Town of Dewey Beach
www.townofdeweybeach.com
105 Rodney Avenue
Dewey Beach, DE 19971
P: (302)227-6363

RESOLUTION NO.

A RESOLUTION APPROVING THE USE OF INFRASTRUCTURE FUNDS IN THE AMOUNT OF $75,000 FOR THE PREPARATION OF A RESILIENCY PLAN BY GMB ENGINEERING

WHEREAS, the Town Council recognizes the importance of planning for long-term resilience and sustainability in order to protect public infrastructure, natural resources, and the health, safety, and welfare of residents and visitors; and

WHEREAS, the development of a Resiliency Plan will assist the Town in identifying vulnerabilities, prioritizing infrastructure improvements, and establishing strategies to address coastal, environmental, and climate-related challenges; and

WHEREAS, a Resiliency Plan may enhance the Town's ability to secure future state and federal grant funding opportunities, improve the Town's Community Rating System (CRS) classification, and serve as a valuable resource in the upcoming Comprehensive Plan update; and

WHEREAS, the Resiliency and Sustainability Committee, at its meeting on March 4, 2026, voted to recommend that the Town Council proceed with the Resiliency Plan project; and

WHEREAS, the Infrastructure Committee, at its meeting on April 2, 2026, voted to recommend that the Town Council approve the use of infrastructure funds for this project; and

WHEREAS, the Town Council finds it to be in the best interest of the Town to authorize the expenditure of infrastructure funds for this purpose.

NOW THEREFORE, BE IT RESOLVED by the Mayor and Town Council of Dewey Beach Delaware, hereby approves the use of infrastructure funds in the amount of Seventy-Five Thousand Dollars ($75,000) for the preparation of a resiliency plan by GMB Engineering. Furthermore, the Town Manager is authorized to execute an agreement with GMB Engineering to carry out the intent of this resolution.

Approved by majority vote of the Dewey Beach Town Council on May 15, 2026.

_____
Mayor, William Stevens

_____
Town Manager, Bill Zolper

GMB
GEORGE, MILES & BUHR, LLC

ARCHITECTS
ENGINEERS

206 WEST MAIN STREET
SALISBURY, MD 21801
PH: 410.742.3115
PH: 800.789.4462
salisbury@gmbnet.com

SALISBURY
BALTIMORE
SEAFORD
LEWES
OCEAN VIEW

www.gmbnet.com

June 5, 2025

Attn: Kelly Baxter
Dewey Beach Climate Change Committee

Re: Preliminary Questions for Consultants Regarding an Initial Study and Report Assessing Dewey Beach's Climate Change Resiliency Needs

Dear Ms. Kelly Baxter,

I am pleased to provide you with the responses to the preliminary questions requested regarding the initial study and report assessing the Town of Dewey Beach's climate change resiliency needs.

GMB and I have recently had the opportunity of working with the Town of Dewey Beach on its new Town Hall project. This project addresses coastal resiliency efforts by increasing the elevation of the building to provide an amplified level of mitigation and resiliency with minimal fiscal investment in building costs. I am proud to have assisted the Town with this coastal resiliency effort, and I look forward to working with the Dewey Beach Climate Change Committee and further assisting the Town of Dewey Beach with mitigating the damaging effects of climate change from increased flooding caused by more intense rainfall events and sea level rise.

Should you select GMB to assist with the Town's climate change resiliency needs, you will be joining the several other communities on the Delmarva Peninsula that have trusted myself, GMB, and our team to inform and guide them through similar endeavors with great success.

Included on the following pages are the responses to the questions requested along with an overview of our firm, the resumes of the staff members who will be involved, and relevant project experience. Please do not hesitate to contact me if you have any further questions. Thank you for this opportunity.

Sincerely,

Brent R. Jett, P.E., CFM, CC-P

GMB
GEORGE, MILES & BUHR, LLC

Question 1: Have you worked with other coastal municipalities conducting studies and/or performing work with regard to climate change resiliency? Which municipalities have you worked with and when?

GMB's coastal resiliency team has worked with several coastal municipalities performing work regarding climate change resiliency. Our work with these municipalities includes:

- The Cedar Street Flood Mitigation study for the City of Lewes, Delaware. This has led to a FEMA BRIC FMA grant for the design of berms with floodgates. The study was performed around the time of the COVID pandemic, and given those circumstances, we crafted an online reporting strategy for residents to submit flooding photos and experiences without having to leave their homes. The study was completed in 2021.
    - Please visit this website for further information: https://www.ci.lewes.de.us/301/West-Cedar-St-Flood-Mitigation-Planning-
- Various consulting with the City of Lewes, Delaware which has led to their implementation of the Resiliency Fund, additional freeboard, lowered lot coverage standards, beachside stormwater study, and a wetlands ordinance for the city. This began in 2020 and is on-going.
- A flood study for the Town of St. Michaels, Maryland investigating the flood hazards and mitigation strategies on public lands around the harbor. The town has used this report to leverage various funding opportunities for five or six additional projects nearing implementation. Also, many of the Town's immediate and short-term goals have been achieved. This report is listed on the Town's website under their Climate Change/Sea Level Rise Committee subpage: https://www.stmichaelsmd.gov/climate-change-sea-level-rise-commission/page/harbor-and-stormwater-infrastructure-study. Completed in 2021.
- A flood study for the Town of South Bethany, which has encouraged Edie Dondero (the current mayor) to form a group with various coastal communities that has led to two or three other projects to be successfully funded. The Town recently kicked off their resiliency project with UDel's IPA group, which is utilizing the report provided by GMB for the discussions and approaches to resiliency. Completed in 2023.
    - Please visit this website for further information: https://southbethany.delaware.gov/files/2023/07/FINAL-Report-South-Bethany-MARCH-2023-BRJ-rev.pdf

