**Public Hearing 6:55:** Ordinance O-23-24, an ordinance of the Town Council of Chesapeake Beach, Maryland, to amend the language of the zoning code restricting onsite cannabis consumption establishments.

# Presenting Barbara "Jo" Finch Brightest Beacon on the Bay Awards

**TOWN COUNCIL MEETING**
**AGENDA**
**DECEMBER 21, 2023**

**I.** Call to order and roll call

**II.** Pledge of Allegiance

**III.** Approval of the agenda

**IV.** Public Comment on any item on the agenda

**V.** Approval of the minutes of the November 16, 2023, Town Council Meeting

**VI.** Approval of the minutes of the December 12, 2023, Informational Work Session

**VII.** **Special Presentation –**

Lisa Garrett – Birdwatching Group utilizing the new pocket park at 29th Street and Bayfront.

**VIII.** **Petitions and Communications**

A. Town Administrator's Report

B. Town Treasurer's Report

C. Town Engineer's Report

D. Calvert County Sheriff's Office Twin Beaches Deputy's Report

E. North Beach Volunteer Fire Department

F. Mayor's Report

## IX. Resolutions & Ordinances

A. Vote on Ordinance O-23-24, an ordinance of the Town Council of Chesapeake Beach, Maryland, to amend the language of the zoning code restricting onsite cannabis consumption establishments.

B. Introduce Ordinance O-23-25, an ordinance of the Town Council of Chesapeake Beach, Maryland, naming and designating three public parks "Bucs Corner", "Shisler Park", "Old Campgrounds Park" and to establish "Favret Way". **Set Public Hearing.**

C. Introduce Charter Amendment Resolution CAR-23-1, a resolution of the Town Council of Chesapeake Beach, Maryland, amending section C-311 "Referendum" of the Town Charter. **Set Public Hearing.**

D. Vote on Resolution R-23-4, a resolution of the Town Council adopting the Town of Chesapeake Beach Coastal Resiliency Plan.

## X. Report of Officers, Boards and Committees

A. Planning & Zoning Commission

B. Board of Appeals - Continuation hearing on Case#2023-03 Rod-n-Reel Inc/Donovan Estates, LLC is scheduled for January 4, 2024.

C. Chesapeake Beach Oyster Cultivation Society

D. Climate Change Advisory Group

E. Economic Development Committee

F. Green Team

G. Kellam's Revitalization Committee

H. Twin Beaches Opioid Abuse Awareness Coalition

I. Walkable Community Advisory Group

## XI. Unfinished Business

## XII. New Business

1. The Town Council to consider confirming Wayne Newton (Town Engineer), Jay Berry (Public Works Administrator) and Kathleen Berault (Town Resident and Chair of the Planning and Zoning Commission) to officially form the Town of Chesapeake Beach Board of Port Wardens. Forming the Board of Port Wardens establishes the Town's regulatory authority of the Town's waterways as defined in the Town code.

2. The Town Council to consider confirming the Mayor's appointment of Holly Wahl (Town Administrator) to also serve in the capacity of the Town's Zoning Administrator per the Town Code.

3. The Town Council to consider authorizing the Town Administrator to expend funds not to exceed $35,000 for the purchase and installation of two seals on the press feed pumps at the Chesapeake Beach Water Reclamation Treatment Plant (CBWRTP) from the FY24 CBWRTP Capital Improvement line item.

## XIII. Public Comment

## XIV. Council Lightning Round

## XV. Adjournment

# MINUTES OF THE TOWN COUNCIL MEETING NOVEMBER 16, 2023

**I.** L. Charles Fink, Council Vice-President, called the meeting to order at 7:00 p.m. In attendance were Dr. Valerie Beaudin, Lawrence P, Jaworski, Gregory J. Morris, and Keith L. Pardieck, Council Members, Holly K. Wahl, Town Administrator, Sharon L. Humm, Town Clerk, Brittany Moran, Town Treasurer, James Berry, Public Works Manager, Josh Stinnett, WRTP Manager, Wayne Newton, Town Engineer, and Lieutenant Hollinger. Absent was Patrick J. Mahoney, Mayor and Margaret P. Hartman, Council member.

**II.** **Pledge of Allegiance**. Vice-Chair Fink led the Pledge of Allegiance.

**III.** **Approve the Agenda.**

**MOTION:** Councilman Jaworski moved to approve the November 16, 2023 Town meeting agenda. Seconded by Councilwoman Beaudin, all in favor.

**IV.** **Public comment on any item on the agenda.** None received.

**V.** **Approval of the minutes of the October 19, 2023 Public Hearing.**

**MOTION:** Councilwoman Beaudin moved to approve the minutes of the October 19, 2023 Public Hearing. Seconded by Councilman Morris, all in favor.

**Approval of the minutes of the October 19, 2023 Town Council Meeting.**

**MOTION:** Councilman Jaworski moved to approve the minutes of the October 19, 2023 Town Council Meeting. Seconded by Councilman Pardieck, all in favor.

**Approval of the minutes of the October 27, 2023 Special Town Meeting.**

**MOTION:** Councilwoman Beaudin moved to approve the minutes of the October 27, 2023 Special Town Meeting. Seconded by Councilman Pardieck, all in favor.

**Approval of the minutes of the November 7, 2023 Informational Work Session.**

**MOTION:** Councilman Jaworski moved to approve the minutes of the November 7, 2023 Informational Work Session. Seconded by Councilwoman Beaudin, all in favor.

**VI. Special Presentation:**

1. Presentation by Grace Mary Brady honoring George Owings, III. – In honor of George Owings, III, Ms. Brady presented a slide presentation of George's life from his childhood up to the current day. Farewell to a great man.

2. Public Works Infrastructure Improvement Project Update: Saddle Repairs and Improvements. Mr. Berry presented a slide presentation updating the Council on the Infrastructure Improvement Project and saddle replacements. This project started in Richfield Station and finished in Bayview Hills. Mr. Berry showed the condition of the saddles and explained the process that was followed in order to make the necessary repairs to complete the project. Mr. Berry provided a comparison between a planned repair of 248 failed saddles to the cost of emergency repairs of 248 failed saddles. This resulted in huge cost savings for the Town. In addition to these savings, the Town was able to benefit from indirect savings such as finding valves and blow offs and saving staff time to focus on other maintenance items. Moving forward, Mr. Berry wants to continue a proactive approach versus a reactive approach.

**VII. Petitions and Communications** –

**A. Town Administrator's Report –** Ms. Wahl submitted the attached written report. Ms. Wahl wanted to extend congratulations to public works employee Dennis Burger on his recent accomplishment of obtaining the Maryland Department of Environment Class T2 Water System Operator's Licensure. Ms. Wahl updated the Council on the Aquatics Park RFP/RFQ, commenting it will be released in the coming weeks. Ms. Wahl noted that once the energy audit is received, she would forward it to the Council and post it on the website.

**B. Town Treasurer's Report** – Ms. Moran submitted the attached written report. With the conclusion of the FY23 audit, Ms. Moran gave a brief summary of interfund balances (assets/liabilities between the Town's funds.)

**C. Town Engineer Report** – Mr. Newton submitted the attached written report and addressed questions from the Council on report items.

**D. Calvert County Sheriff's Office Twin Beaches Deputy's Report** – Sergeant Moran submitted the attached written report and Lieutenant Hollinger was present to give the report and address questions from the Council. Lieutenant Hollinger briefed the Council on two car theft incidents.

**E. North Beach Volunteer Fire Department** – The attached written report was submitted. Councilman Jaworski stated preparations continue for the 100th anniversary of the fire department which will occur in 2026.

**F. Mayor's Report –** No report.

## VII. Resolutions & Ordinances:

A. Introduce Ordinance O-23-24, an ordinance of the Town Council of Chesapeake Beach, Maryland, to amend the language of the zoning code restricting onsite cannabis consumption establishments. **A public hearing will be held on December 21, 2023 beginning at 6:55 pm.**

## VIII. Report of Officers, Boards and Committees:

**A. Planning & Zoning Commission** – Ms. Berault submitted the attached written report.

**B. Board of Appeals –** A Board of Appeals continuation hearing on Case#2023-03-Rod n Reel/Donovan Estates LLC is scheduled for January 4, 2024.

**C. Chesapeake Beach Oyster Cultivation Society –** Ms. Alexander submitted the attached written report.

**D. Climate Change Advisory Committee –** Councilman Jaworski reported the Coastal Resiliency Steering Committee met on November 2nd discussing comments received on the draft coastal resiliency plan. Chair Foltz is updating the draft plan based off of comments received and will be reviewed at the next meeting scheduled for November 30th, 6 pm at Town Hall. The Steering Committee hopes to finalize the draft plan and submit it to the Town Council for discussion at the December 12th work session. Councilman Pardieck added that coming up, the Town will be doing a small pilot project with solar lighting at the northern access point of Kellam's Field.

**E. Economic Development Committee –** Councilman Jaworski reported the Calvert County Economic Development Advisory Commission met on November 8th at the National Ink and Stitch in Owings. Owner Tim Manley conducted a tour of his business. This is a continuation of what the Commission has been trying to do in visiting local businesses and getting a better idea of the challenges they are facing. Other discussion items were nominations for Vice-Chair, and events and topics scheduled for 2024 across the county. Work continues on updating the county event calendar. The County Economic Development Authority met on November 13th discussing proposed updates that will be considered by the County Planning Commission detailing changes to zoning in Solomons Town Center, the Calvert County Industrial Park sign, and issues relating to the Patuxent Business Park. Next meeting is scheduled for December 11th .

**F. Green Team Committee –** Councilwoman Beaudin reported that next year's Paddle and Pathway pick-up, scheduled for September 28, 2024, will be held in coordination with Calvert Natural Resources Division. They will supply kayaks and a kayak guide. The Team's next meeting is scheduled for December 7th at 6:30 pm at Twin Beaches Library. She thanked Mr. Berry for his help with the watering problems at the pollinator garden. She stated the Team is looking to construct on the southside entrance of Bayfront Park, the same display that was constructed on the northside, with a small section of the old bridge. The February Talk on Ospreys is scheduled to be held at the Northeast Community Center, and lastly, the next Spring Cleanup will coincide with Arbor Day, with tree plantings and giveaways during that event.

**G. Kellam's Revitalization Committee –** Councilman Fink reported he is very happy with the progress of things at Kellam's Field and is excited about moving forward.

**H. Twin Beaches Opioid Abuse Awareness Coalition –** Councilman Pardieck reported the group met November 9th at the Community Center. An update on the sculpture project, selected artist Thomas Sterner he is putting together his final project proposal to submit to the Maryland State's Arts Council for the implementation grant. As part of that project there are four sculpture models that were created by the artists that have been given to the Calvert County Health Department which they will display in different areas around the county. The committee is working on a few out-reach projects possibly with Bayside Baptist Church and the Twin Beach Players. The next meeting will be scheduled for February. Vice-President Fink suggested reaching out to Melissa Gray with the Twin Beaches Library to possibly display the sculptures there in the new library.

**I. Walkable Community Advisory Group** – No report.

**IX. <u>Unfinished Business:</u>** None.

**X. <u>New Business:</u>**

1. Town Council to consider the appointment of Victor F. Guido, Jr. to the Board of Elections to complete the term of Margaret P. Hartman which expires March 3, 2024. This term is to commence immediately and to initiate the four-year term for Victor F. Guido, Jr. on the Board of Elections that will commence on March 4, 2024.

   **MOTION:** Councilwoman Beaudin moved to approve the appointment of Victor F. Guido, Jr. to the Board of Elections to complete the term of Margaret P. Hartman which expires March 3, 2024. This term is to commence immediately and to initiate the four-year term for Victor F. Guido, Jr. on the Board of Elections that will commence on March 4, 2024. Seconded by Councilman Morris, all in favor.

2. Town Council to consider the reappointments of Randall Getman and Dominique Soroka to the Board of Elections for four-year terms to commence on March 4, 2024.

**MOTION:** Councilman Jaworski moved to approve the reappointments of Randall Getman and Dominique Soroka to the Board of Elections for four-year terms commencing on March 4, 2024. Seconded by Councilwoman Beaudin, all in favor.

