

**1.0 Cover Page**

**DCMP FY2013 Coastal Management Assistance Grant Program**

**Project Title** SLR & Storm Surge Adaptation - Code Changes and Risk Assessment Mapping

**Municipality/  
Organization** Town of South Bethany - Sussex County, Delaware  
*Enter name of government entity, non-profit organization, etc. responsible for conducting the project.*

**Contact Information**

**Applicant Name/Title** Mr. Melvin Cusick, Town Manager - Town of South Bethany

**Phone Number** 302-539-3653 ext 213

**Email** townmanager@southbethany.org

**Address/PO Box** 402 Evergreen Road

**City, State, Zip** South Bethany, DE 19930

**Project Manager Name/Title** Dr. George Junkin, Council Member, Chair SLR&SS Committee

**Phone Number** 443-794-6261

**Email** gjunk2@aol.com

**Proposed Budget (Total)** \$19,357.90

**Federal Funds Requested** \$ 9,500.00

**Matching Funds Provided** \$ 9,857.90

**Project Duration (months)** 8

**Project Area** Town of South Bethany - Sussex County, Delaware  
*Identify location or geographical extent of the project*

**Applicant Signature** 

**Date** February 4, 2014



## TOWN OF SOUTH BETHANY

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South Bethany, DE 19930

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February 5, 2014

Bonnie Arvay  
Delaware Coastal Programs (DCP)  
Department of Natural Resources and Environmental Control  
5 E. Reed Street, Suite 201  
Dover, DE 19901

Dear Ms. Arvay

The Town of South Bethany is pleased to have the opportunity to submit our proposal, *Sea Level Rise Adaptation – Code Changes and Risk Mitigation Mapping*, for a DNREC Coastal Management Assistance Grant. This grant will provide the data required by the Town to further define protection and accommodation options for Sea Level Rise (SLR) adaptation strategies. As you know, approximately 800 of South Bethany's home owners incurred damage due to flooding by Super Storm Sandy. These planning and design projects will be necessary to adequately address the effects of climate change and sea level rise on the Town and its citizens. This project will also increase the public's awareness of Sea Level Rise through outreach and education.

The Town has been active in its quest to further understand SLR. In 2012 the Town appointed Dr. George Junkin to be the lead person on SLR for the Town of South Bethany. He has been regularly attending SLR Committee Meetings and would be the Town's technical lead on this grant.

The Town has a strong working relationship with the South Bethany Property Owners Association (SBPOA). The Town has partnered with the SBPOA, in the past, to successfully execute water quality improvement grants.

The Town has selected the Pennoni Associates, a top ranked international firm that has completed many sea level rise vulnerability studies around the County as well as here on the Delmarva Peninsula, to support the *Sea Level Rise Adaptation – Code Changes and Risk Mitigation Mapping* Program.

The Town looks forward to working with you and the DCP on this program to better understand the implications of SLR and the adaptations that would be required to mitigate the consequences of SLR.

If you have any questions or require additional information, please contact me or any of the key personnel identified in the proposal.

Sincerely,

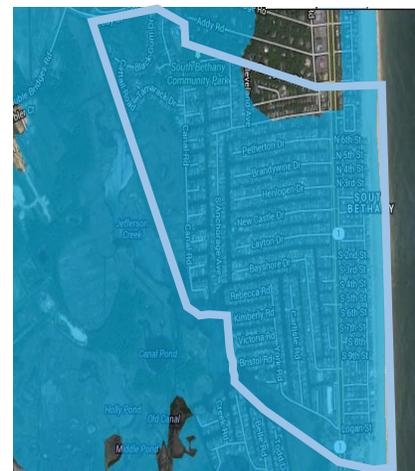
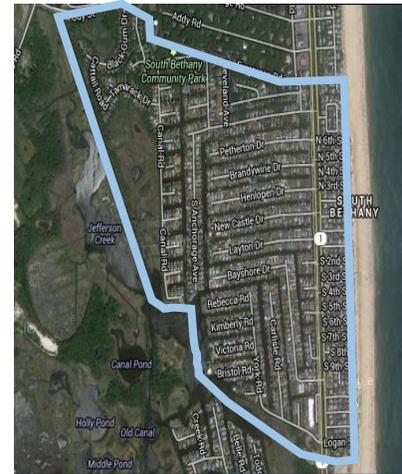
Kathy Jankowski, Mayor Town of South Bethany