GMB
GEORGE, MILES & BUHR, LLC

- The Town of Oxford 2100 Visioning Plan: What will a Town that has existed since the 1600's look like in the year 2100 with 4+ feet of sea level rise? This report looks at various strategies and approaches to ensure the Town has a plan to address more flooding and higher water levels. Completed in 2023.
    - Please visit this website for further information: https://oxfordmd.net/oxford-2100/
- The Town of Oxford Flood Remediation Project. GMB has completed three phases of flood mitigation studies for the Town of Oxford. The most recent study was completed in the fall of 2024 while advising for the installation of two stormwater pump stations.
    - Please visit this website for further information: https://oxfordmd.net/wp-content/uploads/2024/04/GMB-032624-presentation.pdf

In addition, I/GMB have consulted and worked on resiliency projects for several other municipalities in Delaware including the Town of Fenwick Island, City of Seaford, Town of Laurel, and the Town of Dewey Beach.

I/GMB has also worked with several other municipalities in Maryland including the Town of Chestertown, City of Cambridge, City of Crisfield, and the Town of Ocean City.

Question 2: What types of information would you need in order to conduct an initial study and report on Dewey Beach's climate change/resiliency needs?

The types of information we would need to conduct an initial study and report would include:

- Past studies
- The existing topography and shorelines can be pulled from the State database using Lidar information. This will serve the study/report well enough and save several thousand dollars in survey fees and time.
- Re-review of the FEMA flood maps (which shows the entire town in the floodplain.)
- Infrastructure information: stormwater network and other improvements.
- Past efforts to address sea level rise and mitigate localized flooding.

- Town's level of appetite for risk. Is it ok for a few flood days a year? One a month? Only during the "big one?" How far out do you want the plan to address; 20-years, 50-years, 2100?
- Is the Town willing to buy-in that sea level rise is real and it is a threat multiplier to the Town, its infrastructure, and resident's property?
- What level of sea level rise do you wish to address, the median sea level rise projection or a higher degree? What aspects would you like to address: solely public lands or all as-risk areas in Dewey Beach?

This discussion and review will form the approach to the investigation, facilitate discussions with stakeholders, and determine the final goal that the Town is seeking for mitigation.

Question 3: Can you briefly describe the process, including the sequence and steps you will take to research and complete a study as well as a final project report?

- Meet with stakeholders including elected officials, representatives of communities that are inundated frequently, and business owners that are adversely impacted when flooding hits. DNREC and DelDOT are not likely to participate, but we will reach out to them to determine additional information and their approaches for the future. I believe Danielle Swallow of Sea Grant would be a good person to include in the kick-off because she is a familiar face with years of experience.
- Send a survey prior to the kick-off asking the respondents how they have been affected by flooding in the past. This survey will provide insight into hot spot areas and the level of participation across the community. It can also, depending on the questioning, give a glimpse into the level of understanding of flooding and how coastal areas are impacted, as well as the current state of sea level rise and how it impacts our lives.
- Review state lidar topography to understand the low-lying areas; those that will be inundated first before other areas. The flood maps and the National Wetland Inventory will be reviewed. The National Wetland Inventory (which is not 100% accurate but gives an idea of potential areas that will qualify as wetlands) will be reviewed. This topographic and inundation information will be used to determine at-risk areas to do a deeper dive in the field and see what approaches and strategies will be successful in these areas.

- Convene with Dewey Beach stakeholders to discuss the findings, proposed approaches, hot spots, potential improvement strategies, pros and cons of various strategies (including costs), areas to address in the report (only public, all areas, the 5 most at-risk), and next meeting date to present a draft report. We have enough experience to provide the best options for various flooding locations and extents to guide the discussion without having extraneous investigations.
- Educate. This is an important step in the process. The more people that understand the aspects of flood mitigation the better. And education will remove ideas that aren't feasible on the ground to address the issues and problems on a local level. There is a fine line between positive flow and drainage to flooding and impounding water at the topography present along the shore in our area. GMB understands this relationship and how it is ever changing and how the future increase in sea levels will impact this relationship and functionality of drainage/flood mitigation.
- Compile the results, provide a draft report, and meet to discuss with the public. Once the final comments have been received, the final report can be formatted and finalized for the Town to use as a playbook and guide for a more resilient future for Dewey Beach.

Question 4: Using your experience with other municipalities as a guide, can you estimate the time requirements and the cost for completing an initial study?

Working with the community, reviewing all past data, and providing strategies to be investigated over the next several decades will take approximately 9 months and $75,000.

The timing provides ample opportunity to discuss options with the stakeholders, residents, and property owners. There will be time for multiple meetings and discussions to ensure that everyone involved has a solid understanding. There will be back-and-forth communication between GMB and the Town to keep things transparent and moving along.

The study will identify the most at-risk areas: the areas that will be inundated first and the areas that will allow for flooding further inland once breached or overtopped. A list/map of these areas with potential strategies will be included in the final report. Also, strategies, both on the code and procedural front and on the infrastructure front, will be laid out in a timeframe showing what can be

achieved within certain time periods. There will be immediate, short-term, mid-term, and long-term goals. Some of these may not be possible immediately but with the proper planning and time, they can be. The survey, meeting with the stakeholders, and our experience will inform these stages and be included in the final report.