3. Town Council to consider authorizing the Town Administrator to expend funds not to exceed $100,000 for the emergency repair of a leak at the Chesapeake Beach Water Reclamation Treatment Plant (CBWRTP) from the CBWRTP FY24 budget "repairs and maintenance" line item. A budget amendment to account for this emergency expenditure is forthcoming.

**MOTION:** Councilman Jaworski moved to approve authorizing the Town Administrator to expend funds not to exceed $100,000 for the emergency repair of a leak at the Chesapeake Beach Water Reclamation Treatment Plant. Seconded by Councilman Morris, all in favor.

4. Town Council to consider authorizing the Mayor to expend $365,000 in "American Rescue Plan Act (ARPA) funds" plus closing costs for the purchase of property at 3915 26th Street per resolution #R-23-3.

**MOTION:** Councilman Morris moved to approve authorizing the Mayor to expend $365,000 in "American Rescue Plan Act (ARPA) funds" plus closing costs for the purchase of property at 3915 26th Street per resolution #R-23-3. Seconded by Councilwoman Beaudin, all in favor.

**XI. Public comment was received by:** None received.

**XII. Council Lightning Round:**

1. Dr. Beaudin commented tomorrow is the deadline to vote on the calendar photos so get your vote in on your favorite photos. She looks forward to seeing folks at the Light Up the Town event and wishes everyone a happy and blessed Thanksgiving.

2. Mr. Jaworski looks forward to seeing everyone at the Light Up the Town event on Sunday, November 26th and also the North Beach Holiday Parade and Holiday Market on Friday, December 1st.

3. Mr. Morris commented we are entering that period of giving thanks. He is thankful for his hometown of Chesapeake Beach, the Twin Beach area, and Southern Maryland. He wishes everyone the warmest small-town Thanksgiving!

4. Mr. Pardieck stated it is hard to believe the holidays are here already. He wished everyone safe travels over the holidays and commented, that he saw Bruce Wahl working on his annual Christmas lights and music display in their neighborhood. Mr. Wahl does a really nice display and hopes folks can get a chance to drive by and see it.

5. Mr. Fink announced that with help from Sue Alexander and Melanie Crowder, the Town has applied for the Tree City designation. Also, the Tree Board is currently working on scheduling their first meeting. Mr. Fink is excited about the Light up the Town this year as there will be a first time ever ice-skating rink. The ice skating will start at 1pm and the Light up the Town will start at 4 pm with vendors and a bonfire. Lastly, check out the Tour of Lights and the Chesapeake Village Luminary. Happy Thanksgiving all!

**XII. Adjournment:**

There being no further comments, the meeting adjourned at 8:37 pm on a motion by Councilman Jaworski. Seconded by Councilwoman Beaudin, all in favor.

Submitted by,

Sharon L. Humm
Town Clerk

**MINUTES OF THE**
**TOWN COUNCIL INFORMATIONAL**
**WORK SESSION**
**DECEMBER 12, 2023**

**I.** Patrick J. Mahoney, Mayor, called the meeting to order at 6:00 p.m. In attendance were Dr. Valerie Beaudin, L. Charles Fink, Margaret Hartman, Lawrence P. Jaworski, Keith Pardieck, and Gregory J. Morris, Council members, Holly K. Wahl, Town Administrator, Sharon L. Humm, Town Clerk, Brittany Moran, Town Treasurer, and Josh Stinnett, Water Reclamation Treatment Plant Manager. Absent were Todd Pounds, Town Attorney, James Berry, Public Works Manager, and Wayne Newton, Town Engineer.

**II.** **Pledge of Allegiance** – The Mayor led the Pledge of Allegiance.

The Mayor took the opportunity to introduce to the Town Council, Lieutenant Tilley, the Town's new Lieutenant. The Mayor asked the Lieutenant to give a brief background on himself. The Council welcomed the new Lieutenant and thanked him for his service.

**III.** **Informational discussion on the following:**

1. Town of Chesapeake Beach Coastal Resiliency Plan – Ms. Wahl stated the Town's Coastal Resiliency Task Force and Steering Committee worked collectively to provide a draft coastal resiliency plan which was submitted to the State in June and reviewed by the Town Council in July of this year. The draft plan has received public comment from citizens, businesses, and the Town's Planning and Zoning Commission. Those comments have been reviewed by the Coastal Resiliency Steering Committee and changes were incorporated based on those comments. Chair Foltz of the Steering Committee was present to address questions and concerns from the Council. It was noted that the document is a living document and would be revisited as, and when needed. The Council expressed their appreciation to Mr. Foltz and all that participated in drafting this Plan. Staff expects to present this Plan at the December Town meeting for adoption so it can be submitted to the State to remain in compliance with grant funding.

2. Town of Chesapeake Beach Zoning Administrator – As per the Town's zoning code, Section 290-26, "Administration of permitting process" the Town is required to have a Zoning Administrator that shall administer and enforce the provisions of the administration of the permitted process and implement violations, as necessary. This position is appointed by the Mayor and confirmed by the Town Council. With the departure of Mr. Jakubiak, the Town Administrator is currently serving in this capacity of Zoning Administrator with input and guidance from the Town Planner, Public

Works Administrator, and the Town Engineer. It is recommended that the Town Council consider confirming the Town Administrator to serve as the Zoning Administrator to formalize this role per the requirements of the Town code. Ms. Wahl addressed questions from the Council.

3. CBWRTP Capital Improvements purchase of seals on two press feed pumps – Ms. Wahl stated that the Town Council approved a FY24 budget for the CBWRTP that included the cost of seals on two press feed pumps at the Plant. However, the cost exceeds what was budgeted. Staff is recommending the Town Council to approve the authorization of the purchase of these seals in an amount not to exceed $35,000 so as to cover equipment and labor to complete the work. This will be presented at the December Town meeting for consideration.

4. Public Parks – Councilwoman Hartman was pleased to announce that with the completion of the three pocket parks, the Council has before them for consideration and discussion, proposed names for the three parks. An ordinance to recognize and implement these parks into the code is expected to be presented at next week's Town meeting. She is hopeful of a ribbon cutting in the Spring. Green Team Chair Beaudin stated, as part of being a Tree City USA, the Group celebrates Arbor Day with the Town's Spring Clean-up and would like to plant a native tree in each one of the parks if that could be possible.

## IV. Council Lightning Round

1. Ms. Hartman commented on the coastal resiliency plan, stating it was long, detailed, and very readable for any of the citizens that would want to read it! She appreciates the Team's efforts to do the background and commented "very well done!" She looks forward to voting on it.

2. Mr. Pardieck wished all a good evening.

3. Mr. Morris commented, ice skating this Saturday at Town Hall, Clydesdales this Saturday at North Beach, parades, and holiday lighting ceremonies here in these amazing beaches. We are a small town! Happy Holidays everyone!

4. Mr. Jaworski commented that the Holiday Lights Tour was a great time and encouraged everyone to vote for their favorites as the deadline is December 14th. Ice skating Saturday from 3 – 7 pm, a reading of the Polar Express this Friday, 5:30 pm at the Railway Museum, NBVFD Santa runs continue, and the Budweiser Clydesdales on Sunday 4 pm at North Beach. Come on out everyone!

5. Mr. Fink wanted to say that he truly appreciates all the comments from his fellow colleagues tonight on the coastal resiliency plan. Personally, he feels good about the document and will be supporting it. He also mentioned that he had a great time on the Tour of Lights and wished everyone a Merry Christmas!

6. Ms. Beaudin commented that she knows her concerns and questions on the coastal resiliency plan were a little lengthy but stated that town residents can know that she reads thoroughly all materials the Council receives and has to question things if she feels it necessary.

## V. Adjournment:

There being no further comments the meeting adjourned at 7:28 p.m. on a motion by Councilman Jaworski. Seconded by Councilwoman Beaudin, all in favor.

Submitted by,

Sharon L. Humm
Town Clerk

**Town Administrators Report – December 2023**

I. **UPCOMING REQUESTS FOR PROPOSALS (RFP):** *All RFPs are posted on the Town website when they are released for public view.*

**Chesapeake Beach Aquatics Park Request for Qualifications (RFQ/RFP):** Town staff reviewed the pool elements that will be included in an RFQ/RFP for the Park at the November Town Council work session. Adjustments are being made to the RFQ to ensure that proposals will be received with qualifications for an RFQ/RFP release. Town staff is coordinating with the Town Engineer to release the RFP/RFQ.

**Safe Routes to School (SRTS) 100% design phase and construction drawing RFP:** The Town Administrator and Town Engineer have coordinated with SHA over the last 5 months to make modifications to the RFP to obtain SHA approval. Additional documents and cost estimating for the project were supplied by the Town to SHA. SHA responded on December 13, 2023, confirming receipt of additional changes to the RFP based on a new RFP format that the State is utilizing for the project. The Town was also notified that a new project team is taking over the process moving forward. Based on information received from the new project team, the Town hopes to receive approval from the State to release the RFP in 4 weeks.

**Kellam's Field Storm Drain and the Miller Loveless Park Site Work**: The Town of Chesapeake Beach has received the required permits for the project and the RFP is expected to be released before the end of 2023.

**Public Works Water Tower Maintenance Contract**: The Town is reviewing needs for water tower maintenance that will potentially result in the release of an RFP for tower maintenance or explore options to piggyback on another governmental contract for these services.

**Town of Chesapeake Beach Annual Fireworks Display**: An RFP for fireworks and barge services was released on November 21st, 2023, and sent to all the pyrotechnics that are licensed in the State of Maryland. The Town held a mandatory pre-bid meeting on December 5th at 10 AM. Proposals are due to the Town by January 4th, 2024.

**ONGOING WALKABILITY COORDINATION WITH SHA:**

| Project | Coordination with SHA MDOT |
|---|---|
| **Safe Routes to School (SRTS)** | The Town Council authorized the execution of the Safe Routes to School SRTS Memorandum of Understanding (MOU) to complete the 100% design and construction drawings for the sidewalk project extending sidewalks from Beach Elementary School to "F" street along Old Bayside Rd and South along RT 261 to Chesapeake Village Boulevard. The MOU provides that the State funds 80% of the design cost and the Town funds 20% of the design cost with the State determining the breakdown in costs. **Awaiting approval by SHA MDOT of the RFP.** |

| | |
|---|---|
| **Safe Walkway along RT 261 near the NBVFD** | The Town Council authorized the Town Engineer to complete a feasibility study of this walkway for submission to the State in coordination of a new safe crossing connecting Chesapeake Beach and North Beach in a currently unsafe area. The feasibility study is the first step in starting the conversation with the State on the project. The Town completed the same study to initiate the SRTS project currently in the 100% design phase with SHA MDOT. **The feasibility study is completed and submitted to SHA MDOT.** The Town posted this document on the Town website under Walkable Community Committee Advisory Group for public view. |
| **Priority projects submitted to Calvert County government for coordination on the Consolidated Transportation Priority Projects (CTP) for SHA MDOT** | The following projects were submitted as priority projects to the County for request to include in CTP project list for Calvert County. Funding has been substantially cut on CTP projects.<br>1) SRTS sidewalks (Top Priority)<br>2) Trails and Greenways – expansion of the railway trail to E street connecting to the future SRTS sidewalks.<br>3) Traffic calming in front of Bayfront Park.<br>4) Boardwalk safe crossing at RT 261. |

## II. SUSTAINABILITY:

### a. Energy Audit

The University of Maryland Environmental Finance Center has worked with Town staff over the last 20 months to conduct an energy audit of the Town. This audit is provided to the Town free of charge as a Sustainable MD designated community. A follow up was sent to UMDFC on December 12th. The audit will be placed on the Town website once received.

### b. Tree City Application

Sue Alexander and Melanie Crowder spearheaded the Town's efforts to submit the Tree City Application to designate the Town of Chesapeake Beach officially as a Tree City. We look forward to being designated as a Tree City and continuing to improve the sustainability of the Town.

## III. CHESAPEAKE BEACH PUBLIC WORKS REPORT:

**Update from Jay Berry, Public Works Administrator**

**Town Administrators Report – December 2023**

Water leak- Public works has installed a Water main blow off at the end of the water line located on Green Spring court in Richfield Station. This was needed for our flushing program. While in the area, PW proactively investigated the closest saddle in that area. There are four other areas in Richfield where PW will proactively investigate the condition of the saddles. PW plans on having all this work accomplished by March/April and will have a report to share with the council at that time. Public Works also replaced a sewer main clean out on 30th St.