## 2.0 Background and Justification

### 2.1 Coastal Flooding

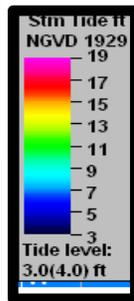
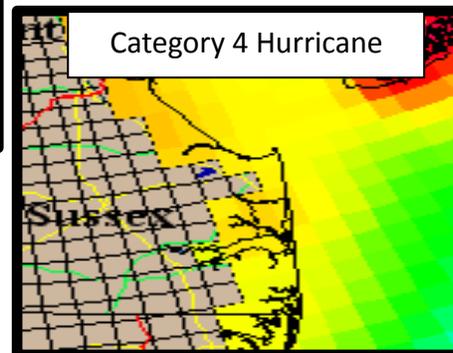
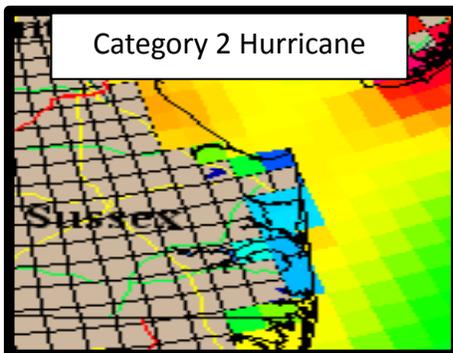
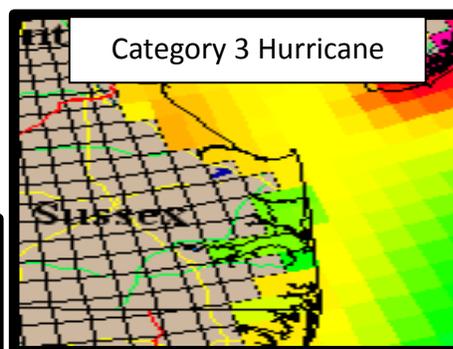
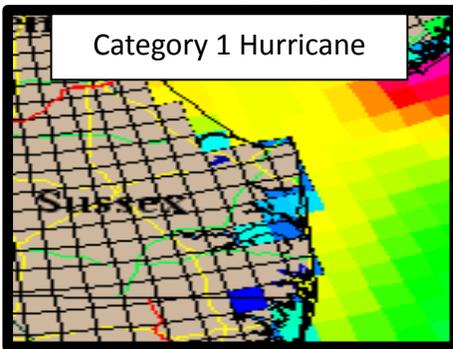
The Town of South Bethany (at right) is a densely populated coastal community developed in the 1950s. It consists of approximately 1,200 single family homes situated on 270 acres located in the southeastern part of Sussex County, Delaware, between the Atlantic Coast and the Little Assawoman Bay and the Assawoman Canal. The incorporated towns near South Bethany are Bethany Beach and Ocean View to the north and Fenwick Island to the south. There are urban, unincorporated parts of Sussex County adjacent to the Town's borders. Delaware State Route 1 bisects the town from north to south.

Over 90% of the area within Town of South Bethany's municipal boundary lies within FEMA's current Flood Insurance Rate Map (FIRM), 100 year flood zone. In addition, storm surge maps generated by the National Oceanic and Atmospheric Administration (NOAA), place the town in high flood risk areas for Category 1, 2, 3 and 4 Hurricane events.



FIRM – 100 Year Flood Inundation Area

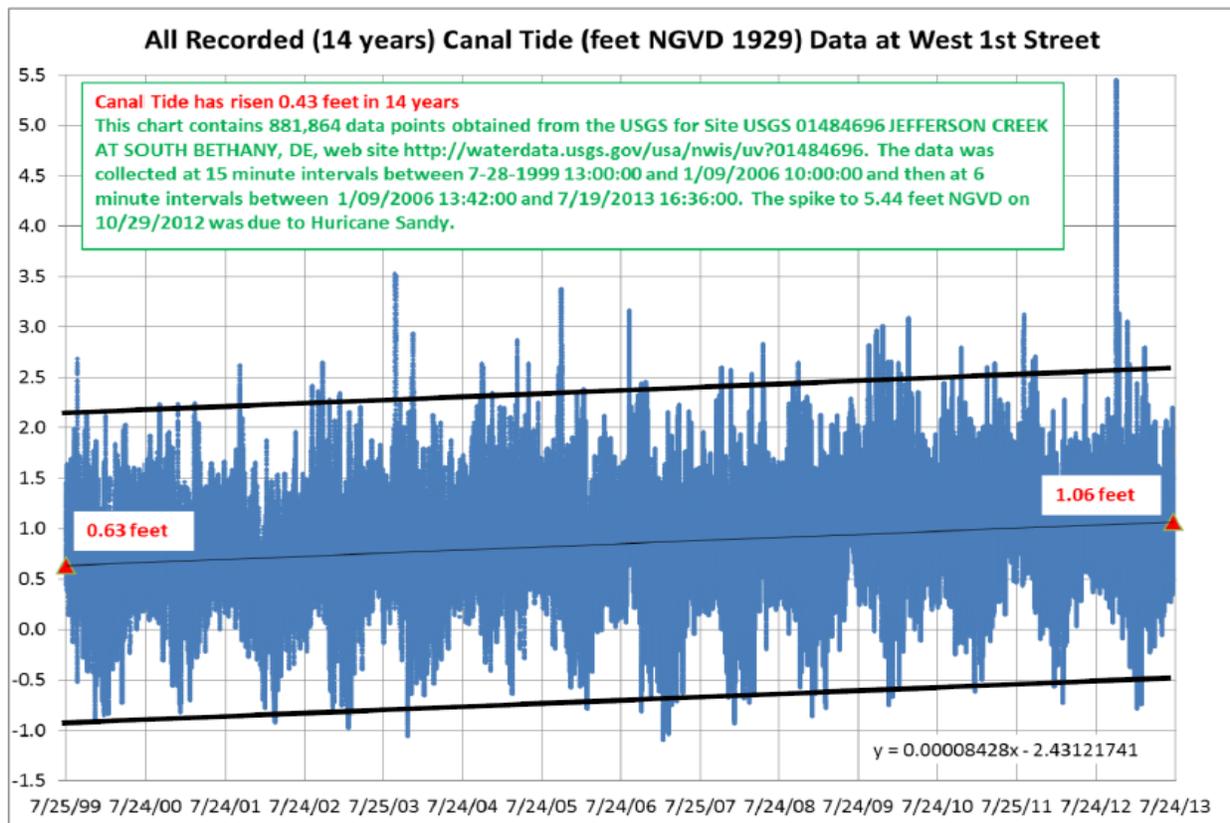
### NOAA – Maximum Storm Tide Maps (storm hitting at high tide)