We believe this is an important document to all parties. In our experience with the Town of St. Michaels, they leveraged our report into at least six additional grants for the Town to plan and implement the strategies identified as flooding risks. The initial report can be used as a guideline as well as an appendix for the grant applications. And, in all fairness, not all councils remain static over time. It has been seen and utilized by many town managers and town commissioners: all using the same playbook.

Question 5: If we selected your firm to do the work, will you be using the same staff members who previously did similar work with other municipalities?

Yes, we will utilize the same staff members who performed similar work with other municipalities. Both staff members Karley LeCompte and Keegan Marsh assisted in the past reports, putting together the exhibits to review the topography, inundation potentials, flood maps, and potential solutions. Along with Karley and Keegan, Vice President Steve Marsh, P.E. will oversee all reports. Mr. Marsh has extensive experience and has overseen the grading and wetlands creation/management for the Bayside Community. We will all be a part of this effort, working as a team and bringing continuity to the process.

Question 6: What sources of funding are you aware of for this type of project?

I am aware of the following sources of funding for this type of project:

- DNREC has the Resilient Communities Grant Program through NOAA. It is administered by Kristen Thornton at the Delaware Coastal Programs Group. They assisted the City of Lewes in 2012 and are currently assisting the Town of South Bethany in 2025, both of which I have participated as a member of the advisory group. This funding will provide $75,000 and the University of Delaware will help facilitate meetings.

- NFWF provides funding for resiliency studies. I have previously used their funding in the City of Cambridge and leveraged that funding for additional sources.
- Danielle Swallow with Delaware Sea Grant has access to several potential sources. We have utilized her depth of experience and knowledge to place the right grant application with the correct project in the City of Lewes.

Given the ever-changing landscape of federal funding currently, GMB is always checking what is available for funding projects such as this one for the Town of Dewey Beach. We had earmarked a handful of projects in Lewes to submit for FEMA BRIC or FMA (Flood Mitigation Assistance) prior to closure of the programs. Unfortunately, at this moment, the Notice Of Funding Opportunity (NOFO) is not anticipated to return for this or the next fiscal year. However, it is possible that it could return in the fall of 2026. I am in touch with Phillip Cane from DEMA on a weekly basis to see if there are other funding sources, or if Delaware will earmark additional funding for such projects that won't be funded now.

GMB
ARCHITECTS / ENGINEERS

FIRM OVERVIEW

George, Miles & Buhr, LLC (GMB) is a client-focused firm that provides comprehensive engineering, architectural, planning, and coastal resiliency services across the Mid-Atlantic region. Founded in 1960, GMB provides quality designs that enhance our communities and safeguard the environment. GMB is headquartered in Salisbury, Maryland with additional offices in Lewes, Seaford, and Ocean View, Delaware, as well as a Sparks, Maryland office serving the Baltimore area. Our team of over 100 professionals is dedicated to producing exceptional, cost-effective solutions for our clients.

COASTAL RESILIENCY:

GMB strives to be the leader in design and stewardship of sustainable communities in the Chesapeake Bay, Delaware, Maryland and Virginia coastal environments. We are committed to applying sustainable design principles to every GMB project aside from the mandate by design review agencies. We have several Leadership in Energy and Environmental Design (LEED) accredited professionals on staff, as well as a Certified Floodplain Manager (CFM) and a Certified Climate Change Professional (CC-P). GMB has served multiple clients in identifying and addressing their vulnerable infrastructure and community assets. **GMB promises to maximize the co-benefits of every dollar committed to projects, whether local or grant funded.**

Accepting the DE Governor's Conservation Award

GMB is proud of our expert reputation in the design of coastal resiliency, flood mitigation solutions, budget and maintenance friendly solutions, and producing designs that can be funded by various sources. We understand the difficulties of achieving appropriate storm surge protection and stormwater management/conveyance in low-lying, tidally influenced municipalities in the Mid-Atlantic Coastal Plain. It is our specialty to minimize and remedy localized flooding from storm events during high tides.

Elimination of "duckwalk" to solve flooding issues on Water Street, Cambridge, MD

GMB has designed projects that incorporate surge flooding solutions with both green and grey infrastructure. We believe that the key to success for all parties is to provide proper installation at the proper location for the client's needs, and the long-term lifespan of the solution. GMB has designed and installed living shoreline stabilization, structural shoreline protection, step pool conveyance systems, urban stormwater conveyance systems, and wetlands. We have also developed environmental site designs and low impact development (LID) practices for a more integrated and sustainable approach. In addition, we have created stormwater pump stations to enhance habitats and local floodplains.

Town Hall Bioretention, Betterton, MD

In our analysis, we consider multiple factors, including the goals of the client, the ability to maintain the green techniques, the ability to contribute financially, and the possibility of grant funding. Our knowledge and experience help us guide the project to success for all parties. At GMB, we believe that no project is too small when improving the quality of life and our waterways on the Delmarva Peninsula.

Wetland Restoration Bayside, Selbyville, DE

GMB
ARCHITECTS / ENGINEERS

SERVICES PROVIDED

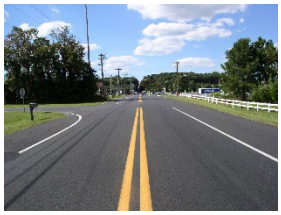
In addition to our Coastal Resiliency expertise, GMB serves as Town/City Engineers for many local municipalities; offering code review and compliance checks as well as review for engineering submissions to ensure engineering guidelines and requirements are met. GMB provides:

- **Consultation:** Capital Improvement Planning Assistance, State and Federal Loan/Grant Application and Administration Assistance, Proposed Land Development Preliminary, Final and Construction Phase Review, Trusted Advisor Relationships, Permit Acquisition Assistance, Asset Management Plans, Utility Rate Structures, Long Term Reserve Studies, Feasibility Studies, GIS Mapping, Preparation of Cost Estimates, Hydraulic Studies, Bid Assistance, and On-call Consultation
- **Civil / Municipal Services:** Site Design, Site Grading, Stormwater Management, Streetscapes, Pavement Design, ADA Compliant Sidewalks and Street Designs, Water & Sewer Extensions, Sustainable "Green" Design, Landscape Architecture
- **Water / Wastewater Services:** Wastewater Treatment Facilities & Improvements, Sewage Collection Systems, Sewage Pumping Stations, Water Treatment Facilities & Upgrades, Wells, Water Distribution & Storage, Operational Services
- **Building Services (Architectural & Structural):** Architectural Design, Programming and Concept Design, Renovations, Structural Engineering, Marine / Waterfront Engineering, Bridge Design, LEED Buildings, Building Revitalization Services
- **Contract Administration / Construction Inspection Services:** Site observation, contract preparation, resident project representative services (RPR), requisition review, change order evaluation, punch list and final inspection, closeout documentation.

Our innovative solutions, our adaptability to change, our commitment to design within budget and time restraints, and our ability to communicate project specifics to various stakeholders have produced many outstanding projects.

We are proud to have been awarded a ***2023 Engineering Excellence Conceptor Award*** from the American Council of Engineering Companies of Delaware (ACEC-DE) for our Pilottown Road Water Main & Lead Service Replacement project in Lewes, DE, as well as a ***2023 Engineering Excellence Honor Award*** from ACEC-MD for our ENR Upgrade of the Hampstead Wastewater Treatment Plant in Carroll County, MD. These awards join numerous other honors we have received in over six decades in business.

CONSULTING



CIVIL / MUNICIPAL

WATER / WASTEWATER

STRUCTURAL / MARINE

LAND DEVELOPMENT

CONSTRUCTION SERVICES

SITE / SUSTAINABLE

AEROSPACE SUPPORT

ARCHITECTURE

FLOOD MITIGATION PLANNING STUDY
WEST CEDAR STREET

Lewes, Delaware

GMB assisted the City of Lewes and the Lewes Board of Public Works in producing a flood risk-reduction study related to recurring tidal flooding at the west end of Cedar Street. This project is being funded through a Pre-Disaster Mitigation Grant provided by FEMA and administered by DEMA.

The goal of the West Cedar Street Flood Mitigation Planning Study is to identify environmental/structural stabilization and flood protection projects for future implementation. These projects are necessary since previously installed berms and tide-limiting pipe systems have deteriorated and failed over time. The purpose of the proposed projects will be to protect the West Cedar Street residences and institutions (especially the Children's Beach House) from existing flood conditions and flood conditions expected from future climate-change and sea-level rise scenarios. The Study will enable the City of Lewes Mitigation Planning Team to maintain focus on environmental/structural "brick & mortar" projects to improve the City's resiliency to existing and future flood risks.

GMB's role includes the following:

- **Data collection**: including obtaining both qualitative and quantitative information from residents, businesses, and institutions affected by the recurring.
- **Determine the level of vulnerability of the flood-prone study area** in terms of present-day tidal and storm surge effects, including a statistical representation of the chances of flooding - and the study area's vulnerability based on projected sea-level rise scenarios.
- **Evaluation of flood mitigation structure alternatives** that would allow normal tides to infiltrate the nearby tidal marsh lands but eliminate storm, and other tidal events, from reaching flood-prone areas. The study also includes an analysis of the effects any alternative might have on adjacent properties.

The final Study report was accepted by Mayor and Council as well as the Board of Public Works. It was presented to the Mitigation Planning Team, Lewes Board of Public Works, DEMA and FEMA, and local stakeholders in various public sessions.

The recommendations of an earthen berm with self-regulating tide gates along the canal-side of the focus area was submitted to the FEMA HMGP and was successful in receiving funding for final design and permitting this year. Designs to protect the over 100 residential properties from high tide flooding will be completed and utilized for implementation funding from FEMA in future rounds. The anticipated BCA for this project is well above 5.0 while protecting the City's infrastructure on the beachside for decades into the future along with the private property of the residents living and enjoying Lewes.

CLIENT
City of Lewes
114 E. 3rd Street
P.O. Box 227
Lewes, DE 19958

SERVICES
Planning Study

COMPLETION DATE
March 2022

CONTACT
Ellen Lorraine McCabe
City Manager
302.645.7777

CURRENTLY:
Design Phase utilizing BRIC funding

TOWN OF OXFORD COASTAL RESILIENCY PROJECTS

Oxford, Maryland

CLIENT

Town of Oxford
PO Box 339
Oxford, MD 21654

SERVICES

Flood Study
Grant Applications:
- NFWF and University of MD Environmental Finance Center

Shoreline Inventory
Stormwater Master Plan
Coastal Resiliency Planning

COMPLETION DATE

Flood Study: 2012/2024

Stormwater Inventory & Master Plan: 2016

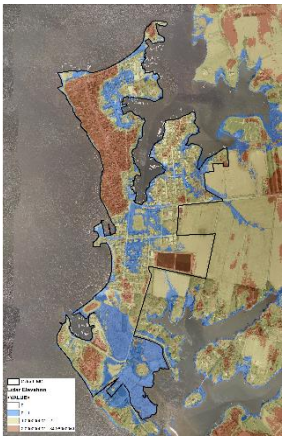
2100 Visioning Report: 2023

CONTACT

Matt Ozman, Public Works
410-924-4078

FLOOD STUDY

Oxford, Maryland is a coastal community of the Chesapeake Bay, surrounded by the waters of the Tred Avon River and its tributaries. In 2012, at the request of the Town of Oxford, the Chesapeake Bay Foundation, and the Environmental Finance Center, GMB assisted in a public meeting at the Town of Oxford to discuss existing flooding problems and begin a dialogue regarding long-term solutions. GMB evaluated LIDAR data with the help of the Eastern Shore Regional GIS Cooperative, and prepared sea level rise maps. A public discussion session on stormwater issues with a focus on the potential impact of sea level rise for dry and wet weather flooding was led by GMB.