Wet wells- PW have completed the control panel upgrades to the fishing creek wet well. All the new conduit, wiring, controls, and cabinets are installed. This wet well is now like our other ones with Mission and SCADA operating systems. With this phase complete PW will move ahead with the replacement of the wet well plumbing itself.

Water meter/MXU- PW did receive meters and our currently making change outs from a list generated while waiting for these meters to arrive.

Flushing- Next flushing will be in early 2024, stay up to date by signing up for Town eblast.

Ball fields – The LED change out is scheduled for mid-January and should take about 10 working days to complete.

Railway Trail – PW is keeping up with leaves and branches. PLEASE pick up after your pets.

PW Trainings- Our training is up to date for 2023 and we are scheduling for 2024 now.

Richfield Station water saddle replacement- This report was presented at the November Council meeting and can be found on our Town website. The "Water leak" in this report public works is still spot-checking saddles in Richfield Station and I plan to summarize these findings in April of next year at a Council work session.

Emergency calls – PW received 13 total calls and responded to 4. There were 2 for water leaks and 2 for sewer backups that required a response.

## IV. CHESAPEAKE BEACH WATER RECLAMATION TREATMENT PLANT (CBWRTP):

**Technical Report of activity at the CBWRTP by Josh Stinnett, CBWRTP Superintendent**

WRTP Staff performed scheduled regular preventative maintenance checks and services as scheduled through the asset management program, which generated work orders for routine (daily/weekly/monthly), scheduled (based on equipment runtime), predictive (based on equipment

readings), and corrective repairs for equipment based on readings, pressures, or time in service for equipment in the plant.

WRTP Staff performed monthly inspections of the Plant Combination Air Valves, which are critical to ensure the proper operation of pumped/suction lines throughout the Plant. Staff performed semi-annual inspections of the press feed pump gear reducers. Routine safety inspections were conducted for the Plant eyewash stations and on-site monthly fire extinguisher inspections.

Seasonal checks were begun for the plant-building unit heaters in preparation for the winter months. End-of-season inspections were performed for all heat trace systems on exterior piping.

WRTP Staff performed monthly inspections of the Denitrification Filter cells as per the O&M manual. This involved observing the filter units during a backwash cycle, to assess the sequence of events and timing for the process to ensure that the program operates properly. Observations were made during this cycle to ensure that there were no "dirty spots" that may indicate that the filter was not being cleaned properly during backwash, or "hot spots" where the media appears to be boiling which may indicate upset gravel or short-circuiting of the media. Staff also observed the filter as it was drained to identify if the media was level, if there were any cavities or cracks in the media bed, and that no heavy layers of mud or other indications of insubstantial cleaning were observed. This could be caused by the excessive application of chemicals or algae accumulation.

WRTP Staff conducted filter media analysis to determine the quantity of fine materials accumulating in the upper layer of the filter media. Fine material accumulation can reduce the effectiveness of the filter media by filling in the tiny voids present between the individual grains of the media. This can cause a reduction in flow or "blinding" through the filter and reduce the effective flow rate that can be applied to a filter. To date, the average percentage of fines found in a 100 g sample of media has been $\leq 3\%$. This quantity of fines is acceptable, as no recommended action for replacement of the upper six inches of media is indicated for fines accumulations of less than ~15%.

WRTP Staff performed scheduled maintenance for lubrication of Aeration Blower #2 motor bearings and Return Activated Sludge pump #3 pump bearings.

WRTP Staff performed corrective maintenance to replace a worn pump tube for Methanol Pump #1. These are items that require replacement over time because of wear from use and is not indicative of an issue with this system.

WRTP Staff have continued reviewing means by which to reduce our utility costs at the Plant as related to water and power usage.

Following approval from the Council on November 16th, work was begun by Taylor Utilities to replace a section of the Plant's 4" water main where the presence of a leak was identified. This work

commenced on November 17th and was completed on November 29th. A check of the water usage through the meter following this repair confirmed that the leak had been addressed.

Following the repair of the water main leak, a further review of the Plant water consumption in the individual buildings is being performed, utilizing recently installed sub-meters. It has been identified that the Headworks building uses a significantly higher quantity of water on a day-to-day basis. This usage can be attributed to the water used for the screening equipment and the seal water usage for the press feed pumps, when in operation. To date, the average consumption from the screening equipment is between 600-800 GPD, with an increase to 900-1100 GPD with the press feed pumps running.

The vendor that supplied the screening equipment, Parkson Corporation, was contacted for copies of the electrical controls schematic and equipment sequence of operation. This will be utilized to confirm there is no defect in the operation of the equipment and identify if there are program adjustments that can be performed to reduce the water needed during each cycle of the screening equipment.

There is a current project for approval to replace the mechanical seals for the press feed pumps. The current seals require seal water which provides lubrication and flushing action for the mechanical seals of the press feed pumps. The current mechanical seals are of a type that far exceeds the requirements of these pumps and are of such a nature that repairs to the seals are excessively expensive. For example, one of the seals was replaced in 2021, after only 4-5 years of service, at a cost of ~ $10,000. The intent is to replace these seals with a more typical packing-style seal. This will reduce the water usage to 0 and provide a more easily maintained seal for these pumps that are used at most two times a week.

WRTP Staff are currently recording power usage using the power monitors installed in June. MRWA provided an assessment of the Plant power usage indicating a recommendation to address the Plant lighting. A rough scope of work is being developed for the replacement of the Plant exterior lighting fixtures for use in an RFP, and further discussions working towards the feasibility of solar panels.

Coyne Chemical provides many of the chemicals utilized in the Plant. The most utilized chemical provided is PACL 2000, which is used for the mitigation of ortho-phosphates in the Plant process. Coyne is assisting with testing to determine the feasibility of another chemical, PACL 2035. This chemical has shown better effectiveness in ortho-phosphate removal but uses more chemicals. An assessment of the amount of PACL 2035 compared to PACL 2000 is being performed and has transitioned from jar testing in September, to in-process testing of the new chemical. Estimates from the initial jar testing showed a demand of approximately 10% more chemical for the PACL 2035 over the PACL 2000. Using annual chemical usage from previous years, there is an indication that there could be substantial cost savings for the Plant by transitioning to PACL 2035.

The Town Engineer, McCrone Engineering, and the Plant Superintendent regarding the current Headworks Improvement project, with a follow-up site visit by McCrone, planned for the week of December 18th.

The Shellfish Protection Tank was utilized two times during this period. This was for the heavy rainfall on November 21st to 22nd and December 10th to 11th. For the November event, the Plant sent .585 MG to the SPT from 3.21" rainfall, and for the December event, the Plant sent .728 MG to the SPT from 2.90" rainfall.

No incidents were reported in the plant's Solids and Handling Operation. The present Solids Hauling Contract was renewed on August 1, 2023, with options for renewal for one additional one-year period.

The WRTP had no SSO spills or Filter Bypass to report for this month's meeting.

Future Projects:

To complete working on setting up an inventory of priority spare parts. Continued training on maintenance of plant equipment. Conduct a review and update of Plant SOPs to fit with the appropriate procedures for use of equipment and processes for Plant operation. Additional work to refine some of the process control systems to make the Plant more energy efficient.

***See Exhibit A for a update on the isolation of the water leak at the CBWRTP.***

## V. TOWN ASSETS:

- **Kellam's Field:** Youth sports activities have ended for the season at Kellam's.

- **Bayfront Park:** Bayfront Park remains closed to the public and open to Town residents, NBVFD, and the Twin Beach Deputies.

- **Chesapeake Beach Water Park:** Town staff briefed the Town Council during the October 3, 2023, work session regarding the status of the existing 29 year old Chesapeake Beach Water Park and released a Quick Facts document to answer questions regarding the current status. Information will be made available on next steps during the Town's RFP process.

- **Property Acquisition**: The Town has acquired the deed to 3915 26th Street Chesapeake Beach, MD. the Town Council passed Resolution R-23-3 authorizing the Mayor to purchase real property located at 3915 26th Street Chesapeake Beach, MD legal description: LTS 8-11 BLK F MIDDLE SUB in the amount of $365,000. The four parcels of land adjoin the Town Hall and provide the opportunity for future public governmental operations at a higher ground.

**Figure 1:** four parcels of land acquired and titled in the Town's name.

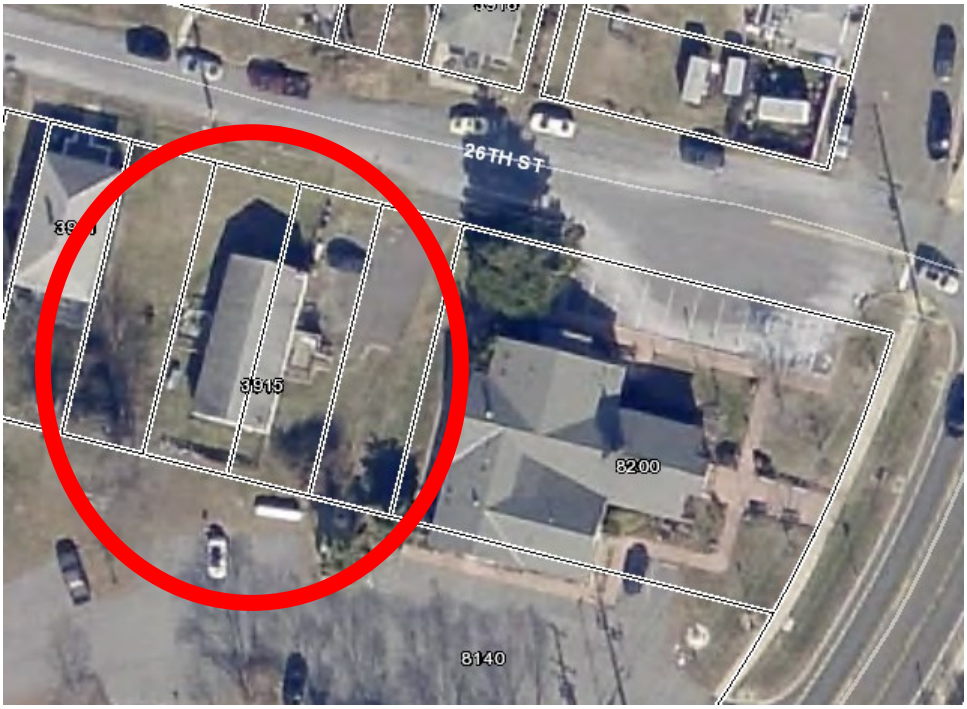



**Figure 2**: an aerial image of the collective of four parcels of land adjoining Town Hall (in red). The Town's existing property is shown in purple.

**Town Administrators Report – December 2023**

## VI. GRANTS:

1. **COMPLETE - Pocket Park funding for $150,000 with $0 match for three pocket parks**: The pocket parks are complete at three locations, i) the B Street overlook, ii) the Kellams northern access point, and iii) the 29th street waterfront park. All parks are ADA accessible and have received positive feedback from neighboring property owners. The viewing posts will be placed as soon as they arrive and are expected this month and a formal ribbon cutting is being discussed, more updates to follow.

2. **IN PROGRESS - Parks and Playgrounds Infrastructure Grant for the Miller Loveless Park at Kellam's field at $150,000 with $0 match**: The grant covers the installation of new and improved play equipment at the park and will start when the grading work is completed. Site plans are defined for this work and the scope of the work is being finalized by the Town Engineer for the release of the RFP.

3. **IN PROGRESS-Safe Routes to School SRTS 100% design**: Funded at 80% SHA MDOT and 20% the Town for design work only as Phase II of the project. The Town has budgeted all funding necessary for this project with the expectation that 80% of the costs will be reimbursed by the State.

4. **COMPLETE-Coastal Resiliency Grant**: The Town held multiple public engagement sessions to engage citizens on the impacts of coastal resiliency through a grant funded by Maryland Department of Natural Resources through grant funds provided in the amount of $75,000. To view public comment received on the Coastal Resiliency plan please click here. The Coastal Resiliency Steering Committee held a meeting on November 2, 2023, and November 30, 2023. The Town Council reviewed the plan during the December 11, 2023, Town Council work session.