Local geography and elevation further put the Town at risk due to sea level rise and changes in weather patterns, such as more frequent and stronger coastal storms due to climate change. Due to the shape and outflow characteristics of the Little Assawoman Bay, and its effect on Little Bay and Jefferson Creek, the Town regularly experiences tidal flooding and occasionally ocean over-wash flooding during the worst coastal storm events. South Bethany suffered severe damage as a result of Superstorm Sandy, as shown by the 10/31/2012 News Journal photo by Robert Craig (at right), with substantial tidal flooding on the bayside of the Town overtopping local roads and flooding most homes.



In 1999, South Bethany Property Owners Association (SBPOA) member and former Town Council member Lloyd Hughes was instrumental in getting the tide gauge installed in the South Bethany canals. Historical data (See Chart) from that gauge shows that canal tides have increased 0.43 feet in the last 14 years. If the sea level were to rise 2.6 feet, South Bethany would experience flooding, similar to that caused by Sandy, an average of two times per year.



In 1976 the Town of South Bethany entered the NFIP. In 2005, the Town began to systematically address short term and long term coastal flooding and provide a level of resilience. In 2005, the Town's updated Comprehensive Development Plan (CDP), which has

recently been reviewed and accepted by the State, identified several implementation strategies. In 2007 the Town of South Bethany entered the CRS. The Town, under DNREC Coastal Management Assistance Grant (Purchase Order –STATE 0000187963, 07/10/2013), has completed an elevation survey of the centerlines of all roads, bulkheads and stormwater catch basins east of DE Rt. 1. Under this grant the Town will be conducting public meeting to inform homeowners of the results of the elevation survey and of the Sea Level Rise and Storm Surge issues that directly affect South Bethany.

## 2.2 Work Funded by Grant

The Town of South Bethany requests this grant to further implement coastal flood resilience measures as discussed below.

### 2.2.1 Town Code Review and Revision

Consistent with the recommendations in the CDP, the Town proposes to review and revise Town Code to regulate parcel use, density of development, building dimensions, setbacks, type of construction, shore protection structures and landscaping.

Review of the Town code will identify barriers to and opportunities for implementing coastal resilience measures. Anticipated modifications to the Town Code are currently focused on requiring freeboard in addition to the minimum FIRM requirements and to allow homeowners to raise their bulkheads. This will increase resiliency and protect future homes from additional SLR & SS events.

### 2.2.2 Sea Level Rise Vulnerability Assessment (Risk Assessment)

Using the requested grant funds, the Town will develop a coastal sea level vulnerability assessment (risk assessment) to evaluate the vulnerability of homes, critical buildings and infrastructure to coastal flooding. The risk assessment will provide a tool for future land use decisions and will become part of the Town's long term Flood Management and Hazard Mitigation Plan.

### **3.0 Scope of Work**

#### **3.1 Goals and Objectives**

The goals of the Code Modifications and Risk Assessment Plan are to:

- protect residents and their property from floods through the prevention of adverse impacts caused by development in the floodplain
- develop two critical components (Zoning Code Modifications and Risk Assessment) of a comprehensive Coastal Resiliency Plan
- provide an effective tool for making future land use decisions

The Objectives of the Code Modifications and Risk Assessment Plan are to:

- Review the existing Town code to identify barriers or opportunities for improvements related to coastal flood protection and resiliency
- Modify the existing Town Code to guide future development to prevent damage to both the man-made and natural environments
- improve coastal flood protection and resiliency
- Develop a South Bethany-specific flood inundation and vulnerability map for existing and future conditions (future conditions mapping will incorporate sea level rise)
- Assess the vulnerability of homes, critical buildings and infrastructure to coastal flooding and sea level rise.