STORMWATER INVENTORY & MASTER PLAN

In 2014, GMB developed a comprehensive inventory of stormwater and shoreline infrastructure coupled with a master plan of capital improvement projects to be implemented over the next 5 to 8 years to mitigate the impacts of flooding. The study was accomplished in two phases, 1) Stormwater Shoreline Infrastructure Inventory, and 2) Stormwater Shoreline Master Plan.

The Phase 1 Inventory was completed in 2015 and it included field survey and mapping of the Town's existing stormwater infrastructure. The Phase 2 Master Plan utilized the data collected under Phase 1 to generate computer models, which were then used to evaluate the system hydraulics and consider modifications to improve stormwater drainage and reduce flooding. The Master Plan study recommended specific solutions and provided cost estimates along with a prioritized schedule for implementation.

OXFORD 2100 VISIONING REPORT

In 2023, GMB was contracted along with Preservation Green, LLC, to produce a long-range 2100 Visioning Report. What will Oxford need to survive in 2100, and how do we get there from here? GMB reviewed student visioning designs, gathered information during public sessions, met with stakeholders and provided recommendations. Various project feasibility and strategies were developed in a 75year timeline prioritizing needs along that timeline. The final report demonstrates the visions and future Oxford with mitigation techniques along with a capital improvement plan prioritizing the infrastructure needs by cost and period of implementation, Current regulations and potential alterations of future construction roadblocks were outlined. The recommendations in the plan are not static and will be reviewed periodically to best suit the Town and lead it to a successful presence in 2100.

SOUTH BETHANY RESILIENCY IMPLEMENTATION PLAN

South Bethany Beach, Delaware

CLIENT
Town of South Bethany
402 Evergreen Rd.
South Bethany, DE 19930

SERVICES
Coastal Resiliency Planning

COMPLETION DATE
2023

CONTACT
Ms. Maureen Hartman
Town Manager
302-539-3653
townmanager@southbethany.org

In 2021, the Town of South Bethany contracted GMB to provide a Resiliency Implementation Plan, to help strategize resiliency efforts due to the effects of climate change, sea level rise, increased storm frequencies and intensities, and dense development within the Town. GMB reviewed current code, outlined several deficiencies (with our engineering expertise in coastal designs in mind), provided strategies to mitigate flooding in a coastal area surrounded by tidal waters and very vulnerable tidal fluctuations, and addressed next steps to remedy the current status that hampers the restoration efforts availed to the public and private to protect infrastructure and residences.

Components of the Plan included:

- Current Challenges
  - Bulkheads
  - Pervious/Impervious Allowances on Private Property
  - Pervious/Impervious within Public Rights-of-Way
  - Low Elevations on Town Roads
  - FEMA and Floodplain Enforcement
- Vulnerable Areas
- Goals
- Impractical Solutions
- Viable Approach to Resiliency
- Next Steps – Phased plans from present time until 2050

The inundation maps were reviewed to determine that limited options were available to the Town with the current code, state, and federal regulations, lay of the land, and constraints on budgets and capacities to move forward with large-scale alterations without disrupting the entire landscape of the Town. Bearing these limitations, some simple, low or zero-cost next steps were laid out that can allow for future assistance and mitigation techniques to make the greatest impact.

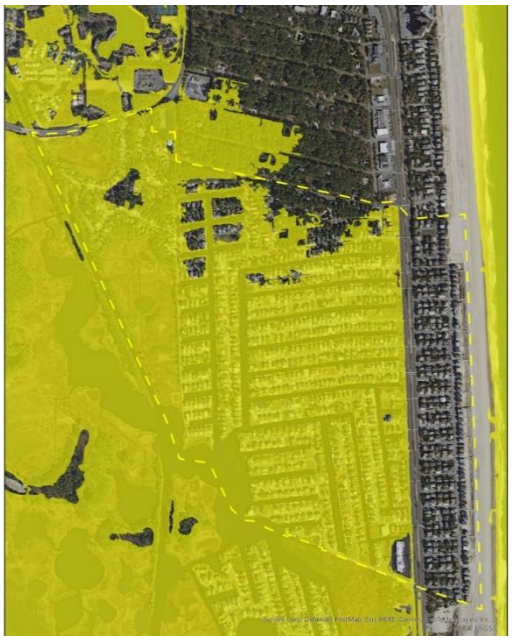


Exhibit Depicting the New MSL After Four Feet of Sea Level Rise

BRENT R. JETT, P.E., CFM, CC-P

Coastal Resiliency Group Leader

Mr. Jett joined the firm of GMB in 2019, bringing over 20 years of professional engineering experience, including extensive project design, planning and management in both the private and public sector. He is skilled in local, state, and federal land-use approvals and required processes for environmental approval. Prior to joining GMB, Mr. Jett served seven years as Assistant City Engineer for the City of Cambridge, Maryland. He has a distinguished background while working in areas with minimal elelvation change as well as along the coastal fronts along the many bodies of water present on Delmarva. This includes site design, infrastructure design, stormwater design, ADA compliance, resilient shoreline planning and design, green stormwater retrofits of existing grey infrastructure or impervous areas, and rehabilitation of eroded and deteriorated conveyance systems, just to mention a few. Mr. Jett's experience in public works affords him knowledge and understanding of key project success factors, including budgetary constraints, maintenance capacity, and public engagement.

