

A Roadmap to Protection: Understanding the Costs of Adaptation

A Response to NOAA's
Announcement for a Coastal Management Fellowship

October 11, 2019

Prepared by the Delaware Coastal Programs

Delaware Coastal Programs Contact:

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Project Contact:



Date: 10/8/2019

Robert W. Scarborough, Ph.D.



INTRODUCTION

This document represents the Delaware Department of Natural Resources and Environmental Control's (DNREC) Delaware Coastal Programs' (DCP) response to NOAA's September 2019 request for project proposals for the Coastal Management Fellowships. It outlines a project proposal from the DCP, which includes the Delaware Coastal Management Program (DCMP) and the Delaware National Estuarine Research Reserve (DNERR), with support from other Divisions in DNREC and the University of Delaware. The outcome of this effort will meet the critical need to educate the public, legislators, community leaders and other stakeholders on the cost, implications and longevity of adaptation and protection actions against sea level rise and coastal storms. This project will directly address NOAA's strategic focus area of Resilient Coastal Communities. Primarily the sub-areas to: *"Increase public awareness of coastal hazards and actions that can be taken to reduce the loss of life and property."* and *"Build capacity to pursue strategies such as hazard preparedness, mitigation, and post-hazard redevelopment planning by providing an integrated suite of data, information, training, technical assistance, cooperative funding, and policy tools to coastal communities."* In addition, inherent through the process the project will address the sub-area of: *"Identify and engage partners in maximizing the understanding, visualization, and application of risk-wise strategies."*

As sea levels continue to rise and the costs of adapting and protecting infrastructure, businesses, homes and habitats continue to increase, informed decisions need to be made. State, county, and local ("community") officials, business owners, and homeowners alike need to know the initial and ongoing costs of adaptation and protection measures, how long certain measures will last, and the consequences of choosing one measure over another. Eventually, they will also need to understand when leaving certain areas of the coast is the most socially and economically viable solution. While retreat or abandonment is often the last option an individual or community desires, clearly illustrating the types of actions that can be taken by individuals, (e.g. raising utilities or flood proofing doors) or communities (e.g. improved drainage networks or freeboard ordinances) with the associated costs of action will allow for the proper consideration of risk vs. benefit before a final decision is made. Along this path there will be instances where individual actions are dependent on community actions and vice versa. Examples would include a homeowner needing to consider the cost to elevate their home if the community may not provide sewer for a failing septic system, or the community seeking approval of tax increase to maintain infrastructure repeatedly damaged but flooding. Through the efforts of the DCP and many others, adaptation options and recommendations have been developed; however, what is missing is a roadmap to navigate the path through these measures and arrive at a destination where an individual or community can implement the "right" measures based on their timeframe and willingness to accept the economic and societal impacts.

GOALS & OBJECTIVES

The goal of this project is to develop an outreach and education program for Delaware that details the actions communities, homeowners, business owners and land stewards can undertake to address encroaching coastal water levels. This program will encompass all practical actions to protect homes and properties from sea level rise and the associated needs or consequences of those actions.

The main objectives of the project will be to:

- Develop a catalogue of adaptation/protection measures based on the structure, infrastructure or land use impacted.
- Determine a typical cost for each adaptation/protection measure.

- Determine what ancillary activities must take place for a measure to be successful.
- Create a social and economic decision tree to guide the selection of actions.
- Identify funding sources for various actions.
- Develop outreach material and methods to effectively communicate this information to the public and government officials.

MILESTONES & OUTCOMES

The following milestones and outcomes have been developed to provide a general timeline and schedule for the project tasks and Coastal Fellow responsibilities. The Fellow's responsibilities are divided into four major tasks, each of which are considered a significant milestone having a product or anticipated outcome. The Fellow will lead on several tasks and serve as part of the support team on others. The project team has a broad range of expertise that provides some level of flexibility to tailor the Fellow's work plan and maximize their individual strengths and expertise. The tasks and deliverables are described in more detail in the project description section of this proposal.

Overview of the Project:

Task 1 – Develop a catalogue of adaptation/protection measures.

Deliverables:

- Compile a detailed list of adaptation/protection measures for homeowners, business owners, communities, and land stewards
- Identify ancillary activities that must occur for a given action and their associated costs
- Identify any positive and negative impacts of implementing a given action

Task 2 – Determine costs associated with each action.

