Partners

List major Project partners, and note their contributions in detail.

2.E. Volunteer and Community Involvement

Describe community support and any public involvement in the Project, including the specific roles of volunteers in Project activities. List the number of volunteers and hours that were contributed during the Project. If used as match, report the match figures under the budget section described below.

2.F. Outreach & Communications

Describe any outreach or educational activities (e.g. training, brochures, videos, press releases or public events) related to the Project. **Include PDF copies of press releases, outreach documents, newspaper articles, etc. as described under “Supporting Materials,” below.**

3. Project Budget Report

The budget report must provide sufficient information and detail to explain Project expenses for the entire Project, in the context of the objectives, tasks, and categories provided in the Project narrative and budget under Attachment 3. The budget report should be organized so that a reviewer can easily judge whether expenditures tracked the original Project budget and, if not, to understand why.

3.A. Summary Budget Table

Provide a summary budget table to show overall expenditures and match over the course of the entire Project, using the following format. Be sure to fully document match and match sources.

Summary Budget Table

	Budget Category	Total Budgeted Funds	Total Budgeted Match	Total Budgeted Grant + Match	Actual Grant Funds Expended	Actual Match Funds Expended	Actual Expended Grant + Match	Match Source
a	Personnel							
b	Fringe							
c	Travel							
d	Equipment							
e	Supplies							
f	Contractual							
g	Other							
h	Total Direct							
i	Indirect							
j	Total							

3.B. Detailed Project Budget Table

As with progress reports, the centerpiece of the final budget report is a budget table or tables utilizing the same cost categories and level of detail as the Project budget under Attachment 3. Report expenditures by category and, if applicable, task. Where a category is very broad, provide sufficient breakdown detail – for example, where “personnel” covers a number of individuals, show expenses for each individual; under “subcontracts” show expenses for each subcontract, etc. This table will report expenditures over the course of the entire Project. Add additional tables if need be to provide sufficient detail, or to summarize costs by task. **Where additional tables are used, ensure that the reviewer can easily understand how they relate to one another and the summary budget table.**

3.C. Budget Narrative

Use a budget narrative, keyed to the budget tables where necessary, to provide sufficient detail on expenditures and match. The budget narrative in the report may follow the format of the budget narrative in the Project budget under Attachment 3. Be sure to explain any deviations from the approved budget. The Subrecipient Agreement details requirements for prior approval for changes to Project budgets.

4. Supporting Materials

Include high-resolution digital copies, using PDF format for documents and JPG or TIFF format for images, of supporting materials related to the Project, including:

- Project maps and drawings;
- Maps of Project results or outcomes if applicable;
- Technical memoranda, data analyses and modeling reports;
- Project photographs, including photos depicting implementation sites before, during, and after implementation; photos of Project signs, etc.;
- Press releases, news articles, brochures, educational curricula, etc.

In the event that file sizes for supporting materials are too large to attach, contact RAE to set up a shared cloud file.

5. Certification

Include this language: *The undersigned verifies that the descriptions of activities and expenditures in this final report are accurate to the best of my knowledge; and that the activities were conducted in agreement with the grant contract. I also understand that matching fund levels established in the grant contract must be met.*

Grantee Signature:

Name:

Job Title

Date:

Organization:

Attach. 3

3225 MAIN STREET • P.O. BOX 226
BARNSTABLE, MASSACHUSETTS 02630



CAPE COD
COMMISSION

(508) 362-3828 • Fax (508) 362-3136 • www.capecodcommission.org

August 29, 2018

The following details our proposed project, partner organizations, and project costs.

Project Title: Regional Collection and Analysis of Cape Cod Water Resources Data to Inform Local Decision-Making

Location of Project: Cape Cod, Massachusetts

Applicant: Cape Cod Commission (Barnstable County)
3225 Main Street
Barnstable, MA 02630

Nature of Organization: Regional Planning Agency, Department of Barnstable County

Project Lead/Point of Contact: Erin Perry, Special Projects Manager
eperry@capecodcommission.org
508-744-1236

Partner Organizations: Association to Preserve Cape Cod
Center for Coastal Studies
UMass Dartmouth School for Marine Science and Technology
Waquoit Bay National Estuarine Research Reserve
Woods Hole Oceanographic Institution

Total Request: \$399,998
Total Non-Federal Match: \$145,665
Total Project Cost: \$545,663
Match Percentage: 36.42%

We look forward to the opportunity to complete the proposed work.

Sincerely,

Kristy Senatori
Executive Director

PROJECT NARRATIVE

Problem Statement: Cape Cod's 53 coastal embayments, nearly 1,000 ponds, and sole source aquifer are ecologically rich and extremely fragile (see project area map in attachment A). Human activity and land use – primarily nutrient pollution from septic systems – have significantly degraded estuarine and freshwater quality. Cape Cod communities struggling to find cost-effective strategies to reduce nitrogen can turn to the Area Wide Water Quality Management Plan for Cape Cod (208 Plan), recently updated by the Cape Cod Commission (Commission). Although the 208 Plan focuses on nitrogen as the major target for improving water quality in estuaries, phosphorus loading to freshwater ponds and streams must be targeted for pollution control measures. The 208 Plan provides a framework of traditional and non-traditional strategies for estuarine and freshwater quality improvement.

Towns are responsible for implementing strategies to reduce nutrients. In many areas across the region development density is not adequate to support cost-effective traditional collection and treatment of wastewater; therefore, towns are relying on the 208 Plan framework as a pathway for non-traditional strategies. Performance of these strategies is less certain, and implementation relies heavily on adaptive management. In addition to nutrients from septic systems, stormwater runoff is also a concern – one that all Cape Cod communities within the Southeast New England Program region are required to address through Municipal Separate Storm Sewer System (MS4) permits.

The 208 Plan's efficacy as a framework for local water quality management depends on the ability to ground-truth and record if strategies enacted in the field are effective and if the environment is responding with water quality improvements. Towns must revisit implementation plans periodically, as required as a condition of consistency with the 208 Plan and MS4 permits, and to maintain compliance with Watershed Permits issued by the Massachusetts Department of Environmental Protection. In most cases, towns must revisit plans at least every five years, and adjust their approaches as necessary. Towns, Barnstable County and partner organizations are collecting data annually and as nutrient management alternatives are implemented. Data analyses are needed to evaluate and determine success – or failure – of approaches.

This proposal seeks support to improve recording, management and translation of monitoring data, so towns better understand if management strategies are successful. It includes new methods for data analysis, evaluation, reporting, and translation to improve understanding of water quality trends and better integrate results into local planning and policy development, creating a path forward for the provision of data and information that will serve the 15 Cape Cod communities and the region well into the future.

Project Description: The Commission has developed a regional water quality database to centralize water quality data historically collected by multiple organizations and agencies. The project team proposes to enhance this framework by integrating additional data and adding tools to ensure data accuracy and assess nutrient mitigation strategies. Funding will help develop a user-friendly interface that analyzes estuarine monitoring data for each estuary with an existing long-term dataset. One watershed will be selected to pilot the interface in order to demonstrate and assess its effectiveness as a decision-support tool. In addition, the project team will compile and analyze existing data associated with freshwater resources, including ponds, lakes, and drinking water; and develop information products to improve understanding of the interconnection of all water resources to Cape Cod's Sole Source Aquifer. Together, these improvements will create a feedback-loop so that the effect of nutrient reduction strategies on a resource can be understood, captured, and used in real-time strategic decisions for nutrient reduction. Recognizing the importance of clean water and supporting all aspects of the environment on Cape Cod, information compiled and analyzed as part of this project will also be made more widely available through a variety of outreach initiatives.

A key feature of this program is that data analysis will provide a measure of the health of the water body and watershed to guide investment in nutrient reduction strategies. Another feature of this program is its

collaborative approach to water resources data aggregation, providing a platform that makes it possible for towns to have a comprehensive picture of the benefits of their investments across all gradients of the watershed. End user engagement is woven into each proposed task ensuring that the products provided at the end of the project will be easily applied and readily utilized by the research and management communities on Cape Cod. The goal is to provide towns with the best available science-based information, so investments in nutrient reduction and groundwater protection have the best possible effect on resources. This goal will be reached through the expertise of the project team, End User Group established as part of the project, and the State of the Waters: Cape Cod Advisory Committee established by the Association to Preserve Cape Cod (APCC). The project team includes experts in water resources, database management, data collection and analysis, collaboration and outreach and project management. The proposed work will be achieved through the following project tasks:

- Task 1: Data integration, quality assurance and control
- Task 2: Collaboration with end users and pilot project
- Task 3: Data analysis and development of a processing script
- Task 4: Integration with web-based user interface and other information products
- Task 5: Targeted outreach to inform local action
- Task 6: Final report

Task 1: Data integration, quality assurance and control

Water quality data as available through project partners and collaborators from all regions of Cape Cod, including estuarine and freshwater environments, will be inventoried and entered into the regional database. The Commission maintains data in an SQL database and will work with project partners to expand the existing database, as needed.