#### **3.2 South Bethany Code Modifications and Risk Assessment Plan Project Team**

The Town will assemble a team of Town officials, residents, professional planners and floodplain managers to perform the Code Modifications and Risk Assessment Plan Project. Town of south Bethany staff will include:

Kathy Jankowski, Mayor  
George Junkin, Council Member  
Melvin Cusick, Town Manager  
Joe Hinks, Code Enforcement Constable  
Sea Level Rise & Storm Surge Committee  
Charter & Code Committee

The Town will hire Pennoni Associates to assist with the review and modifications of the zoning and building codes as well as development of the risk assessment plan. Pennoni Associates will provide certified floodplain managers (CFM) and planners (AICP) to the team. Pennoni will also provide surveying and mapping capabilities to the project team. Pennoni staff has been working with communities of Coastal Delaware to address flooding concerns for over 20 years. Bruce Jones, PE, will lead Pennoni's project team. Mr. Jones is a former Program Administrator in DNREC's drainage section and is familiar with coastal flooding and impacts throughout the state.

Pennoni Associates also has a teaming agreement with the University of Delaware to work on coastal flooding and resiliency projects. Pennoni proposes to enlist the help of the University's Disaster Research Team in development code modifications and the risk assessment.

The Town of South Bethany would also request that DNREC's Coastal Zone Program be part of both the Code Modifications and Risk Assessment teams. The Town has successfully worked closely with Mike Powell, Susan Love and Wendy Carey in the past. In addition, Pennoni Associates has a history of working successfully with DNREC and the Coastal Zone Program.

### 3.3 Scope of Work

#### 3.3.1 Town Code Review and Modification

The Town's Code Review Team will review how existing zoning and building codes address development in the floodplain. The primary objective of the Code Review Team is to modify the existing Zoning and Building Codes to guide future development and to prevent flood damage to both the man-made and natural environments. The Code Review Team will meet in a series of workshops to review the existing code and make recommendations on code improvements. The team will also perform a field review of existing conditions as a group to observe areas of the town that are vulnerable to flooding and sea level rise.

Changes to the Zoning Code will consider:

- Amendments to reflect FEMA's new maps for the Sussex County, Delaware (if adopted at the time of completion);
- Revising the code language maps so that in the future the most current FEMA maps can automatically be used to regulate the floodplain without a lengthy legislative process to change the plan district maps;
- Adding/Amending Potential Flood Hazard Area Maps, and;
- Establishment of a Flood Management Plan with regulations that meet or exceed minimum NFIP requirements

Changes to the Building Code will consider:

- Floor elevation above base flood elevation;
- Allowable building types, and;
- Allowable building materials.

#### 3.3.2 Risk Assessment

The Town Risk Assessment Project Team will establish South Bethany-specific risk assessment maps to evaluate the vulnerability of critical infrastructure and buildings to sea level rise and flood hazards. The team will use a series of map overlays to establish vulnerability in different sea level rise and coastal storm scenarios:

- Existing State LIDAR Maps
- Existing DNREC Sea level Rise Maps
- Existing and updated FEMA FIRM Maps
- Existing NOAA Surge Maps
- 2013 Elevation Survey of the centerlines of all roads, bulkheads and stormwater catch basins east of DE Rt. 1.
- Critical facilities and infrastructure map (to be developed by the Project Team).

The maps will show if an element of critical infrastructure or a critical facility falls within an inundation area and consequently, at risk. The risk assessment maps will indicate which of the Town facilities are vulnerable or at risk as a result of sea level rise and flooding events. The risk assessment will also consider where the water comes from, how and where it flows and the people and assets affected by it.

### 3.4 Project Feasibility

The Code Modification and risk Assessment Project follows a simple approach. During the Code modification phase, technical and planning professionals will use the model code on the DNREC web site as a basis for changes to the current Town Code. During the process there will be significant stakeholder participation to arrive at a consensus as the required floor elevation freeboard that will be applied and to the bulkhead height that will be required.

The Risk Assessment Project uses a series of existing broad scale maps (LIDAR, sea level rise, FIRM, storm surge, etc.) to establish a South Bethany-specific risk assessment plan

### 3.5 Deliverables

At the completion of the Code Modifications phase of the Project, the Team will provide recommendations for revisions to the Zoning and Building Codes to effectively address sea level rise and flood vulnerability.

At the completion of the Risk assessment, the project team will deliver a set of Risk Assessment of vulnerability maps to be used in future planning efforts and in the development of a comprehensive Coastal Resilience Plan.

### 3.6 Project Partners

The Town of South Bethany has in place a working relationship with the volunteers from the SBPOA, and with the URS Corporation and Pennoni Associates. The partners are:

#### 3.6.1 The Town of South Bethany

The Town has been providing all the services required to operate a small town, since their incorporation in 1969. The Town has managed numerous grant programs, many of them significantly larger than the proposed Code Modifications and Risk Assessment Plan project. Melvin Cusick (see attached resume), the Town Manager, and James Hinks, the Town Code Enforcement Constable, have the expertise and experience required to provide the management and support necessary for the Code Modifications and Risk Assessment Plan Project. Dr. George Junkin (see attached resume), an SBPOA member and a Town Council Member, will lead the technical efforts as a volunteer. Dr. Junkin has voluntarily coordinated South Bethany Water Quality initiatives for seven years and Sea Level Rise Initiatives for three years.