Deliverables:

- Determine the “typical” costs or range of costs for an action
- Determine if there are ongoing costs associated with an action
- Determine if there are immediate or long-term cost savings for an action
- Develop a catalogue of funding methods to pay for the action

Task 3 – Develop Decision Tree

Deliverables:

- Create a decision tree based on socio-economic costs vs. the risks and desired timeline
- Determine where and when individual actions are dependent on community actions and vice versa

Task 4 – Outreach

Deliverables:

- Prepare a report of findings and procedures
- Conduct presentation(s) of products to stakeholders
- Develop informational brochures for public, community leaders and stakeholder groups
- Utilize web/social media for dissemination of information

Timeline:

	Year 1				Year 2			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Task 1								
Task 2								
Task 3								
Task 4								

PROJECT DESCRIPTION

Task 1 – Develop a catalogue of adaptation/protection measures.

Task 1 will involve the collection and cataloging of adaptation/protection measures that homeowners, business owners, communities and land stewards can implement to protect their homes or investments. For homeowners, these could range from raising utilities above grade level, flood proofing openings, improving drainage, and raising structures to the ultimate decision to abandon a location. For land stewards, land modifications, such as drainage ditches or building berms, or adjusting management practices to allow for change, such as planting salt tolerant crops and promoting other uses of marginal land. Community actions, which can range from local to county to state levels, will focus on measures that protect or serve a collection of homes or businesses or public interests. This would include raising roads, providing/maintaining sewer service, beach replenishment, drainage networks, and others. While this project will include community actions, the focus will be on the adaptation/protection measures for homeowners, business owners and land stewards. However, in order for some individual measures to be effective, or justified, there may be need for community measures to take place, therefore community actions need to be included with the understanding that this project will only provide limited information on those actions.

In some cases, additional actions will be required to support the implementation of one or more measures for the measure to be feasible or deemed successful. A homeowner could build a berm or a flood proof wall around their property, but this may necessitate a pumping system to remove accumulating rainfall. Or a house could be raised, but will the cost be justified if roads and utilities are not maintained. Also, some adaptation/protection measures may have undesirable secondary impacts, for instance, if land modification for improved drainage displaces the floodwater onto adjacent properties.

The Fellow, with support of DCP staff along with experts from the Department and other State and local agencies, will compile a catalogue of actions, a list of protection and adaptation measures based on individual actions and community actions. Additional, ancillary activities that may be required or would provide extra benefit will be identified, as well as undesirable impacts from any adaptation/protection measure on adjacent property or unwanted community or social impacts. The actions will also be identified by the level of protection they provide and the foreseeable life of the protection.

Task 2 – Determine costs associated with each action.

Task 2 will have the Fellow estimate the typical implementation and maintenance costs associated with each adaptation/protection measure. The Fellow will work with State and local officials to estimate costs for large scale projects (e.g. beach replenishment, roadway elevation) and will contact local businesses and search literature to estimate costs for individual actions. Immediate or long term savings from any actions will be identified and calculated into the net costs of an action (e.g. lower insurance rates), if applicable. The Fellow will work with the University of Delaware Institute for Public Administration to identify options to fund applicable measures. If it is deemed advisable to solicit consultant support for this Task or Task 3, the DCMP will provide funding and the Fellow may help develop contracts and/or MOAs for professional services.

Task 3 - Develop decision tree.

Task 3 will involve creating a decision tree process to assist individuals and communities in choosing adaptation/protection measures based on the cost of the action, the length of the time the action will provide protection, the need for ancillary action, social desires, and the amount of risk they are willing to assume. In addition to the physical life of an action, sea level rise will also be considered when determining the life span of protection provided by a measure.

Task 4 - Outreach.

Task 4 will be ongoing once the Fellow becomes familiar with all aspects of the project and will provide the Fellow with an opportunity to further their abilities in outreach through print, web and social media platforms. The Fellow will work with the DNERR Coastal Training Program Coordinator to develop outreach material appropriate for dissemination through various venues. A website will be created for this project and through regular postings on the DCP Twitter/Facebook /Instagram sites the Fellow will take advantage of social media to promote the project and present the public with project deliverables. The Fellow will also be responsible for communicating the progress and outcomes of the project to stakeholders and the public through a series of presentations and at the University of Delaware-sponsored Coast Day event. It is anticipated there will be opportunities for presentations at national conferences along with several regional conferences. A complete project report will be required including a description of the adaptation/protection methods; costs and ancillary actions needed; a decision tree tailored to homeowners, business owners, communities and land stewards; and an appendix of funding options.