Estuarine Data: Commission staff will work with partner monitoring organizations to compile estuarine water quality data not currently in the regional database. The original effort to compile and integrate data into the database occurred in 2016 and included development of the database infrastructure, identification of data fields and compilation of historical data through 2015. The database will be updated to include all available data through to the present time. The monitoring organizations contributing data include the Center for Coastal Studies (CCS), Buzzards Bay Coalition (BBC), University of Massachusetts Dartmouth School for Marine Science and Technology (SMAST), and the Waquoit Bay National Estuarine Research Reserve (WBNERR). Data collection for these water quality monitoring programs began in 2006, 1992, 1987, and 1993, respectively.

To take advantage of all available long-term monitoring data, while also establishing quality control standards, any historic data generated before or without an approved Quality Assurance Project Plan (QAPP) will be flagged accordingly in the database as part of the quality assurance and quality control (QA/QC) process. Metadata will accompany the database, as well as any final reports acknowledging the use and confidence level of non-QAPP approved data. Three of the four contributing monitoring organizations (CCS, BBC, SMAST) hold current EPA-approved QAPPs. While BBC is not an official partner on this project, they have provided data for use in the database and agree to continue doing so. WBNERR will develop a QAPP in the first year of this proposed project. WBNERR currently sends samples to CCS and SMAST for nutrient analyses under two different water quality monitoring programs; therefore, those nutrient data are covered under approved QAPPs. WBNERR also maintains long-term data (1998 – present) collected using automatic YSI loggers (i.e., sondes) as part of the NOAA National Estuarine Research Reserve System-Wide Monitoring Program (SWMP), but the standard operating procedures for this program are not covered under previously approved QAPPs.

By developing a comprehensive QAPP for WBNERR, records with high (15-minute) temporal resolution of temperature, salinity, pH, dissolved oxygen, turbidity, and chlorophyll *a* fluorescence can be incorporated into the regional database and used in correlation with nutrient dynamics to model changes. The QAPP will strengthen WBNERR's data collection process and enhance its ability to share

and integrate data across private and academic institutions and state and federal agencies. This increased capacity for standardized data sharing is significant for this project but also for future collaborations.

Freshwater Data: Extensive data is available on the quality of Cape Cod's freshwater resources. APCC staff, working with the project team and trained volunteers, will identify and compile freshwater quality data to suitable standards, including state and federal Clean Water Act standards for surface waters and drinking water. An inventory of data will be developed to ensure data sources can be tracked and recorded. Data will be maintained in the regional database.

Data sources will be identified by the project team, guided by standards set by the State of the Waters Advisory Committee to ensure evaluation of all important and credible sources. Data will be compiled for lakes, rivers, public drinking water supplies, and groundwater. This effort will leverage the existing water resources data compiled and maintained by each project partner and will evaluate and compile appropriate data from other sources as an initial step in the project. Data utilized will include, but not be limited to, the 17 years of data collected by the Pond and Lake Stewardship (PALS) Program, as well as data collected from detailed pond assessments and water use and drinking water quality data from the 17 individual water purveyors on Cape Cod, all of which has been compiled by Commission staff.

The Commission and project partners will work with a consultant to develop a QAPP for pond and lake data. In the past, the Massachusetts Department of Environmental Protection (DEP) has declined to accept the existing PALS data for use in identifying and listing impaired waters. As with estuarine data, any historic data generated before or without an approved QAPP will be flagged accordingly and metadata will accompany the database.

Database Quality Assurance and Quality Control (QA/QC): A system for identifying potential errors in source data and/or inconsistencies in database formatting will be established.

The Commission and project partners will work with a consultant to complete the following tasks: 1) develop and agree upon a set of "filter rules" for both historic and future water quality data sets to identify potential errors in the source data; 2) implement a system for performing QA/QC on historical data sets and new data sets, as provided; 3) identify and address database formatting inconsistencies, such as inconsistent station IDs, that impact importing data sets and searchability of the database

As previously described, data not covered by a previously approved QAPP will be flagged accordingly and metadata accompanying the database, as well as final reports, will acknowledge the confidence level of non-QAPP approved data.

Task 1 Outputs: 1) Inventory of water quality data, including sources, parameters and dates; 2) Identification of data gaps; 3) Complete, up-to-date regional estuarine and freshwater quality databases; 4) WBNERR QAPP; 5) Ponds QAPP

Task 2: Collaboration with end users

The goal of this project is to make information more accessible and useable by towns and the region, all of whom are working to meet a regional goal of improving the quality of water resources. Social science research shows that to increase the likelihood of science and data being applied, managers and decision-makers must understand the science and find it to be legitimate and credible (Cash et al. 2003). To enhance the likelihood that data and products from this project are used and trusted, the project team intends to create deliberate processes that engage end users (those in a position to apply the project deliverables), ensuring they understand the data and that data products and analyses meet their information needs.

To this end we have designed a collaborative end user engagement process to enable this project to bridge the science to management divide and achieve desired outcomes. The project approach includes

integrating defined steps that will link the technical aspects of data collection and analysis to development of decision-support tools that meet end user needs and are able to help guide management decisions. The collaborative process is designed to be iterative and end user driven and builds in meaningful and deliberate opportunities for regional and local decision-makers to contribute to project outcomes. End user collaboration will be integrated in every aspect of the project, initiated at the beginning and sustained to the end. Utilizing this collaborative approach will set up the project for greater success by strengthening partner relationships as well as data sharing mechanisms that will continue beyond the life of the project. The impact of the collaboration process will also be evaluated as part of our project activities.

Key end users fall into four main groups: 1) water quality managers, regulators and policymakers who will draw on information and decision-support tools created from this effort to inform their work and management decisions, 2) water quality monitoring organizations who collect, analyze and contribute data to the regional database, 3) decision-makers from one watershed who will work with the project team to pilot test applying information to their local management needs and interests, and 4) researchers who can use information from the regional database as a platform for supporting local studies on the effectiveness of water quality approaches applied in the Cape Cod setting.

The seven groups of end users identified include: 1) The Cape Cod Water Protection Collaborative (CCWPC), which includes representatives from all fifteen Cape Cod towns and two County representatives. The mission of this body is to protect Cape Cod's shared water resources by promoting and supporting the coordinated, cost-effective and environmentally sound development and implementation of local water quality initiatives; 2) The Cape Cod Commission; 3) DEP; 4) The Environmental Protection Agency (EPA); 5) Monitoring organizations – CCS, APCC, WBNERR, BBC, pond associations; 6) Water quality committees, water resource managers and local officials from one pilot watershed; 7) Researchers (SMASST).

Engagement with end users will be structured and facilitated by a trained engagement specialist from WBNERR. Facilitators will ensure that open and regular communication is established and sustained with end users over the course of the project. The collaborative process has been broken into five objectives:

Collaboration Objective 1: Establish an End User Group to provide guidance to the project team and help make key decisions on different aspects of work products.

Process: The End User Group will be established at the beginning of the project and will be comprised of the membership of the Cape Cod Water Protection Collaborative and one designated representative from each of the other end user groups, including the project team organizations. The End User Group will meet on a quarterly basis. Meeting will be structured and professionally facilitated.

Anticipated Outcomes: Strengthened relationships among project partners, monitoring organizations, and end users, which is essential for increasing project impact and achievement of objectives.

Collaboration Objective 2: Work with water quality monitoring organizations to discuss database interface, data needs, reporting procedures, data QA/QC protocols, and all related processes necessary to establish a database that is as complete as possible and trusted by partners.

Process: The project team will hold a workshop soon after project start-up to bring key monitoring groups together to discuss all aspects of database set-up and use including data access, delivery, archiving, and quality control, as well as individual agency roles necessary to sustain the effort beyond the life of the project.

Anticipated Outcomes: Clear list of action items and responsible parties to strengthen database refinement and roll-out.

Collaboration Objective 3: Work with the End User Group to identify priority water quality information needs that can be addressed by accessing data from the regional database, as well as desired data outputs.

Process: Through facilitated meetings, WBNERR will work with end users to identify the key types of information and data outputs decision-makers need. Feedback will be summarized and shared with the project team. This feedback will be used to guide Task 3 and development of a data analysis processing script.