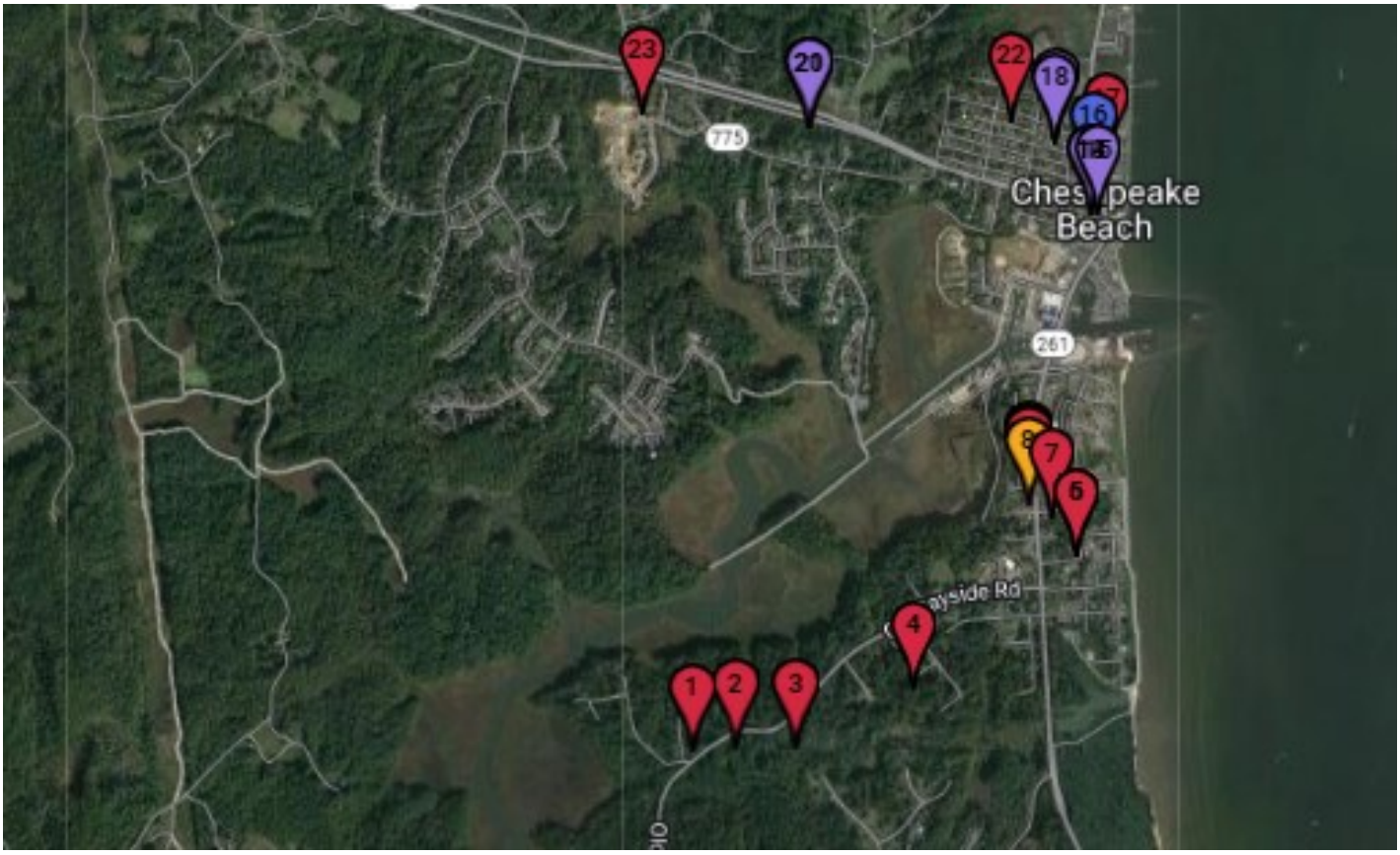
## VII. TOWN PERMIT ACTIVITY:

| *Permit #* | *Address* | *Improvement* |
|---|---|---|
| 2023-76 | 4008 Old Bayside Rd. | After the fact retaining wall |
| 2023-77 | 2315 Sparrow Ct | Solar panels |
| 2023-78 | 8150 Bayview Hills Rd | Solar panels |
| 2023-79 | 3925 14th St. | Interior Reno (amended #2022-81) |
| 2023-80 | 3925 14th St. | Interior Reno amended Co# R-2418375 |
| 2023-81 | 3811 28th St | Shed & Fence |
| 2023-82 | 2723 Oak Ridge Dr | Fence |

| *Permit #* | *Address* | *Improvement* |
|---|---|---|
| 2023-83 | 8025 Valley View Dr | Direct cable bore |
| 2023-84 | 3905 27th St. | Remove tree |
| 2023-85 | 7786 Dentzel Ct | after the fact- close in underside of deck |
| Denied | 7835 C St | 12x30 Deck |
| 2023-86 | 7613 B St | 4 ft Aluminum fence |
| 2023-87 | 7744 Deforest Dt | 6ft privacy fence |
| n/a | 8005 Addison Bridge Pl | Remove tree & shrub |

## VIII. CODE ENFORCEMENT ACTIVITY:

All **Open Code** Enforcement Cases Mapped:



## Town Administrators Report – December 2023

Follow Up Date
- 30+ days past due (15 cases)
- 15-29 days past due (1 cases)
- 4-14 days past due
- 1-3 days past due
- Due Today
- 1-3 days away
- More than 4 days away
- No follow up date (6 cases)

## All Open Code Enforcement Cases by location and violation

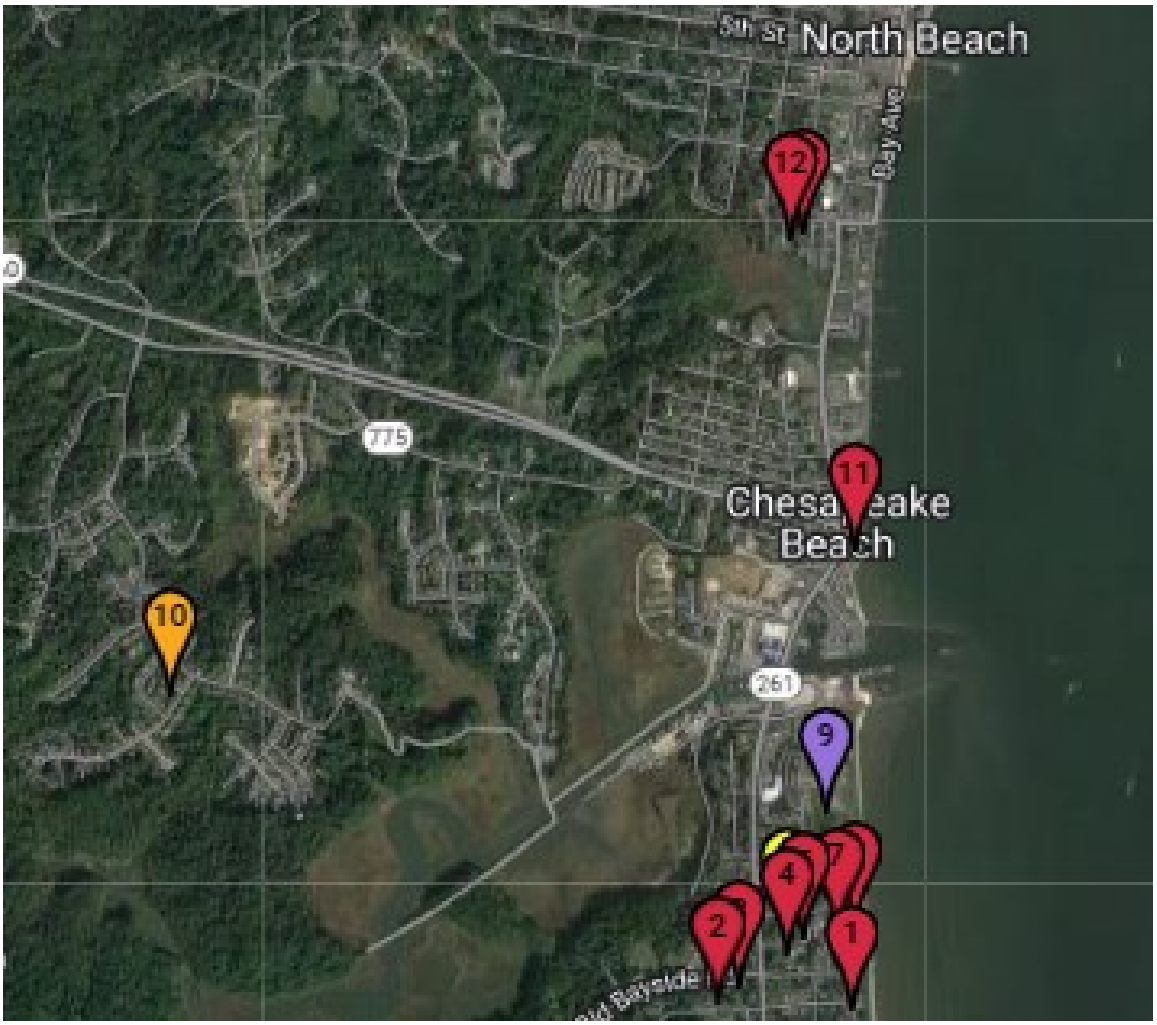
| | Case Number | Date | Location | Status | Violations |
|---|---|---|---|---|---|
| 1. | CE22-82 | 11/18/2022 | 7516 OLD BAYSIDE Rd CHESAPEAKE BEACH, MD 20732 | Notice of Violation Given | 115-3 Dangerous Buildings - Failure to Comply, Exterior Structure - Lack of minimum general maintenance, Failure to maintain a building, structure or premises, Property Maintenance - Sanitary Maintenance - Nuisance, Health or Fire Hazard |
| 2. | CE22-66 | 07/27/2022 | 7603 OLD BAYSIDE Rd CHESAPEAKE BEACH, MD 20732 | Administrative Citation Issued | Exterior Structure - Lack of minimum general maintenance, Property Maintenance - Minimum Maintenance Requirements |
| 3. | CE23-17 | 03/20/2023 | 7685 OLD BAYSIDE Rd CHESAPEAKE BEACH, MD 20732 | Notice of Violation Given | Zoning Permit Required, Failure to Obtain a Rental License, Zoning Infraction |
| 4. | CE23-4 | 01/23/2023 | 3605 12TH St CHESAPEAKE BEACH, MD 20732 | Notice of Violation Given | Failure to Obtain a Rental License |
| 5. | CE23-24 | 05/04/2023 | 7524 C St CHESAPEAKE BEACH, MD 20732 | Notice of Violation Given | Failure to Obtain a Rental License |
| 6. | CE19-91 | 11/14/2019 | 7524 C St CHESAPEAKE BEACH, MD 20732 | Notice of Violation Given | Property Maintenance - Sanitary Maintenance - Vehicles, Property Maintenance - Sanitary Maintenance - Garbage, Trash & Debris, Sanitary Maintenance, Property Maintenance - Minimum Maintenance Requirements |
| 7. | CE23-3 | 01/23/2023 | 3907 16TH St CHESAPEAKE BEACH, MD 20732 | Notice of Violation Given | Failure to Obtain a Rental License |
| 8. | CE23-39 | 11/20/2023 | 7626 BAYSIDE Rd CHESAPEAKE BEACH, MD 20732 | Awaiting Zoning Permit | Zoning Permit Required, Failure to Obtain a Rental License |
| 9. | CE23-23 | 05/04/2023 | 7634 BAYSIDE Rd CHESAPEAKE BEACH, MD 20732 | Notice of Violation Given | Failure to Obtain a Rental License |
| 10. | CE23-29 | 08/08/2023 | 7634 BAYSIDE Rd CHESAPEAKE BEACH, MD 20732 | Awaiting Zoning Permit | Property Maintenance - Minimum Maintenance Requirements , Property Maintenance - Sanitary Maintenance - Garbage, Trash & Debris, Property Maintenance - Sanitary Maintenance - Grass, Exterior Structure - Lack of minimum general maintenance, Failure to Obtain a Rental License |
| 11. | CE18-10 | 05/18/2018 | 7636 BAYSIDE Rd CHESAPEAKE BEACH, MD 20732 | Notice of Violation Given | Property Maintenance - Sanitary Maintenance - Nuisance, Health or Fire Hazard, Property Maintenance - Minimum Maintenance Requirements (B), 200-6 Violations and penalties for Property Maintenance, Property Maintenance - Sanitary Maintenance - Grass, 115-3 Dangerous Buildings - Failure to Comply, Foreclosure, 115-3 Dangerous Buildings - Failure to Comply |