The Town has worked closely with the URS Corporation this past year and will continue to be working with them to complete the DNREC Coastal Management Assistance Grant (Purchase Order –STATE 0000187963, 07/10/2013). The elevation survey of the centerlines of all roads, bulkheads and stormwater catch basins east of DE Rt. 1 has been completed by URS. The work will be finalized in public meetings that will occur in late spring.

### 3.6.2 The South Bethany Property Owners Association, Inc. (SBPOA)

SBPOA, a voluntary organization incorporated in the State of Delaware in 1999, has approximately 800 members and manages an annual budget of about \$ 20,000. The SBPOA supplies volunteers for both water quality and SLR & SS activities, as required. The SBPOA is led by its president, James Saftich.

### 3.6.3 Pennoni Associates

Pennoni, established in 1966, is a multidiscipline engineering and design consulting firm that provides personalized services and solutions to meet the needs of our diverse clients. Pennoni employs almost 1,000 professional, technical, and administrative personnel in 28 offices throughout, New Jersey, Pennsylvania, Delaware, New England, Maryland, Virginia, and New York. Pennoni provides services to local, state, and federal governments, private, commercial, industrial, and construction clients as well as to other professional firms. The multidisciplinary resources of Pennoni Associates enable them to mobilize the varied technical expertise required by waterfront, coastal, and marine communities to protect coastal lands and populations from erosion, inundation and storm impacts. Pennoni coastal professionals assist coastal communities in the planning and implementation of coastal projects that: assess flood risk and coastal vulnerability; provide flood protection and reduce flood risk; replenish beaches; restore and protect coastal shorelines; and protect ecosystem services (fisheries and wetlands).

### 3.6.4 University of Delaware Disaster Research Team (DRC)

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The DRC, located at the University of Delaware, has almost fifty years of experience and are widely recognized as one of the pioneering institutions in the area of disaster research. In particular, the members of the DRC are known for their insights into human behavioral and social scientific issues; for the development of new research methodologies; for their commitment to graduate and undergraduate research training; and for their portfolio of over six-hundred field studies in the aftermath of disasters, catastrophes, and community crises. DRC's faculty members are commonly called upon by local, national, and international governments as well as the news media for consultation and commentary on critical contemporary events and issues related to disasters and emergency management.

## **4.0 Tasks, Time Schedule, and Deliverables**

### 4.1 Project Scope Tasks

#### Task 1 Kickoff Meeting

A kickoff meeting will be held with the identified Project Team and stakeholders. The kickoff meeting will be used to: fine tune the project scope and timing; develop clear lines of communication within the project team; and identify the Code Modification Team members and Risk Assessment Mapping Team members

#### Task 2 Zoning and Building Code Review

The Code Modification Team will perform a detailed review of the Town's existing Zoning and building Codes. The team will identify: sections of the codes that are inconsistent with long term flood planning and resilience; and opportunities to improve the codes to provide long term flood planning and resilience.

#### Task 3 Compilation of Existing Map Data

The Risk Assessment Mapping Team will identify and compile existing maps that may be used to develop Risk Assessment or Vulnerability mapping. Sources of these maps may include but not be limited to: FEMA FIRM, Coastal Hazard mapping; DNREC Sea Level Rise Maps; NOAA Surge Maps; South Bethany Elevation Maps. The team will also develop critical facilities and infrastructure maps.

#### Task 4 Code Modification & Risk Assessment Teams Field Review

The entire Project Team will perform a field review of locations throughout the Town that are known to flood or areas identified through the review and compilation of existing flood maps that show the potential for flooding. The team will also review the types of building construction that are vulnerable to flood damage.

#### Task 5 Code Review Team Workshop #1

The Code Modification Team will hold a workshop to identify flood loss reduction deficiencies in the existing codes and collectively propose code improvements.

#### Task 6 Risk Assessment Team Workshop #1

The Risk Assessment Mapping Team will hold a workshop to identify the most appropriate risk assessment scenarios to be evaluated (e.g., 50 sea level rise, 100 year sea level rise, Category 1 hurricane surge heights, Category 1 hurricane surge heights + 50 year sea level rise, etc.).

#### Task 7 Development of Draft Code Revisions

Based on the results of Code Modification Workshop #1, members of the Code Modification Team will develop draft Zoning and Building Code revisions.

**Deliverable: draft Zoning and Building Code revisions**

Task 8 Development of Preliminary Risk/Vulnerability Assessment Maps

Based on the results of Risk Assessment Mapping Workshop #1, members of the Risk Assessment Mapping team will develop preliminary Risk Assessment Maps using the compiled mapping data.

**Deliverable: preliminary Risk Assessment Maps**

Task 9 Public Meeting

The entire Project team will hold a public meeting to present the proposed Zoning and Building Code revisions and preliminary Risk Assessments Maps to the residents of South Bethany. The Team will answer questions and solicit comments from Town residents.

Task 10 Code Review Team Workshop #2

The Code Modification team will discuss revisions to the Zoning and Building Codes as necessary to reflect comments made during the public meeting.