Anticipated Outcomes: Prioritized list of data analyses and desired outputs, as well as a list of data gaps.

Collaboration Objective 4: Work with pilot watershed group to conduct further analyses, interpret and translate results, and identify opportunities for applying data within the watershed to help inform water quality management decisions.

Process: Drawing on a review of available data by watershed, as well as the data needed to effectively run the processing script, the project team will select a pilot watershed. This decision will be made as part of the project implementation process and with consideration to areas where use of the regional database and processing script may be illustrated most effectively. This will inform lessons learned and serve as a template for other watersheds. Two meetings with key decision-makers within the pilot watershed, as well as database developers and technical data experts will take place. The purpose of these meetings will be to unpack and illustrate how municipalities can apply project outputs to decision-making, as part of local planning and management efforts. Where and how analyses can help decision-makers evaluate implementation of local water quality plans will be a focus of these deliberations. After the pilot process has been completed WBNERR will convene a regional workshop to share results of what was learned and transfer lessons to decision-makers in other watersheds on Cape Cod. Lessons and results from the process will be captured in the final project report.

Anticipated Outcomes: Decision-makers from pilot watershed receive analyzed and interpreted watershed specific data to inform management efforts. Decision-makers understand, trust and can apply the project outputs.

Collaboration Objective 5: Work with monitoring organizations and selected researchers from the pilot watershed to identify monitoring and research gaps. This is essential to create a feedback loop that allows the project team to identify how the regional database can be used to help improve monitoring.

Process: Given the range of approaches being considered across the region to help improve water quality, it is critical that a component of this project is geared toward better understanding outstanding monitoring needs. A workshop will be held to identify (i) if and where monitoring should/can be enhanced or streamlined, (ii) if previously uncollected parameters are needed to capture key trends, (iii) gaps in current monitoring efforts and resources needed to meet these gaps, (iv) opportunities where monitoring groups can work together more effectively to achieve shared goals and strengthen the regional database.

Anticipated Outcome: Recommendations developed to help guide future monitoring efforts. Identification of key research needs that is shared with regional research entities.

Task 2 Outputs: 1) Guidance on database QA/QC; 2) List of priority data outputs for Task 3; 3) Final report for one pilot watershed; 4) Key recommendations to guide future monitoring efforts; 4) List of key research needs to help inform local management efforts

Task 3: Data analysis and development of a processing script

As previously described and as will be further developed and defined by the collaborative process, data analysis tools summarizing water quality data into metrics that are easy to digest, and representative of trends and patterns are needed. Information is needed at spatial scales ranging from the sampling station to the watershed to the region. In response to this regional management need the project team will analyze spatial and temporal trends in water quality across the coastal and fresh waters of Cape Cod.

Location-specific water quality monitoring is necessary to identify problems and develop and evaluate management solutions because underlying drivers of declining water quality may be dramatically different from one watershed to another. Broader spatial and temporal scale analyses are often not available when water quality monitoring focuses on a single watershed or water body. The project team plans to utilize the regional database to generate a region-wide dataset, which will be critical to understanding both local and broader scale patterns in water quality and climate indicators. For example: water quality, indicated by chlorophyll *a* pigments, has declined across Buzzards Bay and other Cape Cod coastal embayments over the past several decades. The decline in water quality observed across Buzzards Bay is more consistent with regional climate warming, rather than trends in nutrient loading or nitrogen concentration (Rheuban et al. 2016, Williamson et al. 2017). Using this database, the following question can be answered: do our observations in Buzzards Bay represent a similar pattern across the all the coastal and fresh waters of Cape Cod?

Woods Hole Oceanographic Institution (WHOI) will develop a processing script for data trend analyses. Detailed data analyses will allow end users to discern if implemented mitigation strategies are effective or if other factors beyond traditional management tools have impacted local and regional water quality. The proposed work will make data analysis accessible to local stakeholders by combining modern, open source data analytics toolboxes with web-based dashboards and GIS. The data analysis will be designed such that metrics will be generated upon request at user-defined spatial and temporal scales. Data analyses will utilize QA/QC protocols and will have the ability to integrate new data into analyses as the database is updated, providing long-term benefit to end users beyond the period of the grant.

In conjunction with the collaborative process, the project team will generate a detailed interpretation of historical water quality data for one pilot watershed. This detailed interpretation will also include an analysis of nitrogen loading history based on published nitrogen loading models. Project partners at WHOI completed a nitrogen loading trend analysis of 28 embayments within the Buzzards Bay watershed (Williamson et al. 2017) and propose a similar analysis for the detailed interpretation of a chosen embayment. Data needs for the historical nitrogen loading trend analysis, such as land use and MA level III assessors' data, have already been compiled by project partners. This historical nitrogen loading trend analysis will allow us to compare nutrient input trends with water quality trends and will provide a framework of analyses for other regional watersheds.

APCC staff will analyze and compare freshwater quality data to suitable water quality standards, including state and federal Clean Water Act standards for surface waters and drinking water. Work will take advantage of existing resources, such as the Cape Cod Pond and Lake Atlas, which includes freshwater standards for evaluating pond water quality that consultants have been using for most detailed pond studies since 2003.

All analyses will be used in development of water resources report cards and the “State of the Waters: Cape Cod” report, which will grade and characterize water resources (described as part of task 4).

Task 3 Outputs: 1) Complete and annotated processing script for estuarine data analyses; 2) Data trend analyses for currently available estuarine and freshwater data sets; 3) Data interpretation for one pilot watershed; 4) Evaluation of current water quality relative to known standards (ex. nitrogen TMDLs); 5) Comparison of water quality across regions to identify trends and commonalities; 6) Summary of results and needs assessment.

Task 4: Integration with web-based user interface and other information products

Data and analyses will be made available through a web-based user interface, water resources report cards, the “State of the Waters: Cape Cod” annual reports, and other information products.

The processing script will be integrated into the regional database and website user interface. Commission staff will review the data processing script developed by WHOI, work with WHOI staff to integrate the script into an SQL procedure, and verify script functionality through testing of the procedure. Commission staff will edit existing SQL tables or create new tables for processed data from the SQL procedure to interface with the web-based interface.

Estuarine data analyses that result from the processing script and that are consistent with the end user needs established in task 2 will be displayed on the regional database website. To ensure ease of access and use, Commission staff will work with project partners and the End User Group to assess the suitability of the current web interface. Charts and visuals will be edited and/or created, as needed, to display appropriate analyses.

Estuarine and freshwater data analyses will be used to develop the “State of the Waters: Cape Cod” report, which will be an organized compilation of report cards. All data and analyses from task 3 will be integrated into water resources report cards that characterize issues and form the basis of the report. APCC will characterize water resources based on analyses completed. Report cards will describe and grade watersheds, ponds and lakes, drinking water, coastal waters, and groundwater on Cape Cod.

To develop report cards, APCC will use a methodology that has been used effectively to raise public awareness and promote action in areas such as California, Florida, Maine, New Hampshire, New York, Oregon, Texas, Washington, the Great Lakes, Chesapeake Bay, U.S. waters and internationally. In Massachusetts, report cards have highlighted water quality problems and improvements in at least five water bodies, including the Blackstone River, Charles River, Mystic River, Buzzards Bay, and Taunton River. Report cards were also used to highlight beach water quality issues at 15 public beaches in metropolitan Boston. A list of the report cards referenced can be found in attachment B.

Aside from Buzzards Bay communities, Cape Cod does not have any water resources report cards to help the public and decision makers understand problems and encourage action. Most report cards assign a letter grade using defined criteria and sometimes the grade is combined with a color scale to indicate degree of severity. The result is powerful, graphic, and easy to comprehend.

The “State of the Waters: Cape Cod” Report will integrate the report cards and be easily understood by the general public yet developed with sufficient rigor to be accepted by experts and regulators. The report will be publicly available through digital and conventional media and will become a regular and prominent feature released at the APCC annual meetings and promoted in other venues. In subsequent years, the report will be updated to reflect the latest data.

The report will be used as an educational resource, but also to identify themes and issues and inform better public policy regarding the improvement and preservation of Cape Cod’s water resources.

Task 4 Outputs: 1) Updated web-based user interface to display and make publicly accessible all data and analyses; 2) Water resources report cards that provide letter grades for water quality of lakes, rivers, estuaries and coastal waters, groundwater, drinking water and watersheds; 3) “State of the Waters: Cape Cod” Report

Task 5: Targeted Outreach to Inform Local Action

Results will be delivered and translated to local-decision-makers best positioned to apply and integrate findings into local planning and management.