## Town Administrators Report – December 2023

| | | | | | |
|---|---|---|---|---|---|
| 12. | CE23-40 | 11/20/2023 | 7636 BAYSIDE Rd CHESAPEAKE BEACH, MD 20732 | Notice of Violation Given | 115-3 Dangerous Buildings - Failure to Comply, Zoning Permit Required |
| 13. | CE22-54 | 06/28/2022 | 3919 E CHESAPEAKE BEACH Rd CHESAPEAKE BEACH, MD 20732 | Notice of Violation Given | Failure to Obtain a Rental License, Property Maintenance - Minimum Maintenance Requirements , 115-3 Dangerous Buildings - Failure to Comply, 115-3 Dangerous Buildings - Failure to Comply |
| 14. | CE23-37 | 08/15/2023 | 3919 E CHESAPEAKE BEACH Rd CHESAPEAKE BEACH, MD 20732 | Complaint Filed | Constructing an Improvement within Town Rights-of-Way |
| 15. | CE23-36 | 08/15/2023 | 8220 BAYSIDE Rd CHESAPEAKE BEACH, MD 20732 | Complaint Filed | Constructing an Improvement within Town Rights-of-Way |
| 16. | CE23-16 | 03/20/2023 | 3915 27TH St CHESAPEAKE BEACH, MD 20732 | Notice of Violation Given | Property Maintenance - Sanitary Maintenance - Garbage, Trash & Debris |
| 17. | CE23-28 | 08/07/2023 | 8309 BAYSIDE Rd CHESAPEAKE BEACH, MD 20732 | Notice of Violation Given | Exterior Structure - Lack of minimum general maintenance, Zoning Infraction |
| 18. | CE23-7 | 02/06/2023 | 3814 28TH St CHESAPEAKE BEACH, MD 20732 | Stop Work Order | Zoning Permit Required, Property Maintenance - Minimum Maintenance Requirements , Sanitary Maintenance |
| 19. | CE23-41 | 11/28/2023 | 3814 28TH St CHESAPEAKE BEACH, MD 20732 | Door Hanger | Inoperable Vehicle |
| 20. | CE22-51 | 06/15/2022 | 3325 E CHESAPEAKE BEACH Rd CHESAPEAKE BEACH, MD 20732 | Administrative Citation Issued | Failure to Obtain a Rental License, Property Maintenance - Sanitary Maintenance - Nuisance, Health or Fire Hazard, Exterior Structure - Lack of minimum general maintenance, Failure to maintain a building, structure or premises, Sewer is Backed Up, Waste/Sewer Back Up, Property Maintenance - Minimum Maintenance Requirements , 115-3 Dangerous Buildings - Failure to Comply, Sewer/Water Manual Violation, Property Maintenance - Minimum Maintenance Requirements (B) |
| 21. | CE23-27 | 07/14/2023 | 3325 E CHESAPEAKE BEACH Rd CHESAPEAKE BEACH, MD 20732 | Notice of Violation Given | 115-3 Dangerous Buildings - Failure to Comply |
| 22. | CE23-38 | 10/12/2023 | 3705 29TH St CHESAPEAKE BEACH, MD 20732 | Notice of Violation Given | Inoperable Vehicle |
| 23. | CE22-80 | 11/07/2022 | 2952 HERITAGE Dr CHESAPEAKE BEACH, MD 20732 | Awaiting Zoning Permit | 110-15: Steep Slope Construction on or Adjacent to, Zoning Permit Required, 110-15: Steep Slope Construction on or Adjacent to |

**Town Administrators Report – December 2023**

**Housing & Livability Rental Registry address of rental applications received:**



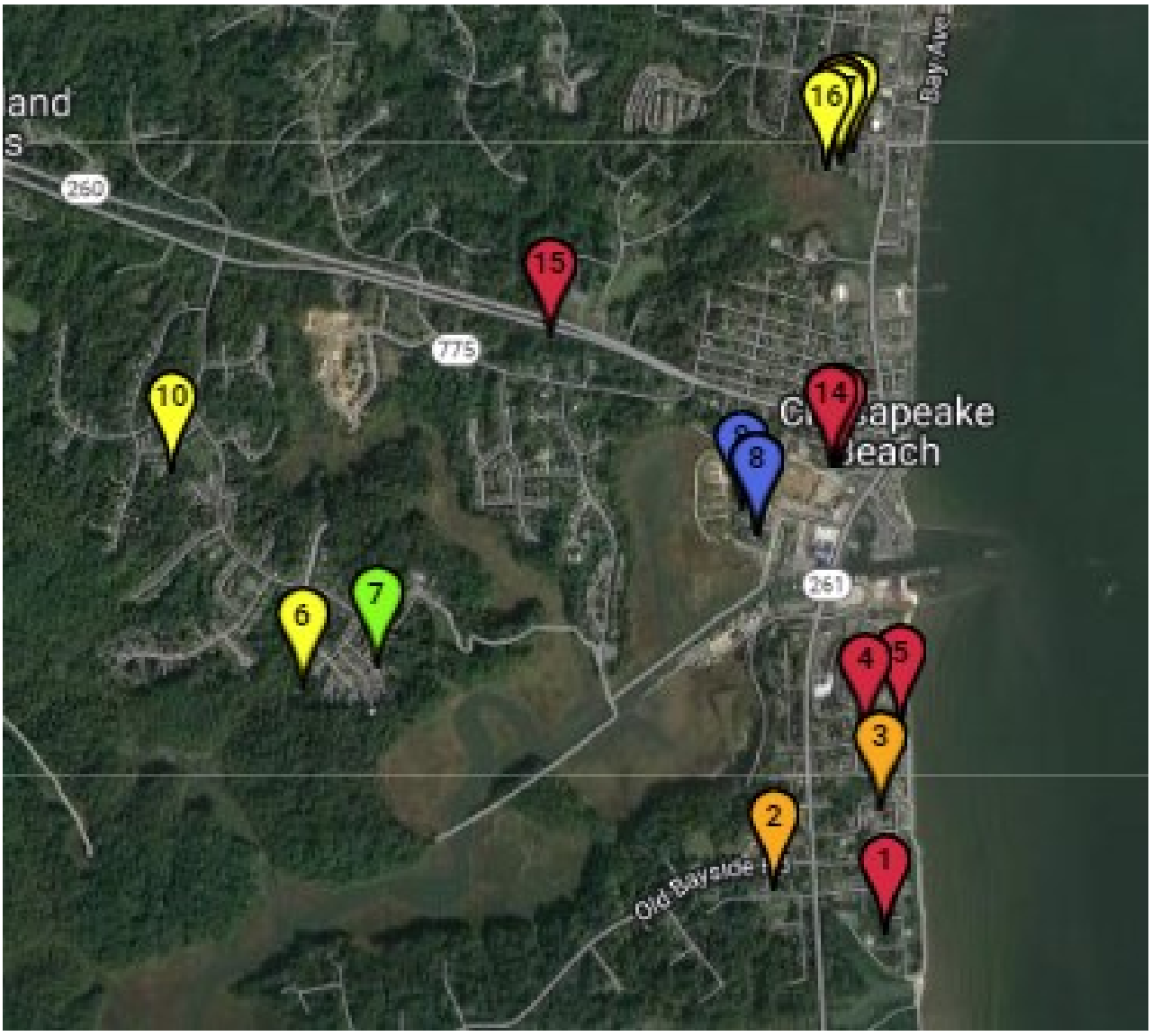

Follow Up Date
- 30+ days past due (15 cases)
- 15-29 days past due (1 cases)
- 4-14 days past due
- 1-3 days past due
- Due Today
- 1-3 days away
- More than 4 days away
- No follow up date (6 cases)

## Town Administrators Report – December 2023

| | Case # | Location | Status |
|---|---|---|---|
| 1. | RR23-31 | 4019 13TH St CHESAPEAKE BEACH, MD 20732 | Application received |
| 2. | RR23-25 | 7411 13TH St CHESAPEAKE BEACH, MD 20732 | Application received |
| 3. | RR23-26 | 7921 OLD BAYSIDE Rd CHESAPEAKE BEACH, MD 20732 | Application received |
| 4. | RR23-27 | 3915 14TH St CHESAPEAKE BEACH, MD 20732 | Application received |
| 5. | RR20-31 | 7524 C St CHESAPEAKE BEACH, MD 20732 | Application received |
| 6. | RR23-28 | 3912 14TH St CHESAPEAKE BEACH, MD 20732 | Application received |
| 7. | RR23-82 | 4012 14TH St CHESAPEAKE BEACH, MD 20732 | Application received |
| 8. | RR23-30 | 7527 B St CHESAPEAKE BEACH, MD 20732 | Application received |
| 9. | RR20-36 | 4013 CAROUSEL Way CHESAPEAKE BEACH, MD 20732 | Application received |
| 10. | RR23-92 | 2304 CARDINAL Way CHESAPEAKE BEACH, MD 20732 | Application received |
| 11. | RR20-156 | 8191 WINDWARD KEY Dr CHESAPEAKE BEACH, MD 20732 | Application received |
| 12. | RR20-137 | 8727 DAVID CHESAPEAKE BEACH, MD 20732 | Application received |
| 13. | RR23-33 | 8732 D St CHESAPEAKE BEACH, MD 20732 | Application received |

**Town Administrators Report – December 2023**

**Housing & Livability Rental Registry Locations of Rental Properties with Inspections in Progress**




Follow Up Date
- 30+ days past due (15 cases)
- 15-29 days past due (1 cases)
- 4-14 days past due
- 1-3 days past due
- Due Today
- 1-3 days away
- More than 4 days away
- No follow up date (6 cases)

## Town Administrators Report – December 2023

| | | | |
|---|---|---|---|
| 1. | RR23-78 | 4013 12TH St CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 2. | RR23-72 | 7411 13TH St CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 3. | RR23-29 | 4017 15TH St CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 4. | RR23-76 | 4002 17TH St CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 5. | RR23-93 | 4032 17TH St CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 6. | RR23-96 | 8272 GREENSPRING Dr CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 7. | RR23-97 | , MD | Inspections in progress |
| 8. | RR23-65 | 3945 GORDON STINNETT Blvd 109 CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 8. | RR23-66 | 3945 GORDON STINNETT Blvd 108 CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 9. | RR23-62 | 3925 GORDON STINNETT Ave 128 CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 10. | RR23-95 | 2475 DEERFIELD CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 11. | RR23-42 | 8191 D St CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 12. | RR23-43 | 8193 D St CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 13. | RR23-45 | 8197 D St CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 14. | RR23-41 | 8189 D St CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 15. | RR22-37 | 3325 E CHESAPEAKE BEACH Rd CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 16. | RR23-34 | 8724 DAVID CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 17. | RR23-36 | 8725 DAVID CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 18. | RR23-38 | 8729 DAVID CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 19. | RR23-39 | 8731 DAVID CHESAPEAKE BEACH, MD 20732 | Inspections in progress |
| 20. | RR23-32 | 8734 D St CHESAPEAKE BEACH, MD 20732 | Inspections in progress |

## IX. TOWN EVENTS:

**The month of December has been busy with Town events:**

**Light up the Town –** video recap here.

**Holiday Lights Tour** – video recap here.

**Ice Skating & Book Reading –** December 16, 2023, at Town Hall

**Barbara "Jo" Finch Brightest Beacon on the Bay** – awards during the December 21st Town Council meeting.

**Exhibit A**

TOWN OF CHESAPEAKE BEACH WATER RECLAMATION TREATMENT PLANT

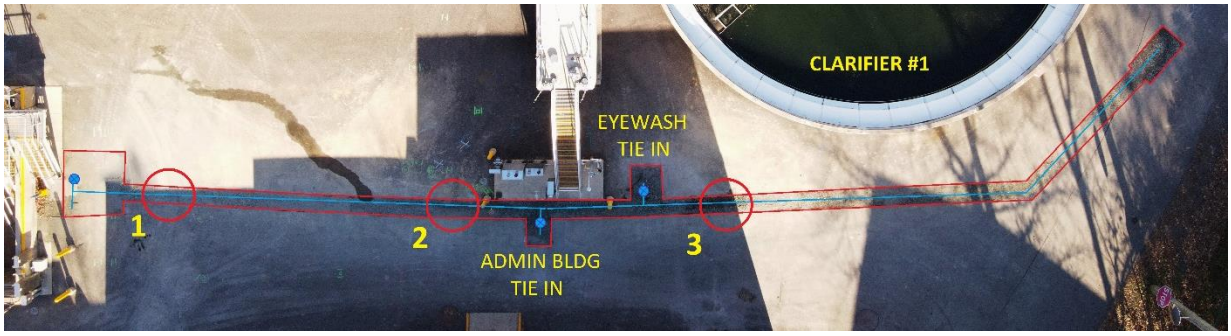
To: Holly Wahl, Town Administrator
From: Josh Stinnett, CWRTP Superintendent
Date: December 4, 2023
Re: Water Main Replacement

Holly,

As of November 29th, 2023 the water main replacement work, approved by the Town Council on November 16th, 2023, has been completed. The following is a detailed report of the day-to-day work and observances of the existing mainline condition as relating to the water main leak identified several months ago that prompted the leak detection work culminating in the current project.