FELLOW MENTORING

This is a multi-year project with challenging tasks that cannot be met by an individual effort. It will require a team of individuals with varying management and technical backgrounds. From joining the project to completion of the Fellowship term, the Fellow will be fully integrated into this project as part of the leadership team. The DCP team for this project has extensive experience to carry out each phase of this project, providing the Fellow an opportunity to work closely with professionals with various types of specialized expertise. The Fellow will be one of the individuals that are crucial to the successful completion of the project and will take on a lead role and increasing project responsibility as they gain experience and confidence through the peer to peer mentoring activities with the project team. The Fellow will gain valuable experience in the area of coastal resilience, economics, and understanding the wide range of impacts adaptation/protection decisions may have on individuals and

the community. The Fellow will also hone their collaboration skills working with various divisions in DNREC, other agencies in the state, several federal agencies, the University of Delaware, consultants and other experts in the field.

The Fellow will be under the primary supervision of the Delaware Coastal Programs' Environmental Program Manager II, but will work very closely with staff from the DCMP and the DNERR. The Fellow will be mentored by Bonnie Arvay, an Environmental Scientist IV in the DCMP, and a former NOAA Coastal Management Fellow and Fellow mentor. Staff from University of Delaware Sea Grant and DNREC's Division of Watershed Stewardship, Shoreline and Waterway Management Section (SWMS) will also act as expert advisors to the Fellow. The Fellow will be located in the DCMP offices in Dover and have access to facilities available at the DNERR. The dedicated Project Team is outlined below:

- Coastal Management Fellow
- Robert Scarborough, Ph.D., DCP Environmental Program Manager II
- Bonnie Arvay, DCMP Environmental Scientist IV
- Drew Faulhaber, DCMP Environmental Scientist II
- Kelly Valencik, DNERR Coastal Training Program Coordinator
- Carl Yetter, DCMP Environmental Engineer
- Danielle Swallow, UD Sea Grant Coastal Hazards Specialist
- Michael Powell, Administrator, SWMS
- David Warga, Environmental Scientist III, SWMS-Flood Plain Management Section

The Fellow will be an integral part of this team of coastal management and technical professionals, and will never be left without the guidance, assistance, and leadership of a team member. This team integration approach will ensure that the Fellow receives the maximum concentration of educational and professional development opportunity possible while gaining valuable experience on the varying aspects of coastal management.

PROJECT PARTNERS

Each of the project partners listed below have communicated interest and willingness to support this project. All have agreed to participate in the project and provide any data and technical support necessary to make the project a success, including the Resilient and Sustainable Communities League (RASCL), which is a collaborative network made up of partners working to promote resilience and sustainability in communities across the State of Delaware.

- Delaware Department of Natural Resources and Environmental Control
 - Division of Climate, Coastal & Energy
 - Delaware Coastal Programs
 - Delaware Coastal Management Programs
 - Delaware National Estuarine Research Reserve
 - Climate & Sustainability
 - Division of Watershed Stewardship
 - Shoreline and Waterway Management Section
- Delaware Office of State Planning Coordination

- University of Delaware
 - Institute for Public Administration
 - Sea Grant
- Resilient and Sustainable Communities League (RASCL)
 - Center for the Inland Bays
 - Delaware Dept. of Natural Resources and Environmental Control (DNREC)
 - Delaware Dept. of Transportation (DeIDOT)
 - Delaware Emergency Management Agency (DEMA)
 - Delaware Center for Environmental Monitoring and Analysis (CEMA)
 - Delaware Division of Public Health
 - Delaware Forest Service
 - Delaware Geological Survey
 - Delaware Interfaith Power and Light
 - Delaware League of Local Governments
 - Delaware Nature Society
 - Delaware Sea Grant
 - Delaware Sustainable Energy Utility
 - Office of State Planning Coordination
 - Partnership for the Delaware Estuary
 - The Nature Conservancy Delaware
 - University of Delaware Coastal Resilience Design Studio
 - University of Delaware Institute for Public Administration (UD IPA)
 - University of Maryland Environmental Finance Center

COST SHARE

The Delaware Coastal Management Program will provide a furnished office along with the core group of DCP staff assigned to the project. This will also include a personal computer with office software (Microsoft Office), ArcGIS software, and other software as needed. The Fellow will also have full State e-mail and internet capabilities, access to all DNREC and DCP network data drives, and will have access to a shared laptop. The Fellow will also be provided any additional resources deemed necessary for completion of the project. All work transportation will be provided, and state vehicles will be available for all project activities as needed.