In addition to the workshops and meetings identified above, WBNERR will conduct two additional workshops to share results from this work with the full End User Group, other regional decision-makers, and the public. The purpose of these workshops is to share results of data analysis and information products with those who need the information to make decisions. Depending on timing and feedback from the End User Group and project team, these workshops may be stand alone or combined and/or coordinated with other long standing regional outreach events that are well known and well attended. Three of these include the One Cape Summit (led by the Commission), the Cape Coastal Conference (led by WBNERR and several partner organizations and agencies) and the APCC Annual Meeting. Linking the project outreach and communication plan with these established regional events will help to strengthen overall impact and enhance cohesiveness.

Annual Meetings: APCC will release the “State of the Waters: Cape Cod” Report at its annual meeting, in August/September of each year. Most meetings draw approximately 150 people. The Commission will showcase this project at the OneCape Summit, which focuses on both the environment and the economy, but was originally established to address progress on water quality improvement. The Summit attracts between 200 and 300 attendees each year. The annual Cape Coastal Conference will also be an opportunity for the distribution of project information. It typically draws between 300 and 400 attendees. This established pattern of annual regional events will help draw attention to the project and set the stage for utilizing project outputs to inform restoration and protection of water resources over the long term.

Social media: APCC will design and implement a social media campaign that will publicize the “State of the Waters: Cape Cod” Report. Planned work includes: 1) a blog with short articles and photos about water quality, natural history information on marine and freshwater systems, and best management practices for protecting water resources. 2) social media posts related to water quality and relaying specific information on issues and events to generate interest in this project.

During the first year of the project, the project team will establish a schedule for targeted outreach that takes into consideration annual meeting dates that are not known at the time of this submission.

Task 5 Outputs: 1) Presentation of project results and resources and additional engagement with end users at regional outreach events, including, but not limited to the OneCape Summit, Cape Cod Coastal Conference and the APCC Annual Meeting; 2) Social media posts to share information about the project and project outputs

Task 6: Final Report

The project team will provide a final report that summarizes the data collected, the collaborative process and key outputs and outcomes of the process, data analyses, and information products.

The final report will be available through the Commission’s website and partner websites. Information in the report will be shared at existing regional outreach events, as described in task 5, and sections of the final report will be shared individually. For example, water resources report cards and the “State of the Waters” Cape Cod report will be issued annually and serve as standalone documents. The watershed interpretation will serve a localized purpose, as well as be used as a framework for moving forward in other watersheds across the region. The water quality database will be accessible through the web-based interface and will be used by a wider audience than may utilize the final report.

Task 6 Outputs: Final report that includes, at a minimum, 1) Documentation of data collected and aggregated; 2) Database QA/QC procedures; 3) Annotated processing script; 4) Data analysis methods; 4) Detailed interpretation of one or more watersheds; 5) Water resources report cards; 6) “State of the Waters: Cape Cod” Report; 7) Documentation of public outreach and workshops

Project Timeline and Milestones:

	2018					2019												2020						
	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Task 1																								
Data Compilation																								
Database QA/QC																								
WBNERR QAPP Development																								
Ponds and Lakes QAPP Development																								
Task 2																								
End User Group Mtgs																								
Monitoring Group Workshop																								
Identify Data Outputs/Analysis Needs																								
Pilot Watershed Interpretation																								
Identify Monitoring/Research Gaps																								
Task 3																								
Data Analysis/Script Development																								
Pilot Watershed Analysis/Interpretation																								
Task 4																								
Development of Report Card Template																								
Report Cards Released																								
"State of the Waters: Cape Cod" Released																								
Integrate Script with Database/Website																								
Task 5																								
Develop Targeted Outreach Schedule																								
Targeted Outreach/Workshops/Meetings																								
Task 6																								
Final Report																								

Local Impact: This project is in direct support of the 15 Cape Cod towns implementing local water quality plans, 11 of which are located within the SNEP region. Successful development of consistent and comparable data analyses will track trends in response to plan implementation, provide post-implementation information, help refine local decision-making, and facilitate management to improve water quality. The proposed processing script will be designed to allow for future automated analyses as new estuarine data are available, creating long-term capacity for embayment specific interpretation and informed local water quality decisions past the grant period. The proposed collection and analysis of freshwater data is consistent with the effort initiated for estuarine data in 2016 and will provide for a long-term, consistent database of all water resources information. The Commission is committed to maintaining the data, working with project partners to integrate new data into the future, and utilizing the QA/QC procedures developed as part of this project. APCC is committed to issuing the “State of the Waters: Cape Cod” Report on an annual basis to ensure ongoing evaluation of Cape Cod’s important water resources and responsive and responsible public policy decisions.

Regional Impact: The strong cooperative relationship among monitoring, management and non-profit organizations builds regional capacity to solve water quality challenges through collaborative and innovative restoration techniques. The combined, downloadable dataset allows for regional scale analyses to identify the impacts of climate and tidal variability on water quality management. The database structure, analyses, and information products will be transferable to other areas within the SNEP region and beyond that seek to collect and analyze long-term data sets and translate them into helpful information products.

The project team recognizes the importance of tracking both the impact of the project process and outcomes to inform future learning across the region and increase overall effectiveness. WBNERR has significant experience in project evaluation and will conduct evaluations of workshops held with managers and decision-makers to determine how well objectives were met and where efforts can be improved. WBNERR will also assess the impact of the collaborative process with the End User Group.

Results of these evaluations will be incorporated in the final project report as part of the body of learning related to this project.

Project Team (See attachment C): The project will be led by the Commission, with expertise in water resources, database development and project management. The Commission will lead project activities, coordinate project tasks, track progress, and maintain communication with project partners. Partner monitoring organizations include the CCS, SMAST and WBNERR. Each will provide data as well as guidance on quality assurance/control and serve as an advisor for data analysis. WBNERR will lead collaborative process, plan outreach workshops to decision-makers and researchers and facilitate end user meetings. WHOI will complete the processing script development and data analysis. APCC will expand upon existing freshwater databases and integrate estuarine and freshwater data and analyses into information products, including water resources report cards and the “State of the Waters: Cape Cod” Report, to increase knowledge and understanding of the health of water resources and identify water restoration needs. An End User Group will be established, consisting of project team members, the CCWPC, and other key end users identified in task 2 to assist in defining data outputs.

Integration and Multiple Benefits: This project takes a holistic approach to water resource issues, addressing both estuarine and freshwater quality. It seeks to advance several SNEP priorities, not limited to, fostering integrated approaches to restoring water quality, habitats and ecosystems; building local and regional capacity, tools and knowledge; strengthening sustainable partnerships; and improving the utility of environmental monitoring for ecosystem management. In addition to data collection and analysis, a program script, and information products, outputs will include a thoroughly vetted, downloadable database and metadata file for research and management applications consistent with DEP and EPA water quality monitoring strategies. This robust water quality database can be used by coastal scientists against other large datasets for future research projects. (e.g. marine fish and mammal migrations, coastal bird migrations, the spread of harmful algal blooms, etc.)

Leveraging: This project leverages work completed by each project partner and work completed by DEP and SMAST to develop total maximum daily loads for nitrogen and seeks to expand the effect of this research and long-term data accumulation on local management decisions. The Commission has developed databases and a web interface to store and share a regional data set. This project will take these efforts one step further to be responsive to local needs, fulfill the recommendations of the 208 Plan, and support existing management efforts to improve water quality, habitats and ecosystems.

Outreach and Communications: All work completed for this project will be included in a web-based interface. The program script will be integrated with the database and will be used on a regular basis, as additional data are available. The data and analyses will be used in water resources report cards and an annual “State of the Waters: Cape Cod” report created by APCC. APCC will build on the report cards and State of the Waters report to develop an “action agenda” that provides recommendations for actions to protect and restore water, along with measures for gauging success in implementing actions. The broad-based and diverse target audience will include the public as well as decisionmakers. Through the CCWPC, the Commission will work to share project outputs with each town. In addition, WBNERR will conduct targeted watershed-based workshops to translate information to local decision-makers. Other target audiences include full- and part-time residents, pond associations, municipal boards, departments and water quality/wastewater committees, fisheries stakeholders, other restoration partners, non-governmental organizations, elected officials, and others. Additional outreach materials will be developed, as needed, and project components will be included in presentations by the Commission and partners, as appropriate, at local, state, regional and national meetings to allow for knowledge transfer.

Literature cited can be found in attachment D.