The work schedule for Taylor Utilities consisted of workdays starting at 7:00 a.m. and ending at 3:00 p.m. during the regular work week. Work was started on November 17th, with no work being performed on November 21st due to rain, and no work on November 23rd to 24th for the Thanksgiving holiday. This resulted in six total workdays for the completion of the water main replacement. There is one more day planned for paving, to be performed approximately one month from now to allow for the settling of material and ensure there are no problems with the current installation.

The area of work was adjacent to Clarifier #1 proceeding along the front of the Administration building to a point just before the PACL station, where previous work had been performed to install a tee and valve. During this work three (3) locations were identified that may have been a source(s) of the water leak identified. These are labeled as 1, 2, and 3 in the picture below.




*Picture 1 Extent of Work with Possible Leak Locations*

During this period water was isolated at the valve installed by Taylor Utilities on October 23rd, 2023, located closest to the water meter. The Administration Building and Laboratory were fed from a temporary water service feeding from the Solids Handling building, and the Headworks was fed from a temporary water service from the Return Activated Sludge (RAS) building.

## November 17, 2023

Work began with saw cutting of the pavement performed by WRTP Staff using the Town of Chesapeake Beach public works asphalt saw. Taylor Utilities excavated the location of the second valve installed November 1st, 2023. This valve was removed, to be used elsewhere in the project, and the new water main was tied into the 4”

Hymax coupling[1] utilized for the installation of the valve. New 4" ductile iron pipe (DIP), with Sure Stop gaskets[2], was installed along the run of the existing main line, with the old pipe being removed and inspected. A 4" 1/8 bend was installed to follow the run of the old pipe. A concrete restraint was poured behind the fitting, in addition to Mega-Lug glands used on the bend[3]. 40' of 4" DIP was installed with all excavations backfilled at the end of the day.

## November 20th, 2023

Work began with saw cutting of the pavement performed by WRTP Staff using the Town of Chesapeake Beach public works asphalt saw. Taylor Utilities excavated from the point they ended work on November 17th and continued to a point just before the Methanol Station. Based on the ENR Project Record Drawings, it was expected to find a 4" tee from previous services. This was not found with the assumption that it had been removed during the ENR project.

In this area, a sump pipe used for site dewatering in one of the previous projects was found. This pipe was near the water main, and a 4" PVC compression coupling was installed on the 4" existing water main at this point (see location 3 in Picture 1 on p.1 and Picture 2 below). This would appear to be a repair to the water main, possibly due to damage when the sump pipe was installed. This assumption is based on the piping configuration following excavation. The compression coupling was used in conjunction with a glue coupling (see Picture 3). This is a common means to repair a damaged portion of a pipe.

*Picture 2 Sump pipe and Compression Coupling*

*Picture 3 Compression Coupling Removed*

[1] Hymax couplings are a type of compression repair coupling used to connect two ends of pipe.
[2] Sure Stop gaskets are used to further restrain bell and spigot pipe at the point that one pipe end (spigot) is connected to another pipe (bell). These are typical for this project.
[3] Concrete restraint (kickers) and Mega-Lugs are two means of joint restraint to ensure that a pipe does not move and possibly fail as a result of changes in pressure in the pipe. Mega lugs are typical for all MJ fittings in this project.

The 1 ½" feed for the eyewash/emergency shower for the Methanol Station was located, and temporarily capped to be tied in once the water main was completed. 60' of 4" DIP was installed with all excavations backfilled at the end of the day.

## November 22, 2023

Work began with saw cutting of the pavement, for the remainder of the run of pipe to be installed. performed by WRTP Staff using the Town of Chesapeake Beach public works asphalt saw. Taylor Utilities excavated from the point where they ended work on November 20th. The excavation was performed along the front of the Methanol Station, with the 3" feed for the Administration building located and capped to be tied in once the water main was completed. A 4" mechanical joint (MJ) tee was installed at this point with the intent of installing a 4" valve for isolation of the Administration building feed in the future.

Just past the Methanol Station was an area of expected congestion due to multiple lines and electrical duct banks. Test pitting was performed along this area, with two (2) electrical duct banks being found crossing the proposed path of the water main. One crossed perpendicular to the trench at roughly 2' depth and a thickness of ~ 1.5'. The other duct bank crossed the trench diagonally at a depth of ~.75' and a thickness of ~2', with one end just above one edge of the lower duct bank. Further test pitting located a 1" PVC conduit for the plant site lighting crossing perpendicular to the trench at a depth of ~ 1.25', and a 4" DIP for the sludge press feed crossing diagonally at a depth of 3.5'. Town of Chesapeake Beach Public Works assisted by utilizing their hydro-excavating trailer to clear the soil from under the two duct banks, locating a second 6" DIP pipe under the diagonal duct bank crossing perpendicular to the trench at a depth of ~ 4'.

*Picture 4 Duct Banks and Piping*

While the duct banks were being excavated, a large volume of water was released from under the perpendicular duct bank (see Picture 1 location 2 on p.1). There was no clear source of this water. At this point the existing water main had traveled under the concrete pad of the Methanol Station, and was not excavated and removed.

When the trench was cleared, it was identified that the pipe could not be installed due to a "belly" in the casting for the perpendicular duct bank and further restricted by the 6" DIP pipe under the diagonal duct bank. This duct bank was for the routing of electrical cables before the ENR project and is no longer in use. WRTP Staff did not want this duct bank removed as it could be used in the future should there be a need for it to be reused. Concrete was removed from the bottom of the perpendicular duct bank providing sufficient room to install the new pipe while keeping the duct bank in location and sufficiently intact.

20' of 4" DIP was installed with a portion of the excavation being backfilled, and a steel plate installed over the location of the end of the pipe.

## November 27, 2023

Taylor Utilities excavated from the point where they ended work on November 22nd to the area of prior work adjacent to the PACL station. At the PACL station excavation was required to be performed primarily by hand due to the presence of two duct banks over the water main. A Hymax coupling had been installed to tie in the prior work to the existing water main at the time that the tee was installed. This was located between the two duct banks and was to be replaced with a 4" MJ sleeve for the tie-in of the new main.

During the previous work, an unidentified 1" SCH 80 PVC pipe had been located making a 90º turn and traveling in line with the existing water main. This line was not identified on any set of plans available to WRTP Staff, and it was not clear as to what it was used for (water, electric, signal, etc.). During the new work, this was excavated and found to make a turn down toward the main and encased in concrete (See Picture 1 Location 1 on p.1 and Picture 5 below).

*Picture 5 Unidentified 1" Water Service*

The existing water main was removed to a point just before the concrete encasement and a camera was passed up the water main. A 1" pipe was observed inserted into the water main at the approximate location where the 1"

pipe made its turn into the concrete. It was assumed that this was a water service for the original lab before the ENR upgrade and was likely abandoned. The line was cut out of the trench and an electrical fish tape was passed up the line towards the Administration building on the end where the lab is located. This line was traced using a line locator and found to terminate adjacent to the building. Due to the concrete poured around this tap, Taylor Utilities was unable to clear the concrete with the equipment they had on hand and would deliver a heavy jackhammer to break up this concrete on November 28th.

Along this trench, the connection for a pre-existing hydrant, that had been damaged and paved over during the ENR upgrade, was abandoned in place and not tied into the new water main.

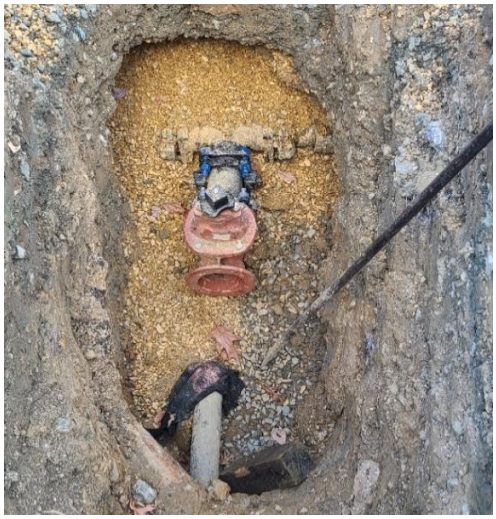
40' of 4" DIP was installed with a portion of the excavation being backfilled, and a steel plate installed over the location of the end of the pipe.

## November 28, 2023

Taylor Utilities utilized a jackhammer attachment for their backhoe to break up the concrete encasement around the 1" tie-in for the Administration building identified on November 27th. Upon removal, not all parts of the tie-in were able to be recovered. Based on the fittings discovered, this would be the most likely location of the leakage identified through the meter readings. Since this tie-in appears to have been abandoned, it was not planned to be reconnected.

The 4" Hymax fitting previously used to connect the new tee and valve from prior work performed on November 13th, was removed and replaced with a 4" MJ sleeve to complete the final tie-in of the water main. ~10' of 4" DIP was installed and all excavations were backfilled.

Excavation and prep work was performed for the 3" Administration building tie-in, including the installation of a 4" gate valve (see picture 6 below). Due to the mismatch of the actual pipe and the ENR Upgrade Record drawings showing a 4" PVC tie-in, and the visual observation of 2" pipe through the slab in the Administration building. additional fittings were required to make the tie-in of the 4" valve to the 3" SCH 80 PVC. These fittings were to be received on November 29th.



*Picture 6 Administration Building Tie-In*

The eyewash/emergency shower was tied in using a saddle installed on the main. The line was tapped, and copper was used to feed into a curb stop valve. The copper was tied into the PVC using a copper tube size (CTS) x iron pipe size (IPS) compression coupling (see picture 7 below).

*Picture 7 Eyewash/Emergency Shower Tie In*

Steel plates were installed over the two tie-in locations as it was requested that they remain open during pressure testing upon expected completion on November 29th.

## November 29, 2023

Taylor Utilities completed the tie-in of the Administration building. Due to difficulty with sourcing of 3" MJ fittings, it was decided that the line would be reduced to 2" to match the feed located in the building. A 4" x 2" MJ tapped plug was installed in the 4" valve installed on November 28th. A 2" brass nipple was installed in the plug, and a 2" Hymax coupling was used to tie to 2" SCH 80 PVC, then a 2" x 3" reducer was glued onto the existing 3" SCH 80 PVC line feeding the Administration building.

The line was charged by opening the valve near the meter, with the eyewash and Administration building tie-ins open. No leaks were observed on the two tie-ins. The two tie-ins were isolated and a pressure gauge was installed in the basement of the Headworks. The valve at the meter was shut off and the pressure was observed over the remainder of the day, while backfill of the two tie-in pits was performed. Over 5 hours, the pressure drop was 1 PSI.

As a point of reference, before the repairs, the pressure drop was observed to be >40 PSI in one minute. It would appear that the water main leak has been resolved. Tie-ins to the eyewash and Administration building were turned on, with the isolating valve in the building and at the eyewash remaining off. Feed to Headworks was isolated to allow for a period of observation of flows over the next two days.

**December 1, 2023**

Meter data was collected for the period from November 29, 2023, through December 1, 2023. Upon review of this data, there was no consumption at night and only a little consumption during the day which correlated to water usage in the RAS building for washing down following cleaning of the pumps.