In addition, the DCP will provide funds and materials for all workshops and symposiums required for the project, funding for any necessary training, as well as printing, photocopying, mailing, and incidental costs for project interim products. Funds are also available for travel to professional conferences or meetings in which the project aspects are presented and for project related training. Other funds will also be available for any consultants or data collection that may be deemed necessary for successful completion of the project.

The DCMP will provide the \$15,000 Fellowship match through State funds. This will be paid in \$7,500 per year installments.

STRATEGIC FOCUS AREA

This project will directly address NOAA’s strategic focus area of Resilient Coastal Communities. Primarily the sub-areas to: *“Increase public awareness of coastal hazards and actions that can be taken to reduce the loss of life and property.”* and *“Build capacity to pursue strategies such as hazard preparedness, mitigation, and post-hazard redevelopment planning by providing an integrated suite of data, information, training, technical assistance, cooperative funding, and policy tools to coastal communities.”* The development of the adaptation/protection actions catalogue along with implementation decision tree will provide, an easily understood format, the actions that individuals and communities may take to protect the property and interests from sea level rise and coastal storms. The information provided will build capacity for individuals and community leaders to determine the proper adaptation/protection measures that balance cost, risk aversion and time into their plans. The project will also supply training on the decision process and use of the catalogue to the stakeholders.

The work of the Fellow will also impact the sub-focus area: *“Identify and engage partners in maximizing the understanding, visualization, and application of risk-wise strategies.”* This proposed project will help bring together a wide range of groups, based on the collaboration needs of determining potential and necessary actions. The development of the decision tree process could be easily be used in other states, which the Fellow could assist with dissemination through presentations and trainings if requested.



Sea Grant College Program
Marine Advisory Service

University of Delaware
Hugh R. Sharp Campus
700 Pilottown Road
Lewes, DE 19958-1298

October 4, 2019

To Whom It May Concern:

I am the Coastal Hazards Specialist for Delaware Sea Grant, and am a frequent partner of the Delaware Department of Natural Resources and Environmental Control (DNREC). I am pleased to offer my enthusiastic support of the DNREC Delaware Coastal Programs' project proposal for the NOAA Coastal Management Fellowship. The project, "*A Roadmap to Protection: Understanding the Costs of Adaptation*," would generate a menu of options that homeowners, businesses, or other property owners could take to improve the resilience of their property to coastal storms and sea level rise. I like that this project will identify a range of options and average costs, along with related steps and potential considerations that would make or break a project. I find that homeowners are not well-educated about the options available to them and the resources that can assist them. By compiling this information into one place and distilling it down into clear steps or a decision tree, this project will create a useful decision support tool that will aid outreach at the community level. There is a clear need for more outreach and better ways of expressing the adaptation options available to homeowners, businesses, and others in the community.

I am willing to support this project by serving in an advisory capacity during the scoping and design of the tool. Moreover, I will gladly support the outreach and education associated with this tool when it is completed. Please do not hesitate to contact me if you have questions.

Sincerely,

A handwritten signature in blue ink that reads "Danielle Swallow".

Danielle Swallow
Coastal Hazards Specialist
Delaware Sea Grant



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL
DIVISION OF WATERSHED STEWARDSHIP
89 Kings Highway
DOVER, DELAWARE 19901

OFFICE OF THE
DIRECTOR

PHONE: (302) 739-9921
FAX: (302) 739-6724

October 7, 2019

To Whom It May Concern:

The Department of Natural Resources and Environmental Control, Division of Watershed Stewardship's Shoreline and Waterway Management Section (SWMS) fully supports the Fellowship proposal *A Roadmap to Protection: Understanding the Costs of Adaptation*. As the SWMS has responsibility for the Beach Regulatory Program and conducts or oversees all beach replenishment and dune protection activities for the state, including being the point of contact for U.S. Army Corps of Engineers projects for coastal protection, we are fully aware of the need for this type of information to help the citizens and agencies of the state make the proper decisions about coastal protection and adaption to sea level rise.

The SWMS has previously contracted for studies on the cost and benefits of beach nourishment for the coastal communities and will work with the Fellow to incorporate this information into their results. In addition, the SWMS is home to the Floodplain Management Program and acts as a liaison between the Federal Flood Insurance Program and local municipalities, another critical aspect of the proposed project where we are more than willing to assist the Fellow.