BUDGET DESCRIPTION

Budget Table

Cost Item or Category	Cost Basis	RAE SNEP Request	Non-Federal Match	Match Source	Total Project Cost
Personnel					
Erin Perry, CCC	364 hrs. @ \$43.27	11,812.71	3,937.57	CCC	15,750.28
Tom Cambareri, CCC	153 hrs. @ \$49.53	5,683.57	1,894.52	CCC	7,578.09
Phil Detjens, CCC	208 hrs. @ \$44.45	6,934.20	2,311.40	CCC	9,245.60
Mario Carloni, CCC	364 hrs. @ \$37.18	10,150.14	3,383.38	CCC	13,533.52
Jo Ann Muramoto, APCC	500 hrs. @ \$48.00	18,000.00	6,000.00	APCC-MET	24,000.00
Don Keeran, APCC	502 hrs. @ \$43.20	16,264.80	5,421.60	APCC-MET	21,686.40
Kristin Andres, APCC	502 hrs. @ \$40.00	15,060.00	5,020.00	APCC-MET	20,080.00
Brian Horsley, APCC	416 hrs. @ \$32.00	9,984.00	3,328.00	APCC-MET	13,312.00
Amy Costa, CCS	390 hrs @ \$34.60	11,072.00	2,422.00	CCS	13,494.00
Brian Howes, PI SMAST	70 hrs. @ \$68.46	4,792.20	-		4,792.20
Roland Samimy, SMAST	70 hrs @ \$54.07	3,784.90	-		3,784.90
Outreach Asst., WBNERR	850 hrs. @ \$25.00	21,250.00	-		21,250.00
WQ Monitoring Asst., WBNERR	206 hrs. @ \$20.12	4,144.72	-		4,144.72
Waquoit Bay Volunteers, WBNERR	546 hrs. @ \$24.69	-	13,480.74	WBNERR	13,480.74
Jennie Rheuban, WHOI	1216 hrs. @ \$42.625	51,832.00	-		51,832.00
Total Personnel		190,765.24	47,199.21		237,964.45
Fringe					
Fringe, CCC	66.36%	22,947.70	7,649.23	CCC	30,596.93
Fringe, APCC	25.00%	14,827.20	4,942.40	APCC	19,769.60
Fringe, CCS	20.00%	2,214.40	484.40	CCS	2,698.80
Fringe, SMAST (+\$16.5/wk)	36.27%	3,176.91	-		3,176.91
Fringe, WBNERR	N/A	-	-		-
Fringe, WHOI	45.99%	23,837.54	-		23,837.54
Total Fringe		67,003.74	13,076.03		80,079.78
Travel					
In-state travel (APCC)	2,000 mi @ \$0.545	730.30	359.70	APCC-MET	1,090.00
Out-of-state (RAE Summit 2018; 2 CCC staff)	See Narrative	4,000.00	-		4,000.00
Out-of-state (RAE Summit 2018; 1 APCC staff)	See Narrative	1,340.00	660.00	APCC-MET	2,000.00
Out-of-state travel (WHOI - S. Doney)	See Narrative	4,798.00	-		4,798.00
Total Travel		10,868.30	1,019.70		11,888.00
Equipment					
WQ Monitoring Equipment	See Narrative	6,500.00	-		6,500.00
Total Equipment		6,500.00	-		6,500.00
Supplies					
Software (APCC)	See Narrative	335.00	165.00	APCC-MET	500.00
Workshop Supplies (APCC)	See Narrative	502.50	247.50	APCC-MET	750.00
Workshop Supplies (WBNERR)	See Narrative	1,500.00	-		1,500.00
Total Supplies		2,337.50	412.50		2,750.00
Contractual					
QAQC Database (CCC)	See Narrative	20,000.00	-		20,000.00
QAPP Development (CCC)	See Narrative	-	7,500.00	CCC	7,500.00
OneCape Conferences (Venues & AV equipment)	See Narrative	10,000.00	10,000.00	CCC	20,000.00
Workshop & Coastal Conference expenses (Venues & AV equipment; WBNERR)	See Narrative	6,000.00	-		6,000.00
Web Design (APCC)	See Narrative	13,400.00	6,600.00	APCC-MET	20,000.00
TMDL Solutions (SMAST)	See Narrative	3,500.00	-		3,500.00
Dr. Scott Doney	See Narrative	-	12,339.00	WHOI	12,339.00
Total Contractual		52,900.00	36,439.00		89,339.00
TOTAL DIRECT		\$ 330,375	\$ 98,146		\$ 428,521
CCC Indirect Cost (applied to direct labor only)	71.90%	24,863.46	8,287.82		33,151.29
APCC Indirect Cost	10.00%	9,044.38	3,274.42		12,318.80
CCS Indirect Cost (NICRA)	50.31%	4,428.80	3,717.80		8,146.60
SMAST Indirect Cost (NICRA)	59.00%	1,175.40	7,824.47		8,999.87
WBNERR Indirect Cost	10.00%	3,289.47	1,348.07		4,637.55
WHOI Indirect Cost (NICRA)	62.00%	26,822.00	23,066.00		49,888.00
Total Indirect Cost		\$ 69,624	\$ 47,519		\$ 117,142
TOTAL (Total Direct+Indirect)		\$ 399,998	\$ 145,665		\$ 545,663
Non-Federal Match as a Percentage of the Request:			36.42%		

Budget Table cont.

Grant Totals Per Partner

SNEP Watershed Grant Proposal - Grant Totals per Partner					
Project Partners		RAE SNEP Request	Non-Federal Match	Match Source	Total Project Cost
Cape Cod Commission	Direct Costs	91,528	36,676	CCC	\$ 128,204
	Indirect Costs	24,863	8,288	CCC	\$ 33,151
	Total:	116,392	44,964	CCC	\$ 161,356
Association to Preserve Cape Cod	Direct Costs	90,444	32,744	APCC-MET	\$ 123,188
	Indirect Costs	9,044	3,274	APCC-MET	\$ 12,319
	Total:	99,488	36,019	APCC-MET	\$ 135,507
Center for Coastal Studies	Direct Costs	13,286	2,906	CCS	\$ 16,193
	Indirect Costs	4,429	3,718	CCS	\$ 8,147
	Total:	17,715	6,624	CCS	\$ 24,339
Umass Dartmouth SMAST	Direct Costs	15,254	-	-	\$ 15,254
	Indirect Costs	1,175	7,824	SMAST	\$ 9,000
	Total:	16,429	7,824	SMAST	\$ 24,254
Waquoit Bay National Estuarine Research Reserve	Direct Costs	39,395	13,481	WBNERR	\$ 52,875
	Indirect Costs	3,289	1,348	WBNERR	\$ 4,638
	Total:	42,684	14,829	WBNERR	\$ 57,513
Woods Hole Oceanographic Institute	Direct Costs	80,467	12,339	WHOI	\$ 92,806
	Indirect Costs	26,822	23,066	WHOI	\$ 49,888
	Total:	107,289	35,405	WHOI	\$ 142,694
TOTAL:	Direct Cost	330,374	98,146		\$ 428,521
	Indirect Cost	69,624	47,518		\$ 117,142
	TOTAL:	\$ 399,998	\$ 145,665		\$ 545,663

Budget Narrative

Personnel

Cape Cod Commission

Thomas Cambareri, Water Resources Technical Services Director: Mr. Cambareri will assist with identification of water resources data sources, data compilation, identifying data analysis needs, and development of the pilot watershed interpretation (Task 1, Task 2, Task 3). 153 hrs. @ \$49.53/hr., total \$7,578.09.

Mario Carloni, Geospatial Developer: Mr. Carloni will be responsible for the database web interface and integrating the processing script with the SQL database and web interface (Task 4). 364 hrs. @ \$37.18/hr., total \$13,533.52.

Phil Detjens, Applications Manager: Mr. Detjens will oversee database development and management, integration of the processing script into an SQL procedure and creating and editing SQL tables (Task 4). 208 hrs. @ \$44.45/hr., total \$9,245.60.

Erin Perry, Special Projects Manager: Ms. Perry will serve as project lead for the grant and is responsible for oversight of the project, coordinating with project partners and reporting (Tasks 1-6). 364 hrs. @ \$43.27/hr., total \$15,750.28.

CCC will provide match of in-kind labor. Fringe benefits are allocated as a percentage applied to total direct salaries. The audited FY17 fringe rate is 66.36% and is broken out as: Retirement (23.40%), Paid Leave Benefits (23.21%), Health Insurance (18.12%), and Medicare (1.63%).