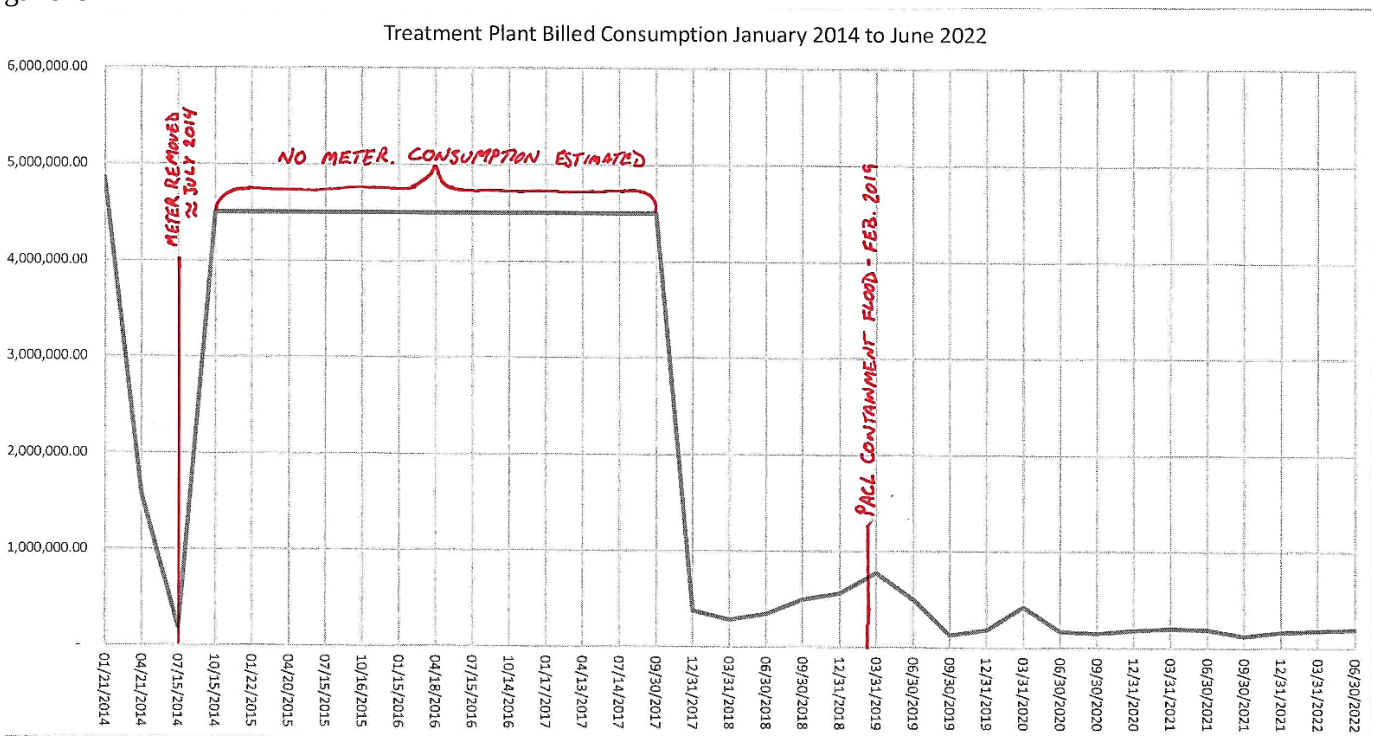
At this point, the water main was flushed and all building services were returned to normal.

Taylor Utilities has been in contact with WRTP Staff regarding the completion of the paving work, and this will be planned for sometime later in December or January, once any settling of the trench line occurs.

I am awaiting invoicing from Taylor Utilities, and will process the invoices once received. I will keep you posted regarding the total costs incurred for this project. To date, work for the leak chasing has cost $41,734.56 and has been processed for payment through PO # 2024-01687. This does not include work performed for the water main replacement.

Readings are being taken of the subtraction meters for each building/device in the Plant, and a comparison of these consumptions will be made with consumption recorded from the primary water meter, and ideally an estimate of future consumption may be able to be established.

At this time, I feel confident in saying that the leak has been addressed. Based on what I saw through this project, this leak may have been occurring for a very long time (likely before ENR). Consumption prior to ENR appears to have been in the millions of gallons per quarter, and following ENR that reduced to hundreds of thousands of gallons




*Picture 8 Treatment Plant Billed Consumption 2014 to 202*

Looking at the graphed meter consumption over time, it would be very easy to assume that the new consumption was accurate and did not appear to show a leak. Without questioning the consumption, and further researching the hour-to-hour consumption, this leak may have continued without being addressed.

**Town of Chesapeake Beach**
**Treasurer's Report**
Town Council Meeting
*December 2023*

***Current Activities*:**

- FY23 annual audit is complete and final reports were distributed to Town Council last week, as well as posted publicly on the Town website.
    - Similar to prior years, FY23 budget amendments will be brought forward to Town Council in January to account for audit results and ending balance true-ups.
- FY24 2nd Quarter utility bills will be mailed to property owners on Monday, January 15th, with payment due 2/14/24. Penalties will be applied to outstanding accounts on 2/15/24 and late notices will be mailed.
    - New fixed sewer charge - $50 per EDU was implemented in FY24 Q1 and bills are reflective. Additional information on changes to the Town's FY24 Utility Rates can be found at bit.ly/cbsewerrates.
- *FY25 Budgets*
    - The FY25 budget process and planning is underway.
    - Fund budgets will be reviewed with Town Council during the upcoming Work Sessions.

***ARPA Funding Status*:**

**Reconciliation of Funds Allocated from ARPA Reimbursement**

| | |
|---|---|
| 5,943,338 | Total funds awarded |
| *(200,000)* | Food insecurities & food pantry services - GF |
| *(100,000)* | Calvert Library Foundation - GF |
| *(92,186)* | Storm Drain Replacement - GF |
| *(371,834)* | Property Acquisition - GF |
| *(750,000)* | Saddle Replacements - UF |
| *(500,000)* | Meter Replacement - UF |
| *(350,000)* | Fishing Creek Wet Well - UF |
| **3,579,318** | **Remaining Funds** |
| | |
| 764,020 | *Total - General Fund* |
| 1,600,000 | *Total - Utility Fund* |

Messick & Associates
Consulting Engineers,
Planners, Surveyors
& Landscape Architects

7 Old Solomons Island Road • Suite 202 • Annapolis, MD 21401

(410) 266-3212 • Fax (410) 266-3502 • www.messickandassociates.com

**Town of Chesapeake Beach**

**Engineer's Report 12-14-23**

From: Messick Group, Inc (MGI)
Wayne A. Newton, P.E

Below is the monthly update of projects and upcoming action items to be completed by our office:

**Richfield Station:**

Action: No Change from last month. M&A attended a meeting on site with the owner, and his attorney, along with Holly Wahl, Todd Pounds and Jay Berry. This meeting was intended to address steps required to provide update sureties for the yet to be completed work as well as remedial work identified by the Town. The developer is completing cost estimates to update the sureties for Town review. Once those estimates are approved, the developer will provide updated sureties and will begin repairing the current deficiencies.

**261 Sidewalks:**

Action: M&A prepared a revised RFP document in accordance with an updated RFP version provided from SHA. Waiting for additional approvals from SHA to proceed with the RFP.

**Heritage:**

Action: M&A attended a conference call with the developer and the bank to conform all outstanding letters of credit receive maintenance sureties. We are waiting for final as-builts and documents from the developer to process the acceptance and place the project into maintenance.

**Kellams Field:**

Action: M&A is working with Calvert County to gain approval of the Grading Permit. Final bid documents for RFP release for the tot lot and storm drain are complete. M&A is finalizing the Grading Permit Approval. MDE is ready to issue the wetlands license and approval once the County issues the grading permit.

**WRTP UV Protection RFP**

Action: Project complete and in operation. M&A providing support through the warranty period.

**Water Park**

Action: M&A working on preparing an RFP to request statements of qualifications from design/build firms who specialize in aquatic design.

Messick & Associates
Consulting Engineers,
Planners, Surveyors
& Landscape Architects

7 Old Solomons Island Road • Suite 202 • Annapolis, MD 21401

(410) 266-3212 • Fax (410) 266-3502 • www.messickandassociates.com

**Water Reclamation Plant Headworks**

Action: M&A working with McCrone in reference to wet well design options due to inconclusive concrete core testing. The design draft is delayed by the need to find additional storage volume. McCrone is moving forward with a remote Wet well which will provide grit removal and allow a bypass of the existing wet well as needed. The team decided to avoid the expansion of the existing wet well due to un-verifiable subsoil conditions.

Messick, Holly & Josh Stinnett met with MDE staff and Moonshot Missions to review funding options.

**Route 261 Pedestrian Path**

Action: Messick is completing the 30% design documents for SHA review and request for funding.

**Old Bayside Water Tower**

No Change from last month. Messick performing intermittent settlement analysis of the tower footings. October re-testing found no apparent settlement.

**Water Reclamation Plant Pump Replacement**

Messick is working with plant staff to review RAS pump replacement requirements. The design team created and calibrated a design model for the pump replacement project. A performance spec has been sent to several manufacturers to provide data into their pumps ability to meet the specifications for this application.

# Calvert County Sheriff's Office
# Twin Beaches Patrol

Date: December 5, 2023

To: Sharon Humm

From: Sergeant Stephen Moran

Re: Sheriff's Office Report-Chesapeake Beach

In November of 2023, the Sheriff's Office handled 209 calls for service in Chesapeake Beach. This is up from 198 calls in October of 2023.

Twin Beach deputies had 782 self-initiated (patrol checks = 703, follow-up investigations = 5, traffic stops = 74)

Twin Beach deputies received 198 calls for service by other means (citizens, alarm companies, etc)

Call Breakdown for the 198 calls, we handled:

- **Destruction of Property**
  - **11/14/23 – Destruction of Property – Erie Ave – Vehicle egged, victim wished no further.**
  - **11/20/23 – Destruction of Property – St. Andrews Drive – Vehicle Windshield broken – 1 suspect identified, under investigation**
- **Trespassing**
  - **11/9/2023 – Trespassing – E. Chesapeake Beach Rd – Unfounded, advice given.**
- **DUI/DWI**
  - **11/22/2023 – Twin Beach Library – Traffic stop, DUI, 1 arrested.**
- **Assault**
  - **11/20/2023 – Domestic Assault – E Street – All parties wish no further, advice given**
  - **11/17/2023- Domestic Assault – Harrison Blvd, 1 arrest.**
  - **11/18/2023 – Verbal Domestic – Hart Ln – Parties wish no further, Advice given.**
  - **11/30/2023 – Domestic Assault – Bayside Rd – 1 arrest.**
- **Theft**

- **11/05/23 – Motor Vehicle Theft - E. Chesapeake Beach Rd – Vehicle Recovered in area**
- **11/13/23 – Motor Vehicle Theft – 12th St – 1 arrest**

- **Miscellaneous**
  - **11/7/2023 – Death investigation – Forest Ridge Trail**
  - **11/8/2023 – Motor Vehicle Crash – 260/261 – Juv unlicensed driver charged on youth report**
  - **11/13/23 – Domestic – Elm Street – Mental health issues with daughter – All parties advised**
  - **11/15/23 – Warrant Service – 31st st at Bay Ave – Traffic stop, subject had multiple warrants – 1 arrested**
  - **11/22/23 – Fraud – Bayside Rd – Credit card fraud, no suspect information.**
  - **11/22/23 – Fraud – Chesapeake Village Blvd**
  - **11/26/23 – Domestic – Gordon Stinnett – Both parties advised verbal only**
  - **11/30/2023- Burglary – Bandshell Dr – UNFOUNDED**
  - **11/29/23 – Check Welfare – Fastop – Female complaining of head pain, refused medical**
  - **11/30/23 – Check Welfare – Fastop – Female taken for Emergency Petition**