Task 11 Risk Assessment Team Workshop #2

The Risk Assessment Team will discuss revisions to the Risk Assessment Maps as necessary to reflect comments made during the public meeting.

Task 12 Finalize Code Revision Recommendations

Based on the results of Code Modification Workshop #2, members of the Code Modification Team will develop final Zoning and Building Code revisions.

**Deliverable: final Zoning and Building Code revisions**

Task 13 Finalize Risk/Vulnerability Assessment Maps

Based on the results of Risk Assessment Mapping Workshop #2, members of the Risk Assessment Mapping team will develop Final Risk Assessment Maps using the compiled mapping data.

**Deliverable: final Risk Assessment Maps**

Task 14 Submit Code recommendations and Risk Assessment Maps to Town



## 5.0 Project Budget

### 5.1 Budget Description

The budget summary for the proposed project is as follows:

Funds Requested:	\$ 9,250.00
Cash-Match Provided:	\$ \$1,435.00
<u>In-Kind Match Provided:</u>	<u>\$ \$8,422.90</u>
<b>Total Funding</b>	<b>\$ \$19,357.90</b>

The cost of the **Professional Planner, Certified Floodplain Manager, Engineer and Mapping** services will be contractual, and will be paid for through grant funding. These services will include:

- Development and manipulation of base maps, DNREC/FEMA/NOAA maps, critical facilities and infrastructure maps, LIDAR maps;
- Review of existing Zoning and Building Codes
- Draft and final Zoning and Building Code revisions;
- Preliminary and final Risk Assessment maps; and
- Participation in Community Outreach and Public meetings.

The cost of **Public Outreach** will be provided by the Town and the University of Delaware through a combination of “in-kind” match in staff and volunteer time, and Town funding of mailings, postage and advertisements. This will include written property notifications, flyers, newspaper advertisements and website postings.

The costs for **Financial Management and Reporting** will be covered by the Town through “in-kind” match in staff and volunteer time. This task will include tracking of monthly invoices, project budget management, and the preparation and submission of quarterly reports to the grant funding agency.

The cost of **Public Education** will be contributed by the Town and the University of Delaware through a combination of “in-kind” match in staff and volunteer time, and Town funding of flyers and presentation materials. This task will include a public meeting, the development and distribution of a “Sea Level Rise Educational Flyer,” response to public questions and a final presentation to stakeholders.

The Town of South Bethany and the South Bethany Property Owners Association (SBPOA) have been very successful in providing volunteers on several projects, such as the Route 1 Bio-Retention Initiative and the on-going Water Quality Committee, Water Quality Monitoring Program, Canal Clean-Up and the Adopt-A-Canal Program. Such endeavors reduce Town staff time, and provide educational value to the citizens of the community while performing an array of tasks related to the projects. Volunteer time is included with the “in-kind” services, in conformance with the criteria established in the RFP.

## 5.2 Itemized Budget

An itemized budget is attached (see next page).

## 5.3 Cost Effectiveness

The Town of South Bethany will leverage the grants funds through the use of University of Delaware and Town of South Bethany in-kind services, as well as cash contributions by the Town. This combination of funds and services will allow the Project team to effectively and cost efficiently provide detailed Risk Assessments Maps and Zoning and Building Code improvement recommendations.

Budget Item	Budget Cat.	Hours	\$/hr	Amount Requested	Cash Match	Source of Cash Match	Status of Cash Match	In-Kind Match	Source of In-Kind Match	Status of In-Kind Match	Total
Pennoni Associates-Principal	Contractural	12	\$170.00	\$2,040.00							\$2,040.00
Pennoni Associates-Engineer	Contractural	25	\$124.00	\$3,100.00							\$3,100.00
Pennoni Associates-Technician	Contractural	40	\$103.00	\$4,120.00							\$4,120.00
University of Delaware - Staff	Contractural	30	\$150.00	\$4,500.00				\$4,500.00	University Staff	Pledged	\$4,500.00
Travel	Contractural			\$240.00				\$0.00	Volunteer	Pledged	\$240.00
Risk Team Workshops	Personnel	16	\$22.34	\$357.44				\$357.44	SLR & SS Committee	Pledged	\$357.44
Code Team Workshops	Personnel	16	\$22.34	\$357.44				\$357.44	Code & Charter Committee	Pledged	\$357.44
Code Update	Personnel	30	\$22.34	\$670.20				\$670.20	Code & Charter Committee	Pledged	\$670.20
Code Update	Personnel	10	\$28.71	\$287.10				\$287.10	Code Inforcement Constible	Pledged	\$287.10
Project Management	Personnel	12	\$55.10	\$661.20				\$661.20	Town Migr.	Pledged	\$661.20
Financial Management	Personnel	8	\$31.32	\$250.56				\$250.56	Town Financial Admin	Pledged	\$250.56
Reporting	Personnel	24	\$22.34	\$536.16				\$536.16	Volunteer	Pledged	\$536.16
Public Outreach, mailings	Personnel	5	\$26.52	\$132.60				\$132.60	Town Clerk	Pledged	\$132.60
Public Outreach, mailings	Personnel	10	\$22.34	\$223.40				\$223.40	Volunteer	Pledged	\$223.40
Presentation to public	Personnel	20	\$22.34	\$446.80				\$446.80	Volunteer	Pledged	\$446.80
Print Flyers	Vendor			\$225.00	\$225.00	Town Budget	Pledged				\$225.00
Presentation Materials	Vendor			\$350.00	\$350.00	Town Budget	Pledged				\$350.00
Prop. Notification Postage	Vendor			\$660.00	\$660.00	Town Budget	Pledged				\$660.00
Prop. Notification News Paper	Vendor			\$200.00	\$200.00	Town Budget	Pledged				\$200.00
<b>TOTAL</b>		<b>258</b>		<b>\$9,500.00</b>	<b>\$1,435.00</b>			<b>\$8,422.90</b>			<b>\$19,357.90</b>