Association to Preserve Cape Cod

Jo Ann Muramoto, Director of Science Programs: Dr. Muramoto will be responsible for freshwater data compilation and data analysis and she will prepare the report cards (Task 1, Task 4). 500 hrs. @ \$48/hr., total \$24,000.

Don Keeran, Assistant Director: Mr. Keeran will serve in an advisory capacity and provide guidance on data compilation and development of report cards and State of the Waters Report (Task 1, Task 4). 502 hrs. @ \$43.20/hr., total \$21,686.40.

Kristin Andres, Director of Education and Outreach: Ms. Andres will oversee development of outreach products and activities for development and promotion of State of the Waters Annual Report (Task 4, Task 5). 502 hrs. @ \$40/hr., total \$20,080.

Bryan Horsley, Restoration Technician: Mr. Horsley will assist with GIS mapping and other technical assistance (Task 4, Task 5). 416 hrs. at \$32/hr., total, \$13,312.

APCC match is in-kind labor funded by a 2018 Massachusetts Environmental Trust grant.

Waquoit Bay National Estuarine Research Reserve

Outreach and Engagement Assistant: The Outreach and Engagement Assistant will work with and be supervised by Tonna-Marie Rogers, WBNERR Coastal Training Program Coordinator, and will provide support in collaborative process design, meeting planning and facilitation and overall coordination of WBNERR tasks. Working with the project team and the Commission as lead, the assistant will develop process agendas for end user meetings, design effective processes to meet meeting goals and record action items and decisions (Task 2, Task 5). 850 hrs. @ \$25/hr., total \$21,250.

Water Quality Monitoring Assistant: The Water Quality Assistant will be trained by the WBNERR Research Associate, Jordan Mora, to maintain water quality stations, including but not limited to, collecting and filtering water samples, calibrating equipment, deploying units, and managing downloaded data. The assistant will support Ms. Mora with QAPP development through research and writing (Task 1). 206 hrs. @ \$20.12/hr., total \$4,144.72.

Fringe benefits are not included in proposal, as staff identified are not benefit eligible.

Waquoit Bay Watcher volunteer hours are contributed as match. Volunteer hours are associated with the Waquoit Bay Watchers Citizen Science Water Quality Monitoring Program (SWMP). The SWMP and Waquoit Bay Watcher programs are ongoing and all past and future data collected will be submitted to the Cape Cod Commission's regional database (Task 1). 546 hrs. @ \$24.69/hr., total \$13,480.74.

APCC will act as the fiscal agent for WBNERR.

Woods Hole Oceanographic Institution

Jennie Rheuban, Research Associate III: Ms. Rheuban will be responsible for data analysis and development of processing scripts, providing advice and direction on the selection of a pilot watershed and working with the project team on database quality assurance and control and to complete the detailed interpretation in the pilot watershed. Ms. Rheuban will work with Commission staff to integrate the processing script with the existing SQL database (Task 2, Task 3, Task 4). 1,216 hrs. @ 42.625/hr., total \$51,832.

WHOI match is in-kind labor provided by Dr. Scott Doney in the amount of \$12,339 and a WHOI contribution of \$23,066 for indirect costs in excess of 25% of the requested amount. Dr. Doney will advise Ms. Rheuban on data analysis and assist with data interpretation. WHOI's fringe rate is included in their Negotiated Agreement with Department of Navy. Fringe benefits are allocated as percentage to

total assignable salaries and allocated paid leave benefits, excluding overtime salaries. The provisional fringe rate of 45.99% for calendar year 2018 is broken out as: Retirement (23.19%), Health/Dental (11.55%), FICA (7.72%), Workers Comp (0.38%), Disability (1.00%), and Other Benefits (2.15%).

Center for Coastal Studies

Amy Costa, Associate Scientist: Dr. Costa will assist with quality assurance and control of the database and provide advice and guidance on data outputs and analysis needs (Task 1, Task 2). 390 hrs. @ \$34.60/hr., total \$13,494.

CCS match is 70 hours of in-kind labor provided by Dr. Costa and \$3,718 in indirect cost (\$2,256 for indirect cost in excess of 25% of the requested amount and \$1,462 for indirect cost applied to the in-kind labor)

UMass Dartmouth School for Marine Science and Technology

Brian Howes, Coastal Systems Program Director: Dr. Howes will assist with quality assurance and control of the database and provide advice and guidance on data outputs and analysis needs (Task 1, Task 2). 70 hours @ \$68.46/hr., total \$4,792.20.

Roland Samimy, Senior Research Manager: Dr. Samimy will assist with quality assurance and control of the database and provide advice and guidance on data outputs and analysis needs (Task 1, Task 2). 70 hrs. @ \$54.07/hr., total \$3,784.90.

SMAST will provide match of \$7,824 in indirect costs. The fringe rate is broken out as: 34.68% fringe benefit, 1.41% FICA, plus an additional \$16.50 per week Health and Welfare.

Travel

In-State Travel

In-State Travel is budgeted for attendance at project partner meetings, advisory committee meetings, and SNEP grantee meetings. Total budgeted is \$1,090. APCC source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$730.30. APCC's match: \$359.70.

Out-of-State Travel

RAE Summit: As suggested in the RFP, travel is budgeted for four staff to attend the 2018 RAE Summit. An estimate of \$6,000 includes conference registration fees, travel to/from airport, hotel, flight, and meals. APCC source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$5,340. APCC's match: \$660.

Dr. Scott Doney: Travel is budgeted for Dr. Scott Doney to attend annual meetings on project results. Dr. Doney will provide guidance on data analysis and assist with data interpretation (Task 3). The total amount budgeted is \$4,798. This estimate includes travel from the University of Virginia to WHOI, lodging for one week per year for each of the two years of the proposed project, car rental and per diem.

Equipment

Water Quality Monitoring Equipment

WBNERR will purchase monitoring equipment needed to upgrade the WBNERR water quality monitoring program to data standards comparable to other partner organizations (Task 1). Currently, one of the four SWMP stations is still occupied by an older model sonde, the YSI 6600-series. This station will be upgraded consistent with other sites in Waquoit Bay. The equipment request is for a YSI EXO2 sonde in the amount of \$6,500 (Item #599502-01). The purchase will be made in advance of the 2019 sampling season.

Supplies

Software

APCC will purchase software for data analysis, statistical analysis and plotting. An estimate of \$500 is budgeted (Task 3). APCC source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$335. APCC's match: \$165.

Workshop Supplies

APCC plans meetings to announce the State of the Waters report and has included an estimate of \$750 for supplies (Task 5). Source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$502.50. APCC's match: \$247.50.

WBNERR has budgeted \$1,500 in supplies to support end user meetings and watershed-based workshops to translate data to decision-makers (Task 2, Task 5).

Contractual

Database QA/QC

The Commission will advertise and competitively award a contract to a qualified firm to perform quality assurance and control on the existing database and develop procedures for ensuring quality assurance and control on data loaded to the database in the future (Task 1). A budget estimate of \$20,000 is based on previous experience.

QAPP Development

The Commission will comply with State law, County policies and Uniform Guidance related to procurement and competitively award a contract to a qualified firm to develop a QAPP for pond and lake data (Task 1). A budget estimate of \$7,500 is based on previous experience and funds for the QAPP Development will be provided by the Cape Cod Commission.

OneCape Summits

The Commission will hold two OneCape Summits during the project period. The work proposed in this project will be highlighted at each and each will be used as an opportunity to share data outputs, analyses and available information products. A budget estimate of \$20,000 for venue and audio-visual equipment for two conferences is based on previous experience. The Commission will comply with State law, County policies and Uniform Guidance related to procurement and competitively award a contract to a venue to host the Summits. SNEP request: \$10,000. Commission's match: \$10,000.

Cape Coastal Conference and Workshops

Venue rental fees and fees associated with audio visual equipment are anticipated to support watershed-based workshops and other outreach initiatives, including the Cape Coastal Conference, where project outputs, analyses and information products will be highlighted (Task 2, Task 5). An estimate of \$6,000 is budgeted based on previous experience.

Web Design

APCC will comply with State law and Uniform Guidance related to procurement and competitively award a contract to a qualified web design firm to create a State of Waters website (Task 4). A budget estimate of \$20,000 is based on previous experience. APCC source of match is from a 2018 Massachusetts Environmental Trust grant. SNEP request: \$13,400. APCC's match: \$6,600.

TMDL Solutions

TMDL Solutions will work with SMAST to support and provide guidance on data analysis and interpretation (Task 2). SNEP request: \$3,500.

Dr. Scott Doney

Dr. Doney will advise Ms. Rheuban and project partners on biogeochemical data analysis and assist with data interpretation (Task 3). \$12,339 in consulting charges is provided as in-kind match by WHOI.