Supplementing his Professional Engineer background, Mr. Jett is also a Certified Floodplain Manager (CFM) and a Certified Climate Change Professional (CC-P). Understanding changing rain intensities, sea level rise, longer periods of heat and drought, along with higher tidal surges allows Mr. Jett to clearly convey project needs to clients and stakeholders while keeping the constraints of public works budgets and capacities in mind. He provides projects that can be managed, maintained, and successful for years to come with proficiency.

Further, Mr. Jett is well versed in all facets of grant funding for public projects, having been successful with BRIC, HMPA, DNR, CBTrust, MDE, NFWF, G3, and various other state and federally backed grants; preparing the applications and managing the reporting and close out of said grants. He has recently served on several environmental committees with local and state stakeholders for sustainability concerns throughout the mid-Shore region of Maryland.

Relevant Project Experience Includes:

- **West Cedar Street Flood Mitigation Planning Study,** *Lewes, DE:* Assisted the City of Lewes and the Lewes Board of Public Works in producing a flood risk-reduction study related to recurring tidal flooding at the west end of Cedar Street. When the tide is high and it rains, localized flooding impacts the 80+ acre investigation area. The result of the study is the installation of an earthen berm with self-regulated tidal gates to allow for ebb and flow of tidal waters under normal levels, but automatic closure during higher tide surge events. This permits positive drainage from the residential areas in the inspection area during normal times, but protects the high value properties during storm events. When the tide subsides, the gates will open, and normal operations will return. *The report was completed January 2022. Project was successfully awarded a BRIC grant for design. Final plans are being prepared for final funding and construction.*
- **St. Michaels Harbor and Stormwater Infrastructure Flood Study,** *St. Michaels, MD:* Existing elevations, conditions, and potential for retrofits were analyzed resulting in 8 phased projects available around the harbor area to ensure flooding in St. Michaels does not go from nuisance to major problem for the residents, business operators, and the Town. Green techniques were heavily recommended in order to build resilience to the design and harbor area. *Final Report Completed January 2021.*
- **South Bethany Resiliency and Flooding Study,** *South Bethany, DE:* Currently investigating flood remediation strategies for the Town, both caused by tidal surges

RESPONSIBILITIES

Associate/
Project Manager/
Coastal Resiliency Group Leader

GROUP

Coastal Resiliency, Salisbury

EDUCATION

Virginia Tech, 1997
Bachelor of Science
Civil Engineering

REGISTRATION

Professional Engineer (P.E.)
Maryland #32889
Delaware #24213

Certified Floodplain Manager (CFM)
US-20-11646

Climate Change Professional (CC-P)
#M-0066

CONTACT INFORMATION

bjett@gmbnet.com
410.742.3115
301-628-1421
443-880-2719

and intense rainfall events. Approaches will be lowering the allotment of impervious area on individual lots, more open space when available, raised roadways to provide safe passage during flooding events, and increased measures for the flood ordinance. *Final Report presented October 2023*

- **Lewes Resilient Community Partnership,** *Lewes, DE***:** Served on the committee as a non-voting member as well as in and advisory role of the steering committee for the Partnership. Prior to this committee being formed, served in an advisory role on the wetlands committee and the sea level rise committee. Has been involved with professional engineering advice to Lewes since joining GMB.
- **Oxford Flood Mitigation Project,** *Oxford, MD***:** Awarded investigation and design of 2 hot spot areas that routinely flooded at high tide as well as during intense rainfall events. Determined the catch basins and discharge pipes for the stormwater infrastructure network were under the high tide elevation for the majority of the time. This caused hydrologic issues and thus the localized flooding until the tide could recede. Designed a stormwater pump station at each location, in-line with the existing network so it may function as a traditional drainage network or utilize the pumps when needed to draw down the flood waters in these areas. *Study and Plans completed December 2024.*
- **Oxford 2100 Visioning,** *Oxford, MD:* Completed a study of what Oxford, a coastal community near the Chesapeake Bay founding in 1683, could look like and function as with nearly 5 feet of sea level rise. What are the challenges and opportunities for thinking outside the box as we do toady, and still maintain the viability of living in Oxford in the year 2100. Various codes and regulations were challenged, money was not full considered, just the ability to continue to live in the community that has bene present for nearly 350 years. Pioneering ideas, some rebranding of old-techniques, and some true engineering innovation was the result. *Report completed and delivered to Town in January 2024.*
- **Chestertown Historic District Master Planning**, *Chestertown, Maryland* – Project involves visioning the Historic Downtown core district, while providing resilient improvements and lessening the impervious impacts while retaining the historic nature of the community. Several resiliency techniques were offered as solutions with one project moving forward with earmark funding to raise several town-owned assets along the Chester River around the Town marina to mitigate the impacts of sea level rise. *Final report delivered October 2024.*
- **Long Wharf Bulkhead Replacement,** *Cambridge, MD:* Provided new bulkhead designs for the main point of Long Wharf Park, with approximately 12-16' water depths. Submitted the permits, managed the grant funding, and provided construction inspection and management for the City during installation. Once the bulkhead was installed, the upland areas behind the top cap were improved. This included porous concrete sidewalks, stormwater infiltration basins, realignment of the parking spaces, and ADA compliance for the public areas. *Completed September 2017.*
- **Various Golf Course Remediation/Flood Mitigation projects,** been involved with several local golf courses in addressing sea level rise and providing mitigation techniques to ensure the saltwater doesn't flood the turfgrass and cause playability issues for their enterprise and members.