## 6.0 Past Performance

### 6.1 Town of South Bethany

The Town of South Bethany has administered the following federal and non-federal projects in the last 6 years:

Contract June, 2012 – South Bethany Landscaping Improvement Plan. This project encompassed three landscape areas: 1. Rain Gardens at the storm drains along east side of the pedestrian walkway on the west side of Route 1; 2. Landscape areas between the York Beach Mall parking area and the pedestrian walkway; and 3. Circle rain gardens within the Route 1 median at road cross over points. The project was funded by the Delaware Department of Transportation's Transportation Enhancement Program and the Town of South Bethany. This was a cooperative agreement between the two agencies. The cost of the project was \$ 50,000. The project and all supporting documentation were completed within the time frame specified in the agreement.

Contract January 2011 – Insulated Garage Doors. This project involved the purchase and installation of energy efficient insulated garage doors for the Public Works Department. It also included purchase and installation of energy efficient temperature controls for the Town Hall and Police Department and replacement weather stripping for both buildings. The project was funded through the United States Department of Energy-American Recovery Reinvestment Act (ARRA) and the Delaware Energy Office. The project was subject to Federal regulations, including the Davis-Bacon Act and the Buy American agreement. The cost of the project was \$9,571. The project and all supporting documentation were completed on time.

Contract April, 2008 – Flood Mitigation Project. This project involved the elevation of a residential structure at 202 Carlisle Drive that was prone to periodic flooding. The project was funded through the Federal Emergency Management Agency (FEMA) and Delaware Emergency Management Agency (DEMA) and the private homeowner. The Town applied for the assistance for the homeowner and was responsible for all administration of the project including managing the escrow account for the project on behalf of the homeowner. The cost of the project was \$22,861.98. The project and all supporting documentation were completed on time.

Contract March, 2007 –York Road Pedestrian Walkway Project. This project involved the construction of a pedestrian walkway along York Road in the Town of South Bethany. The project was funded through the Federal Highway Administration and the Delaware Department of Transportation - Transportation Enhancement Program and the Town of South Bethany. This was a cooperative agreement between the three agencies. The cost of the project was \$122,800. The project and all supporting documentation were completed within the time frame specified in the agreement.

### 6.2 Pennoni Associates

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Pennoni Associates has successfully performed a number of wastewater and surface water loan and planning grant projects administered by DNREC's Financial Assistance Branch and Water Infrastructure Advisory Council and funded by the State Clean Water State Revolving Fund.

Most recently, Pennoni completed:

- the planning and design of Nutrient Removal improvements to Kent County's Regional Wastewater Treatment Facility in Frederica, Delaware - \$50,000 Matching Planning Grant, \$12,000,000 Clean Water State Revolving Fund loan;
- the planning and preliminary design of a septic system elimination on north little Creek Road for the Kent County department of Public Works - \$50,000 Matching Planning Grant.

## **Resume for Melvin Cusick**

### Education

- BS Business Administration in 1978 from Salisbury University

### Professional Experience

- 1979-1989-Supervisor, Maryland Department of Agriculture, Resource Conservation. Mosquito Control Division. This work involved the management of state county and city programs and cooperative agreements with the Maryland Department of Natural Resources with work on wetland projects.
- 1989-2004-Director, Somerset County Roads and Waterways Division. Responsible for County DPW and Transportation, maintenance and construction projects including roads, bridges, marinas, boat ramps, dredging of harbors and rivers, etc.
- 2001-2003-Building Manager, Guerrieri University Center (Part Time). Responsible for the management of Guerrieri University Center on the campus of Salisbury University.
- 2004-Present-Town Manager, Town of South Bethany. Responsible for operation of Town including Maintenance, Beach Patrol, Building Inspection, Oversight of Town roads and canal network, etc.