Indirect Cost

Cape Cod Commission

In accordance with 2 CFR Part 200 App. VII D1b, the Commission, a local government agency that receives less than \$35 million in direct Federal funding, is not required to obtain NICRA. The Commission's audited FY17 indirect rate is 71.90% and is applied to direct labor only. CCC indirect costs included in the SNEP request (\$24,863) are within 25% indirect cost limit. This indirect cost rate equals to 27.16% rate if applied to the Commission's Modified Total Direct Costs of \$91,528.

Association to Preserve Cape Cod

Association to Preserve Cape Cod does not have Negotiated Indirect Cost Rate Agreement and de minimis indirect cost rate of 10% was applied to APCC's Modified Total Direct Costs of \$123,188. Total Indirect Cost: \$12,318.80. SNEP Request: \$9,044. APCC's match: \$3,274.

Waquoit Bay National Estuarine Research Reserve

Waquoit Bay National Estuarine Research Reserve does not have Negotiated Indirect Cost Rate Agreement and de minimis indirect cost rate of 10% was applied to WBNERR's Modified Total Direct Costs. Total Direct cost amount of \$52,875 was reduced by the estimated cost of equipment (\$6,500) for Modified Total Direct Costs of \$46,375. Total Indirect Cost: \$4,637. SNEP Request: \$3,289. WBNERR's match: \$1,348.

Woods Hole Oceanographic Institution

Woods Hole Oceanographic Institution has a Negotiated Indirect Cost Rate Agreement with Department of the Navy, Office of Naval Research, dated January 5, 2018, for the period of 1/1/18 – 12/31/18 (attached) The provisional indirect cost rate for 2018 is 62% and is allocated to Modified Total Direct Costs. Total Indirect Costs: \$49,889 (MTDC base of \$80,467). SNEP request: \$26,822 (25% of the agency request of \$107,289). WHOI's match: \$23,066.

Center for Coastal Studies

Center for Coastal Studies has submitted their Indirect Cost Proposal dated November 30, 2017 to the US Department of Commerce, NOAA Grants Division. CCS has received a letter from NOAA, dated January 31, 2018, stating that Center for Coastal Studies may use their indirect cost rate of 50.31% cited in its Indirect Rate Cost Proposal until the Proposal evaluation process is completed (attached). Indirect Cost rate of 50.31% was applied to MTDC of \$16,192.80. Total Indirect Cost: \$8,147. SNEP Request: \$4,429 (25% of the CCS request of \$17,715). CCS's match: 3,718.

UMass Dartmouth School for Marine Science and Technology

UMass Dartmouth has a Negotiated Indirect Cost Rate Agreement with the Department of Health and Human Services, dated March 10, 2017 (attached). The predetermined rate of 59% is effective for the period of 7/1/18 – 6/30/2010 and has been applied to MTDC of \$15,254. UMass Dartmouth SMAST has elected to include only \$1,175.40 of the indirect costs in their SNEP request and to apply the difference towards their match. Total Indirect Cost: \$9,000. SNEP request: \$1,175. UMass Dartmouth SMAST's match: \$7,825.

Total Indirect Costs included in the SNEP request (\$69,624) equal to 17.41% of the total amount of \$399,998 requested from SNEP for the proposed project.

Grant Totals Per Task

	Total Project Cost Per Task			
	Cost Item	SNEP	Non-Federal Match	Total
Task 1	Salaries & Fringes	46,558.28	24,898.39	71,456.68
	RAE Summit	1,001.67	165.00	1,166.67
	In-State Travel	182.58	89.93	272.50
	QA/QC Database	20,000.00	-	20,000.00
	QAPP Development	-	7,500.00	7,500.00
	Equipment	6,500.00	-	6,500.00
	Indirect Cost	10,314.72	8,460.99	18,775.71
Subtotal:		\$ 84,557	\$ 41,114	\$ 125,672
Task 2	Salaries & Fringes	42,847.38	3,601.53	46,448.92
	RAE Summit	666.67	-	666.67
	Workshop Supplies	750.00	-	750.00
	Cape Coastal Conference	2,500.00	-	2,500.00
	Indirect Cost	11,248.60	9,288.09	20,536.68
Subtotal:		\$ 58,013	\$ 12,890	\$ 70,902
Task 3	Salaries & Fringes	64,364.61	4,653.33	69,017.95
	RAE Summit	1,001.67	165.00	1,166.67
	In-State Travel	182.58	89.93	272.50
	Software	335.00	165.00	500.00
	TMDL Solutions	3,500.00	-	3,500.00
	Dr. Scott Donney & Travel	4,798.00	12,339.00	17,137.00
	Indirect Cost	22,022.25	19,109.62	41,131.87
Subtotal:		\$ 96,204	\$ 36,522	\$ 132,726
Task 4	Salaries & Fringes	71,867.10	19,744.97	91,612.07
	RAE Summit	1,001.67	165.00	1,166.67
	In-State Travel	182.58	89.93	272.50
	Web Design	13,400.00	6,600.00	20,000.00
	Indirect Cost	20,145.69	9,154.09	29,299.78
Subtotal:		\$ 106,597	\$ 35,754	\$ 142,351
Task 5	Salaries & Fringes	28,891.78	6,297.26	35,189.04
	RAE Summit	1,001.67	165.00	1,166.67
	In-State Travel	182.58	89.93	272.50
	Workshop Supplies	1,252.50	247.50	1,500.00
	OneCape Conferences	10,000.00	10,000.00	20,000.00
	Cape Coastal Conference	3,500.00	-	3,500.00
	Indirect Cost	4,492.26	1,038.66	5,530.92
Subtotal:		\$ 49,321	\$ 17,838	\$ 67,159
Task 6	Salaries & Fringes	3,239.28	1,079.76	4,319.04
	RAE Summit	666.67	-	666.67
	Indirect Cost	1,400.00	466.67	1,866.67
Subtotal:		\$ 5,306	\$ 1,546	\$ 6,852
TOTAL:		\$ 399,998	\$ 145,665	\$ 545,663

LIST OF ATTACHMENTS

Maps, photos, drawings, and additional information

- Attachment A. Map of Project Area
- Attachment B. Report Card Examples
- Attachment C: Project Team
- Attachment D: Literature Cited

Letters of Commitment

- Association to Preserve Cape Cod
- Buzzards Bay Coalition
- Cape Cod Water Protection Collaborative
- Center for Coastal Studies
- UMass Dartmouth School for Marine Science and Technology
- Waquoit Bay National Estuarine Research Reserve
- Woods Hole Oceanographic Institution