The SMWS believes this proposed Fellowship will provide critically needed information to the public and local municipalities on the proper path forward for coastal resilience and are willing to participate in regularly scheduled progress meetings with the Fellow and others working on the project.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michael S. Powell".

Michael S. Powell
Administrator
Shoreline and Waterway
Management Section

Delaware's good nature depends on you!

October 4, 2019

To whom it may concern,

Sea level rise is the most serious long-term threat facing the State of Delaware. To date, local communities throughout Delaware have faced this challenge with limited resources and capacity to act. More needs to be done – at all levels of government and the private sector - to support municipalities as they plan, prepare, and adapt to the demands imposed by sea level rise. It is for this reason that I write this letter of full support for Delaware Coastal Program’s application for a NOAA Coastal Management Fellow.

The proposal dovetails perfectly with the needs of the communities around our coastal state. As someone who works with municipalities to provides technical planning and policy assistance, I can testify that conversations with local leaders on the subject of sea level rise adaptation follow a similar script. Once community leaders understand their risks, they frequently note that they are unaware of the range of possible adaptation strategies. Next, they pose legitimate questions about the cost effectiveness of the various strategies, both in the short and long term. Since most municipalities in Delaware have modest budgets, concerns are voiced about how to pay for implementation. The proposal addresses each of these points, and the addition of a Coastal Management Fellow would provide a critical resource to help develop a systematic process for local decision-making on sea level rise adaptation. The deliverables described in the proposal would be a tremendously beneficial compliment to the technical assistance services offered by myself and the much larger community of practitioners working on this issue in Delaware.

I therefore wish to enthusiastically support the Delaware Coastal Program’s proposal for a Coastal Management Fellow, and I happily commit to mutually-beneficial collaboration with the mentorship team by providing time and support as needed to ensure the Fellow’s success.

Sincerely,



Philip Barnes, Ph.D.
Institute for Public Administration
Biden School of Public Policy and Administration
University of Delaware



**STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF STATE PLANNING COORDINATION**

October 7, 2019

RE: NOAA's Coastal Management Fellowship- Delaware Coastal Programs Proposal

Dear NOAA Reviewer:

I am writing to express my support for the Delaware Coastal Programs proposal titled, "A Roadmap to Protection: Understanding the Costs of Adaptation", submitted for consideration for the NOAA Coastal Management Fellowship.

The proposal aims to provide community leaders and the public with the tools necessary to make informed decisions about climate adaptation strategies. The stated goal of the project is to develop a comprehensive outreach and education program to help Delawareans evaluate options and select community-appropriate adaptation strategies for sea level rise.

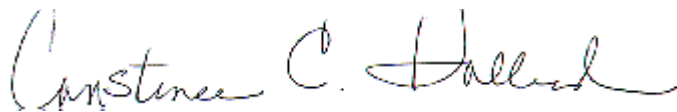
As everyone knows, Delaware is a small state. Within its boundaries there are only three counties, and within those counties are 57 municipalities. These 57 municipalities range in population size from a mere 74 people in the smallest town to 71,263 people in the largest city. As expected, the capabilities and limitations of each local government varies. In fact, only 9 of the municipalities within Delaware have professional planning staff! The majority have planning commissions with members of varying backgrounds that volunteer their time or receive a minor stipend. This illustrates the tremendous need for a simplified and streamlined resource to aid community leaders in navigating options, costs, and outcomes of various adaptation strategies.

Ensuring communities have the resources needed to adequately plan for future conditions is a primary goal of my office. This includes helping communities increase their local capacity to address sea level rise. Providing technical information combined with an outreach component on how to evaluate and select appropriate adaptation measures is a key component of this project. I fully support the targeted outreach and education to local governing councils, decision makers, and the public.

Further, my office is an active member of the Resilient and Sustainable Communities League (RASCL), collaborative network of partners working to promote resilience and sustainability in communities in Delaware. Collectively we acknowledge the importance of improving delivery of information about adaptation options to communities in a manner that resonates with a non-technical audience. The deliverables outlined in the fellow proposal will aid tremendously in this effort. Specifically having a comprehensive list of adaptation measures as well as a “decision tree” to guide communities towards the strategy that best fits their needs and abilities will be incredibly valuable.

The Office of State Planning Coordination has successfully worked with the Delaware Coastal Programs on numerous planning and research initiatives. We have come to rely upon Dr. Scarborough and his team to provide technical expertise and guidance to communities facing climate related challenges. Given the alignment of the project to our core mission of supporting local government planning and knowing firsthand the quality outcomes that Coastal Programs leadership and staff produce, my office enthusiastically supports the proposal and looks forward to working with the fellow on this project.