KARLEY N. LECOMPTE

Environmental Scientist

Karley LeCompte joined George, Miles & Buhr in early 2021 as a Sr. Technician specializing in geography and has served as an Environmental Scientist and Geospatial Analyst. She holds a Bachelor of Science from Salisbury University majoring in Earth Science and Geography. She also holds a Master of Science degree from East Carolina University with a Geography major. Karley is skilled with ArcGIS Pro, ArcGIS Desktop, CloudCompare, Pix4D, Autodesk programs including CAD, Infraworks, and Recap, Agisoft Metashape, HEC-RAS, and SketchUp. She is a certified sUAS Pilot with experience using Terrestrial Laser Scanners, Unmanned Aerial Vehicles, and GNSSrtk for drone services. In 2019, Karley was the recipient of NASA NC Space Grant to develop a real-time camera system to monitor overwash along the Carolina coastline.

Well-versed in technical writing, Karley's master's thesis entitled "Washover Fan Evolution, Assateague Island National Seashore, MD (2012-2019) was written on the change in characteristics of washover fans and rising sea levels. She understands environmental concerns, the changing morphology along the water's edge, and techniques to address these issues. Technical writing is one of her specialties as she has written grants to different agencies such as USGS and NASA NC Space Grant.

Relevant Project Experience Includes:

- **Living Shoreline Design**, *Laurel, Delaware* – Project involves nearly 2,000 linear feet of living shoreline design for an eroding water's edge along a public park in Laurel, DE. Providing flood resiliency and protection of the new walking path funded by DelDOT are the key metrics for the design.
- **Chestertown Historic District Master Planning**, *Chestertown, Maryland* – Project involves visioning the Historic Downtown core district, while providing resilient improvements and lessening the impervious impacts while retaining the historic nature of the community. The GIS base is serving as the background for all discussions and mapping.
- **West Cedar Ave. Flood Mitigation**, *Lewes, Delaware* – Project involves improving recurring tidal flooding issues at the west end of Cedar Avenue generally due to increasing tide events and the damaged berm/corrugated metal culvert pipe system, while maintaining the health of the wetlands between the berm and Cedar Avenue.
- **St. Michaels West Harbor Road/East Chew Avenue Flood Mitigation Feasibility Assessment and Conceptual Design**, *St. Michaels, Maryland* – Project involves GIS referencing existing conditions and stormwater analysis for future flood mitigation.
- **Oxford 2100 Visioning**, *Oxford, Maryland* – Provided future improvements, including implementation timelines and techniques, to ensure Oxford is resilient and thriving in the year 2100 in the face of 3 feet of sea level rise. Inundation mapping identified the hot spots and needs analysis for the team.
- **Tiger Branch Stream Rehabilitation,** *Millsboro, Delaware* – Provided area grading analysis and stormwater assessment for design of new channel to provide nutrient reduction and slowed flowrates to minimize erosive velocities.
- **Baer Property Sea Level Rise Analysis**, *Cambridge, Maryland* – Evaluated options to optimize protection from coastal storms and tidal surges for the short term (10-15 years) use of the existing house and property at 880 Hills Point Road in Cambridge, MD.
- **Parsons Cemetery Shoreline Evaluation**, *Salisbury, Maryland* – Project involves the evaluation of options to optimize protection from shoreline erosion for the short term (10-15 years) as well as options to reinforce the shoreline for the long term at Parsons Cemetery 912 N. Division St., Salisbury, MD.

RESPONSIBILITIES
Environmental Scientist
Geospatial Analyst

GROUP
Site / Sustainable Design & Coastal Resiliency
Salisbury

EDUCATION
East Carolina University
Master of Science in Geography
2021

Salisbury University
Bachelor of Science in Earth Science & Geography
2014

KEEGAN M. MARSH

Environmental Scientist

Keegan Marsh joined GMB in 2020 as a seasonal Intern and was hired full-time in 2021 as a Sr. Technician in the Site / Sustainable Design Group. She was promoted to Environmental Scientist in 2022. Prior to joining GMB, Ms. Marsh was an Intern at the Eastern Shore Regional GIS Cooperative (ESRGC), where she was responsible for collecting and analyzing data using ArcGIS to assess the vulnerability of coastal homes for flooding events on Maryland's Eastern Shore. While obtaining her master's degree in Environmental Science, Ms. Marsh studied advanced GIS, estuarine ecology, estuary and ocean dynamics, geomorphology, and hydro transport processes. Her software skills include ArcMap, ArcPro, Whitebox, QGIS, Grass, R, and Civil3D.

Relevant Project Experience Includes:

- **Janosik Park Living Shoreline Improvements,** *Laurel, DE*: Completed design of over 500l.f. of living shoreline design for the Town where erosion has compromised the shoreline, exposed 100 year-old tree roots, and adversely impacted the walking path in the public park. The new shoreline will provide habitat, erosion protection, and mitigate flooding impacts at a higher elevation with increased berming at the landward side. The plans have been submitted for grant funding for implementation and should be secured soon to construct the shoreline.
- **Ocean City Northside Park Kayak Launch and Living Shoreline Improvements,** *Ocean City, MD*: Awarded design and permitting of living shoreline improvements at the Northside Park Kayak launch area where the shoreline is constantly battered with heavy wind driven fetch and previous attempts of soft shoreline stabilization have failed. Approximately 150l.f. of living shoreline will be secured with a combination of stone breakwater and elevated sand-filled living shoreline to protect the uplands and soon to be installed public kayak launch facility.
- **Garden of Eapen**, *Bel Air, MD,* – Assisted with the development of a Concept Stormwater Management (SWM) Plan and Report, a Preliminary Plan, a Forest Conservation Plan and Report, and a Landscaping Plan for a proposed 22-lot residential development to be named "Garden of Eapen" in Bel Air, Maryland.
- **Cobb Property Due Diligence**, *Selbyville, DE* – Assisted Beazer Homes with due diligence for the Cobb property in Sussex County, DE. Scope of work includes developing an existing conditions base plan, perform a preliminary hydrologic and hydraulic (H&H) analysis, perform a preliminary topsoil/fill analysis and prepare a project rendering.
- **Tuxents Branch Stormwater Management Culvert Upgrades Phase 1**, *Fruitland, MD* – Assisted the City of Fruitland with the design of upgrades to two (2) major culverts along Covered Bridge and Camden Avenue in order to handle larger storm events and minimize existing flood concerns. Also assisting with stream restoration projects along the Tuxents Branch drainage area to improve water quality and enhance the natural treatment areas of this drainage branch.
- **Harford County Airport Wetland Mitigation Revisions**, *Harford County, MD* – Assisting Harford County Airport with a report in accordance with the Maryland Dept. of the Environment (MDE) Monitoring Protocol for Wetland Mitigation Projects and the US Army Corps of Engineers Compensatory Mitigation Special Conditions included with the issued Authorization for Unavoidable Impacts to Waters of the US.

RESPONSIBILITIES
Environmental Scientist

GROUP
Site / Sustainable Design & Coastal Resiliency

EDUCATION
University of Virginia
Master of Arts in Environmental Science
2021

Columbia University
Bachelor of Arts in Sustainable Development
2019

STEPHEN L. MARSH, P.E., LEED® AP, CPSWQ

Principal-in-Charge

Steve Marsh joined the firm of George, Miles & Buhr in August of 1994. He has served as a Project Engineer and Project Manager on a variety of projects including studies, design and contract administration. Engineering projects include storm sewer and stormwater management studies and design, sanitary sewer systems and wastewater treatment. Hydraulic and hydrologic modeling capabilities include TR-55, TR-20, HEC-RAS, HydroCAD and StormCAD, among others. In 2008 Mr. Marsh acquired his LEED® AP certification, which provides a thorough understanding of green building practices and principles. In 2013, he became a **Certified Professional in Storm Water Quality (CPSWQ)**. As a CPSWQ, he is recognized by his peers as a specialist in computing, analyzing, and evaluating storm water quality.

Mr. Marsh is a frequent guest lecturer at both Salisbury University and Morgan State University where he lectures about water quality in the Chesapeake Bay.

Relevant Project Experience Includes:

- **SWM Best Management Practices (BMP) Feasibility Study**, *Ocean City, MD.* The primary focus of the study was to provide the Town of Ocean City with cost-effective BMP retrofit recommendations aimed at reducing primary pollutants such as trash, nutrients, metals, sediment and oils from entering the Town's receiving waters through existing storm drain networks.
- **Betterton Stormwater Management Retrofit,** *Betterton, MD:* Main Street Outfall Phase 1 - Includes a bio-retention area in front of Betterton Town Hall, a stormwater step pool conveyance and a parking lot of permeable pavers that will serve as the cover for an engineered subsurface reservoir with recharge or infiltration beds for the surrounding urban watershed. This project focuses on the sub-watershed that impacts Betterton's public beach and will treat runoff from 13 acres. This project is being funded by a grant from the National Fish and Wildlife Foundation.
- **Oxford Flood Study,** *Oxford, Maryland:* Part of a team to address flooding problems within the Town. GMB evaluated LiDAR data with the help of the Eastern Shore Regional GIS Cooperative, and prepared sea level rise maps. GMB presented a discussion on stormwater issues with a focus on the potential impact of sea level rise for dry and wet weather flooding. GMB assisted the Environmental Finance Center with the final report, which evaluated drainage and flood control project alternatives, with special consideration to potential sea level rise, and prepared cost estimates. Assisted with grant applications to NFWF and the University of Maryland Environmental Finance Center.
- **UMES Hazard Mitigation Plan,** *Princess Anne, Maryland*. Evaluated the likelihood of threat to the University from hazards and devised an action plan to reduce the impact of those threats. A significant portion of the consulting effort was a HEC-RAS analysis to evaluate the limits of flooding during severe rainfall events. Proposed revisions to the BFE and FIRM maps were presented. LiDAR data was used in conjunction with the HAZUS model and HEC-RAS results to map flood depths.
- **Washington Street Flood Control & Stormwater Management Retrofits**, *Seaford, Delaware:* Project Manager for a new storm drain system consisting of approximately 3,549 LF of new stormwater piping ranging in sizes from 15" to 36". In conjunction with the new stormwater piping system, GMB designed several "green infrastructure" improvements to improve the water quality in stormwater runoff to the Nanticoke River.

RESPONSIBILITIES

Sr. Vice President
Director of Operations – East Region

GROUP

Site / Sustainable Design, Salisbury

EDUCATION

University of Virginia, 1992
Bachelor of Science
Civil Engineering

University of Virginia, 1996
Master of Science
Civil Engineering
Concentration in Hydrology/ Stormwater Management

Virginia Tech
Post Graduate Course Work – Analysis of Water Resources Systems

REGISTRATION

Professional Engineer
MD-22749. DE-11490.
VA-032841

Certified Professional in Stormwater Quality, 2012

LEED® AP Certification, 2008