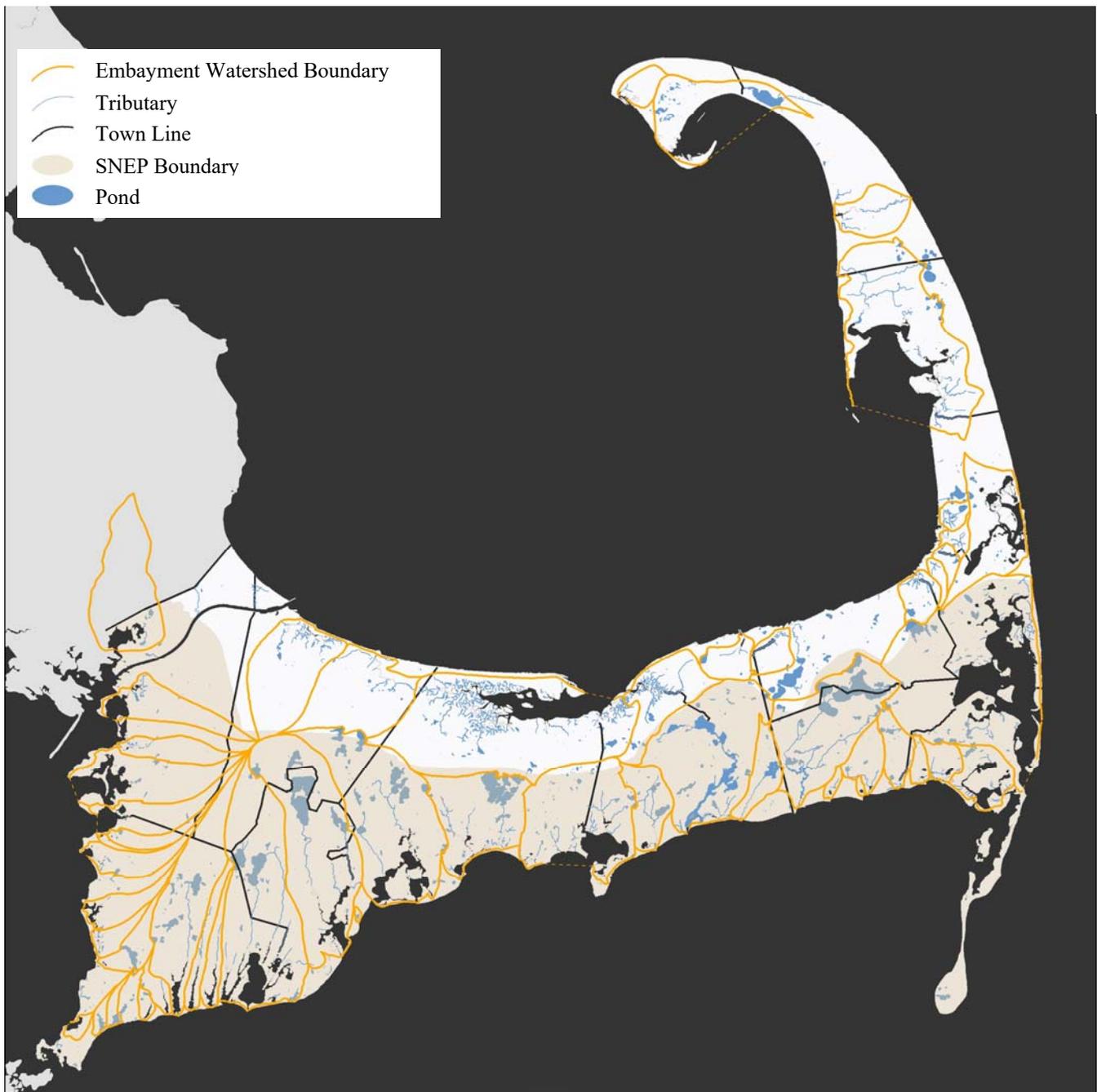
Organizational Budget and Statement of Financial Position

- Barnstable County Approved FY19 Operating and Capital Budget – Cape Cod Commission
- Barnstable County's Basic Financial Statements
 - Summary of Auditor's Results, Schedule of Findings and Questioned Costs
 - Expenditures and Changes in Fund Balances
 - Schedule of Fringe and Indirect Cost Rate – Cape Cod Commission

Negotiated Indirect Cost Rate Agreements

- Center for Coastal Studies
- UMass Dartmouth School for Marine Science and Technology
- Woods Hole Oceanographic Institution

Attachment A: Map of Project Area



Map of Project Area: The proposed project area includes all of Barnstable County. Approximately 60% of Cape Cod is within the SNEP boundary. Almost all the watersheds on Cape Cod that fall within the SNEP boundary are nitrogen impaired and have established total maximum daily loads or Massachusetts Estuaries Project Technical Reports documenting degradation and nitrogen thresholds.

Attachment B: Report Card Examples

California

- Elkhorn Slough National Estuarine Research Reserve. Elkhorn Slough Water Quality Report Card. <http://www.elkhornslough.org/waterquality-reportcard/>.
- California Environmental Protection Agency, State Water Resources Control Board. 2014-2015. https://www.waterboards.ca.gov/about_us/performance_report_1415/plan_assess/11112_tmdl_outcomes.shtml.
- Heal the Bay. Beach Report Cards for California beach water quality. <http://beachreportcard.org/default.aspx?tabid=4>.

Chesapeake Bay

- Chesapeake Bay Report Card. <https://ecoreportcard.org/report-cards/chesapeake-bay> .

Florida

- Florida Department of Environmental Protection. Interactive Water Quality Report Cards. <https://floridadep.gov/dear/watershed-monitoring-section/content/interactive-water-quality-report-cards>

Great Lakes

- Donahue, Michael J. January 2002. The Great Lakes: A Report Card. <https://scholarlycommons.law.case.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1451&context=cuslj>.
- Mills County Watershed Report Card. http://erieconserves.org/wp-content/uploads/mills_report_card.pdf.

Maine

- Natural Resources Council of Maine. 2014 Report Card for Maine. https://www.nrcm.org/wp-content/uploads/2013/09/2014_legislative_reportcard.pdf.

Massachusetts

- Blackstone River Watershed Interactive Water Quality Map. http://zaptheblackstone.org/interactive_map/index.php.
- Environmental Protection Agency, Region 1. 2017. Charles River water quality earns a “B” in 2015. <https://www.epa.gov/newsreleases/charles-river-water-quality-earns-b-grade-2016>.
- Massachusetts Water Resources Authority. 2014. EPA’s annual report card gives the Charles River an A- . <http://www.mwra.com/01news/2014/091114-epa-report-card-charles-river-a-.html>.
- Mystic River Report Card. 2016. <https://mysticriver.org/epa-grade/>.
- Mystic River Watershed Report Card. 2016. 2016 Mystic River Watershed Report Card Frequently Asked Questions. <https://www.epa.gov/mysticriver/2016-mystic-river-watershed-report-card-frequently-asked-questions>.
- Report of the Buzzards Bay Citizens’ Water Quality Monitoring Program 1992-1995. <http://buzzardsbay.org/bbpreports/1996-buzzards-bay-water-quality-monitoring-report.pdf>.
- Save the Harbor/Save the Bay. Annual Beach Water Quality Report Card on the Metropolitan Region’s public beaches. 2017. Report on 2016 beach water quality at 15 public beaches in 10 communities in the Boston area (Lynn, Swampscott, Nahant, Revere, Winthrop, East Boston, South Boston, Dorchester, Quincy and Hull). <http://www.savetheharbor.org/Content/beachesreportcard/>.
- Taunton River Watershed Alliance. 2017. 2016 Water Quality Report Card. <https://savethetaunton.org/2017/02/15/2016-water-quality-report-card/>.

New Hampshire

- New Hampshire Department of Environmental Services. Watershed Report Cards. https://www.des.nh.gov/organization/divisions/water/wmb/swqa/report_cards.htm.

New York

- Long Island Sound Water Report Cards. <https://ecoreportcard.org/report-cards/long-island-sound/>.

Oregon

- City of Portland, Oregon, Watershed Report Card. <https://www.portlandoregon.gov/bes/62109>.
- State of Oregon. Water Quality Index. <http://www.oregon.gov/deq/wq/Pages/WQI.aspx>.
- Willamette River (Oregon) Report Card. <http://www.oregon.gov/deq/wq/Pages/Willamette-River-Report.aspx>.
- Heal the Bays. Beach Report Card for Oregon. <http://beachreportcard.org/?st=OR&f=1>.

Texas

- Mission-Aransas National Estuarine Research Reserve. Little Bay Report Card. <https://missionaransas.org/little-bay-report-card>.

U.S.

- Environmental Working Group. 2017. Clean Water Report Card: Failing Grades. https://static.ewg.org/reports/2000/FailingGrades.pdf?_ga=2.72469146.882043222.1512587101-937361266.1512587101.

Washington State

- Pierce County, Washington. 2016 Report Card on Surface Water Health. <https://www.piercecountywa.org/ArchiveCenter/ViewFile/Item/5481>.

International

- World Wildlife Fund. Healthy Rivers for All. <https://www.worldwildlife.org/initiatives/healthy-rivers-for-all>.

Attachment C: Project Team

Woods Hole Oceanographic Institution	<p>Analysis Lead</p> <ul style="list-style-type: none"> Data analysis Processing script development Pilot watershed implementation Integration with database for future analysis and reporting
Waquoit Bay National Estuarine Research Reserve	<p>Collaboration Lead Data and Analysis Advisor</p> <ul style="list-style-type: none"> Provide data Project advisor Quality assurance/control guidance Data analysis advisor Structure collaboration process Facilitate end user meetings
UMass Dartmouth School for Marine Science and Technology	<p>Data and Analysis Advisor</p> <ul style="list-style-type: none"> Provide data Project advisor Quality assurance/control guidance Data analysis advisor
Center for Coastal Studies	<p>Data and Analysis Advisor</p> <ul style="list-style-type: none"> Provide data Project advisor Quality assurance/control guidance Data analysis advisor
Association to Preserve Cape Cod	<p>Information Products Lead</p> <ul style="list-style-type: none"> Integrate water resources data and analyses into information products Create water resources report cards Develop regional State of the Waters report Complete Freshwater data
Cape Cod Commission	<p>Project Lead</p> <ul style="list-style-type: none"> Lead project activities Coordinate tasks and track progress with project partners Database management Lead communication with project partners Data compilation and analysis