Sincerely,

A handwritten signature in cursive script that reads "Constance C. Holland". The signature is written in black ink and is positioned above the typed name and title.

Constance Holland, AICP
Director, Office of State Planning Coordination

October 7, 2019

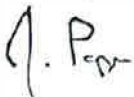
Dear Selection Committee,

As Steering Committee members of the Resilience and Sustainable Communities League (RASCL) we fully support the Delaware Coastal Programs Fellowship proposal of "A Roadmap to Protection: Understanding the Costs of Adaptation". As RASCL's vision is "vibrant and prepared communities that thrive in the face of changing environmental conditions" this proposal would help fulfill that vision by providing information to the communities at risk from coastal hazards to better understand the costs of adaptation and help them plan for the future.

The organizational members of RASCL will support the project through information transfer, being points of contact with member agencies and providing networking and outreach opportunities for the Fellow. RASCL members include state agencies, nonprofits, an academic institutions, providing a range of expertise to assist the Fellow. RASCL will also provide outreach opportunities for the Fellow, including quarterly coffee hours which promote informal networking opportunities between RASCL partners and local community representatives. In addition, RASCL plans an annual summit, attracting 200+ attendees from all levels of government, including local, state, and federal, as well as representation from community members, nonprofits, and academic institutions. This summit will provide an additional opportunity for the Fellow to report findings to a diverse audience.

As sea levels continue to rise, the steps towards, and the costs of adaptation need to be fully understood for communities to make the proper decisions in their investments and plans. The results of this Fellowship will play an important part in those decisions.

Sincerely,



Jim Pappas, Deputy Director - Support & Operations, Delaware Department of Transportation



Kate Hutelmyer, Watersheds Program Manager, Partnership for the Delaware Estuary



Kaitlin Tucker, Watershed Planning Coordinator, Partnership for the Delaware Estuary



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL
DIVISION OF CLIMATE, COASTAL, & ENERGY

CLIMATE & SUSTAINABILITY
PROGRAMS

100 W. WATER STREET, SUITE 5A
DOVER, DELAWARE 19904

PHONE: (302) 735-3480

October 6, 2019

Dr. Robert Scarborough
Delaware Coastal Programs
100 West Water Street
Dover, DE 19904

Re: 2019 NOAA Coastal Management Fellow Proposal—A Roadmap to Protection:
Understanding the Costs of Adaptation

Dear Dr. Scarborough:

I write to provide my strong support for the Delaware Coastal Programs' proposal to host a Coastal Management Fellowship to conduct a 2-year project entitled "A Roadmap to Protection: Understanding the Costs of Adaptation."

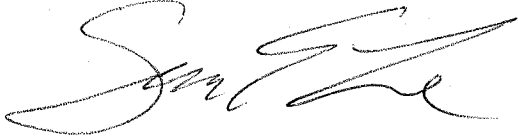
The state of Delaware is a recognized leader in climate adaptation, due in great part to the efforts of your program over the past decade. The Delaware Coastal Programs has been one of the primary driving forces behind the development of unique and Delaware-specific data, tools, and programs. These tools are the building blocks for responding to climate change in our state, as are the partnerships that developed over the course of this work. These datasets and tools, coupled with strong existing climate change partnerships, will be a significant asset to the selected Coastal Management Fellow and will help ensure his or her success.

This proposed project is a necessary component of Delaware's plan to prepare for climate change and directly supports implementation of key priorities outlined in the 2013 policy document "Recommendations for Adapting to Sea Level Rise in Delaware." Recommendation 6.5 in the document cites the need to "develop a database of costs of adaptation options for use by decision-makers and the public." It also cites the need to provide technical assistance and outreach to land managers (Recommendation 6.2) and local governments (Recommendation 6.1)—both of these audiences are targeted for outreach in this proposal.

I also pledge support from my office to help ensure the success of the Fellow and the project. My office hosts programs for climate change mitigation and adaptation, as well as programs for sustainability. We stand ready to provide technical assistance to the selected fellow and can assist with workshops and public events as needed.

I look forward to working with you on this project and wish you the best of luck in securing a Coastal Management Fellow for this important initiative.

Sincerely,

A handwritten signature in black ink, appearing to read "Susan E. Love". The signature is fluid and cursive, with a large initial "S" and a long, sweeping underline.

Susan E. Love, Administrator