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## **Resume for George Junkin, II, PhD**

### Education

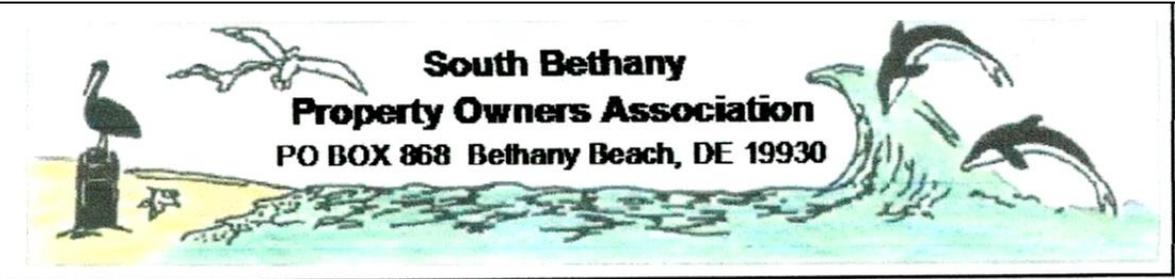
- BS Engineering Mechanics in 1966 from Virginia Polytechnic & State University
- MS Engineering Mechanics in 1967 from Virginia Polytechnic & State University
- PhD Engineering Mechanics in 1969 from Virginia Polytechnic & State University

### Professional Experience

- Joined Northrop Grumman, Oceanic & Naval Systems, in 1969
- Started as a Senior Engineer and progressed through Supervisory Engineer, Section Manager, Engineering Program Manager, Advisory Engineer and retired as Chief Scientist
- Managed Internal Research and Development Projects in the tens of millions of dollars
- Managed the engineering content of projects in the tens of million dollars
- Retired to South Bethany in 2005

### South Bethany History and Volunteer Experience

- Vacated in South Bethany since 1952 when father procured property and built a beach cottage.
- Upgraded the beach cottage to a full time residence in 2001
- Member of the South Bethany Property Owners Association since 2001
- Past volunteer on SBPOA Executive Board
- Retired to live full time in South Bethany in 2005
- Founding member of the South Bethany Water Quality Committee in 2007
- Elected as Town Council member to The South Bethany Town Council in 2010
- Appointed as Chairperson of the South Bethany Water Quality Committee in 2010
- Appointed lead person on Sea Level Rise (SLR) for the Town of South Bethany in 2012
- Have been regularly attending SLR Committee Meeting



February 5, 2014

Kathy Jankowski, Mayor  
Town of South Bethany  
402 Evergreen Road  
South Bethany, DE 19930

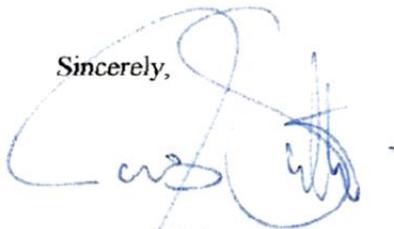
Dear Kathy,

The South Bethany Property Owners Association (SBPOA) looks forward to partnering with the Town of South Bethany in support of the Town's grant proposal prepared in response to the RFP issued by the Delaware Costal Program (DCP) of the Department of Natural Resources and Environmental Control (DNREC) for Coastal Management Assistance Grants.

SBPOA members were made keenly aware of the implications that could come from Sea Level Rise (SLR) by the flood destruction caused by Hurricane Sandy last year. Many homes had 2 feet of water in their ground level floor and garages due to the bay water rising to a height of 5.44 feet NGVD in the South Bethany Canals. As you know, SBPOA member Lloyd Hughes was instrumental in getting the tide gage installed in the South Bethany canals in 1999. Historical data from that gage shows that if the sea level were to rise 2.6 feet South Bethany would flood similar to the flooding caused by Sandy on average two times per year.

Members of the SBPOA are committed to volunteer their time to support the grant effort to develop *Sea Level Rise Vulnerability Assessments and Adaptation Plans*.

Sincerely,



James Saftich  
President SBPOA, Inc.



February 4, 2014

Mayor Kathy Jankowski  
Town of South Bethany  
402 Evergreen Road  
South Bethany, DE 19930

Subject: Coastal Management Assistance Proposal

Dear Mayor Jankowski,

The Delaware Environmental Institute (DENIN) at the University of Delaware supports your efforts to develop a sea level rise vulnerability assessment and adaptation plan, and your collaboration with Pennoni Associates to apply for funding to DNREC/Delaware Coastal Program's Coastal Management Assistance Grants.

Toward that end, DENIN would be pleased to assist in identifying members of an external science and engineering advisory board, to meet twice during the grant period. This volunteer board will be selected based on your needs, and will be able to provide perspectives and insights on the plan, including perspectives from both natural and physical science and engineering, as well as social sciences.

Moreover, we have many students in an array of fields who are interested in how we can assess vulnerability to sea level rise, and plan for sustainable, socially acceptable adaptations. The opportunity for these students to participate as observers in advisory board meetings would be extremely valuable.

Please keep me apprised of the progress of this important proposal.

Sincerely,

A handwritten signature in black ink that reads "Jeanette L. Miller".

Jeanette L. Miller  
Associate Director

221 Academy Street  
Suite 250  
Newark, DE 19711  
Ph: 302/831-4335  
Fax: 302/831-6840

Sincerely,

A handwritten signature in black ink that reads "Donald L. Sparks".