# November 2023 Calls for Service Chesapeake Beach

| Call Type | Month | Year | Call Type | Month | Year | Call Type | Month | Year |
|---|---|---|---|---|---|---|---|---|
| 911 Hang Up | 12 | 299 | Firearms Complaint | 0 | 3 | Relay | 2 | 11 |
| Abandoned Vehicle | 0 | 6 | Fireworks Complaint | 0 | 0 | Robbery | 0 | 1 |
| Accident | 9 | 86 | Found Property | 0 | 12 | Search Warrant | 1 | 4 |
| Alarm | 11 | 74 | Fraud | 3 | 17 | Sexual Assault | 0 | 2 |
| Alcohol Violation | 0 | 0 | Harassment | 3 | 17 | Sex Offender Registry | 0 | 0 |
| Animal Complaint | 3 | 27 | Illegal Dumping | 0 | 0 | Special Assignment | 8 | 51 |
| Assault | 0 | 13 | Industrial Accident | 0 | 2 | Stalking | 0 | 0 |
| Assist Motorist | 8 | 72 | Indecent Exposure | 1 | 2 | Stolen Vehicle | 2 | 4 |
| Assist Other Dept | 1 | 28 | Intoxicated Person | 0 | 1 | Summons Service | 5 | 65 |
| Assist Sick/Injured | 3 | 42 | Kidnapping/Abduction | 0 | 0 | Suspicious Person | 3 | 38 |
| Attempt to Locate | 25 | 178 | Loitering | 0 | 1 | Suspicious Vehicle | 4 | 37 |
| Burglary | 0 | 5 | Lost Property | 0 | 0 | Tampering with MV | 0 | 0 |
| CDS Violation | 0 | 3 | Loud Party/ Music | 0 | 9 | Telephone Misuse | 0 | 0 |
| Check Welfare | 14 | 110 | Mental Subject | 5 | 18 | Theft | 0 | 31 |
| Conservor of Peace | 1 | 15 | Missing Person | 1 | 11 | Traffic Complaint | 9 | 79 |
| Destruction of Property | 0 | 27 | Neighborhood Dispute | 0 | 5 | Traffice Control | 36 | 223 |
| Death Investigation | 0 | 4 | Notification | 1 | 4 | Traffic Enforcement | 1 | 34 |
| Disorderly | 9 | 81 | Parking Complaint | 1 | 53 | Trespassing | 4 | 38 |
| Domestic | 12 | 83 | Person with Weapon | 0 | 0 | Unauthorized Use MV | 0 | 0 |
| Escort | 0 | 1 | Police Information | 7 | 115 | Unknown Problem | 0 | 5 |
| Eviction | 0 | 6 | Protective/Peace Order | 3 | 22 | Violation Protective Order | 0 | 3 |
| Fight | 1 | 11 | Prowler | 0 | 0 | Warrant Service | 0 | 10 |
| | | | | | | Total Calls | 209 | 2096 |

| | Month | Year | | Month | Year | | Month | Year |
|---|---|---|---|---|---|---|---|---|
| DUI Arrest | 1 | 10 | CDS Arrest | 0 | 6 | Other Arrest | 5 | 57 |
| Civil Marijuana Citations | 0 | 4 | Non Fatal Overdose | 0 | 5 | Fatal Overdose | 0 | 0 |
| Patrol Checks | 703 | 6712 | Traffic Stops | 74 | 684 | Follow Ups | 5 | 77 |

**** Notes ****

Deputies assigned to the Twin Beach Patrol handled 98 calls outside of the Twin Beach Patrol Area in this month.
(These calls include off duty responses, calls handled to and from work, special events, overtime assignments, special unit assignments, calls while working a shift, etc. The Computer Data System has no way of classifying the on shift or off shift status of an officer when handling a call for service.)

# November 2023 Calls for Service North Beach

| Call Type | Month | Year | Call Type | Month | Year | Call Type | Month | Year |
|---|---|---|---|---|---|---|---|---|
| 911 Hang Up | 3 | 123 | Firearms Complaint | 0 | 1 | Relay | 2 | 16 |
| Abandoned Vehicle | 0 | 3 | Fireworks Complaint | 0 | 0 | Robbery | 0 | 0 |
| Accident | 7 | 34 | Found Property | 3 | 15 | Search Warrant | 0 | 0 |
| Alarm | 5 | 29 | Fraud | 0 | 3 | Sexual Assault | 0 | 0 |
| Alcohol Violation | 0 | 1 | Harassment | 2 | 11 | Sex Offender Registry | 0 | 0 |
| Animal Complaint | 4 | 23 | Illegal Dumping | 0 | 10 | Special Assignment | 1 | 32 |
| Assault | 0 | 4 | Industrial Accident | 0 | 0 | Stalking | 0 | 0 |
| Assist Motorist | 0 | 26 | Indecent Exposure | 0 | 1 | Stolen Vehicle | 0 | 1 |
| Assist Other Dept | 1 | 4 | Intoxicated Person | 0 | 4 | Summons Service | 8 | 46 |
| Assist Sick/Injured | 4 | 27 | Kidnapping/Abduction | 0 | 0 | Suspicious Person | 1 | 21 |
| Attempt to Locate | 12 | 78 | Loitering | 0 | 3 | Suspicious Vehicle | 1 | 10 |
| Burglary | 0 | 1 | Lost Property | 0 | 3 | Tampering with MV | 0 | 0 |
| CDS Violation | 0 | 1 | Loud Party/ Music | 0 | 4 | Telephone Misuse | 0 | 0 |
| Check Welfare | 7 | 67 | Mental Subject | 0 | 5 | Theft | 0 | 16 |
| Conservor of Peace | 0 | 5 | Missing Person | 0 | 6 | Traffic Complaint | 2 | 20 |
| Destruction of Property | 1 | 16 | Neighborhood Dispute | 0 | 4 | Traffice Control | 0 | 1 |
| Death Investigation | 0 | 4 | Notification | 0 | 0 | Traffic Enforcement | 9 | 66 |
| Disorderly | 3 | 39 | Parking Complaint | 2 | 21 | Trespassing | 0 | 20 |
| Domestic | 5 | 51 | Person with Weapon | 0 | 2 | Unauthorized Use MV | 0 | 0 |
| Escort | 0 | 4 | Police Information | 3 | 55 | Unknown Problem | 0 | 4 |
| Eviction | 0 | 6 | Protective/Peace Order | 2 | 11 | Violation Protective Order | 0 | 2 |
| Fight | 0 | 2 | Prowler | 0 | 0 | Warrant Service | 0 | 3 |
| | | | | | | | | |
| | | | | | | Total Calls | 88 | 964 |

| | | Year | | Month | Year | | Month | Year |
|---|---|---|---|---|---|---|---|---|
| DUI Arrest | 0 | 2 | CDS Arrest | 0 | 2 | Other Arrest | 4 | 101 |
| Civil Marijuana Citations | 0 | 2 | Non Fatal Overdose | 0 | 2 | Fatal Overdose | 0 | 0 |
| Patrol Checks | 316 | 2768 | Traffic Stops | 56 | 358 | Follow Ups | 3 | 37 |


**November 2023**

Fire = 47
AFA = 6
Brush = 2
EMS Assist = 13
Working Fire = 1
(Chimney, House, Barn, vehicle, ETC)
Hazmat = 0
Investigation = 6
MVA = 1
Helicopter Landing = 2
Service = 16
Water Rescue = 1

Fire Calls dispatched in the Town of Chesapeake Beach = 37
Fire Calls dispatched in the Town of NB = 10

**November Fire Drill: Front-seat Orientation/Scene Management**

Fundraising: Christmas Tree sales

Community Events: Holiday Tasting; Craft Fair


## EMS = 96

Chest Pains = 8
Diabetic Emergency = 0
Fire Standby = 3
Motor Vehicle Accident = 3
Traumatic Injury (Non-MVA) = 19
Overdose = 3
Psychiatric = 3
Abdominal/GI = 7
Respiratory Distress = 15
Seizures = 5
Stroke (CVA) = 2
Unconscious Subject = 7
Other Non-Emergent = 21

**EMS** Calls dispatched in the Town of Chesapeake Beach = 64
**EMS** Calls dispatched in the Town of NB = 32

## December EMS Drill: Special Populations – Pediatric & Geriatric

Passed:
Effective:

**ORDINANCE O-23-24**

**AN ORDINANCE**
**OF THE TOWN COUNCIL OF CHESAPEAKE BEACH, MARYLAND,**
**TO AMEND THE LANGUAGE OF THE ZONING CODE RESTRICTING ONSITE CANNABIS CONSUMPTION ESTABLISHMENTS**

WHEREAS, Chesapeake Beach, Maryland (the "Town") is a municipal corporation of the State of Maryland, organized and operating under a Charter adopted in 1963, in accordance with Article XI-E of the Constitution of Maryland and the Local Government Article of the Annotated Code of Maryland; and

WHEREAS, The Town has a Zoning Code that has adopted zoning regulations since 1972 into its Town Code; and

WHEREAS, The Town Council desires to amend the Zoning Code as it relates to stores that sell or distribute Cannabis.

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF CHESAPEAKE BEACH THAT:

The zoning code for Chesapeake Beach is amended to specify that no business may operate an onsite cannabis consumption business within the Town limits of Chesapeake Beach.

**Adopted this _____ day of _____, 2023.**

**CHESAPEAKE BEACH, MARYLAND**

_____
Patrick J. Mahoney, Mayor

_____
L. Charles Fink, Council Vice-President

Passed:
Effective:

_____
Valerie L. Beaudin, Councilwoman

_____
Margaret P. Hartman, Councilwoman

_____
Lawrence P. Jaworski, Councilman

_____
Gregory J. Morris, Councilman

_____
Keith L. Pardieck, Councilman

To: The Honorable Mayor and Town Council From: Holly Wahl, Town Administrator

Subject: Pocket Park Naming
**Date: December 12, 2023**

---

## I. BACKGROUND:

Per Chapter 196 “PARKS AND PUBLIC AREAS” of the Town Code

## II. PUBLIC PARK:

A PUBLIC PARK is defined by the Town code as— An area or structure owned or operated by the Town of Chesapeake Beach or another public entity and which is designed for the recreational use of the public and which is designated as a public park in this chapter. Public parks are subject to additional regulations specific to each park, as provided in subsequent articles of this chapter.

Article I of Chapter 196 defines restrictions on camping, fires, motorized vehicles, restricted areas, glass containers, hunting, removal of plant life, smoking, and vaping. Subsequent articles in the chapter designate public spaces as Parks, name the Park and provide regulations for how the space will be operated per an ordinance of the Town Council.

## III. POCKET PARKS:

The Town recently completed three pocket parks for public enjoyment in the Town. The mayor, with input from the Town’s Walkable Community Advisory Committee, has the following names for Town Council consideration and discussion.

**Kellams Pocket Park (3825 Gordon Stinnett Ave:** A walkway to the Kellams complex recreational facility on the northern corner of the Kellams complex. The proposed name is **"Buc’s Corner”** in honor of the Beach Buccaneers.

**29th Street Pocket Park (the eastern end of 29th Street):** A waterfront platform for rest and enjoyment equipped with a viewing scope. The proposed name is **"Shisler Park”** in honor of Dr. Shisler along with a street sign entering the park along 29th street that says **“Favret Way”** in honor of Councilman Derek Favret.

**B Street Overlook (7429 B Street)**: A waterfront overlook park for rest and enjoyment on the southern side of Town equipped with a viewing scope and native plantings. The proposed name is **"Old Campgrounds Park."**

**ORDINANCE O-23-25**

**AN ORDINANCE OF THE TOWN COUNCIL OF CHESAPEAKE BEACH, MARYLAND, NAMING THREE PUBLIC PARKS "BUCS CORNER," "SHISLER PARK," "OLD CAMPGROUNDS PARK" AND TO ESTABLISH "FAVRET WAY."**

WHEREAS, pursuant to Md. Code Ann., Local Gov't. Article, § 5-202, Chesapeake Beach ("the Town") has the authority to adopt such ordinances as it deems necessary to assure the good government of the Town; protect and preserve the Town's rights, property, and privileges; and preserve peace and good order; and

WHEREAS, the Town of Chesapeake Beach is authorized to establish and maintain public parks and other recreational facilities; and

WHEREAS, the provisions of Chapter 196 Article a shall apply to all public parks, public venues, and restricted property in the Town.

WHEREAS, the Town desires to name three public parks, "Bucs Corner," "Shisler Park," "Old Campgrounds Park" and establish "Favret Way."

Section 1. NOW THEREFORE BE IT ORDAINED AND ENACTED by the Town Council of Chesapeake Beach that Town Code, Chapter 196, "Parks and Public Areas", be amended to add:

(1) "Bucs Corner" a pass through from 26th street to the Kellam's complex located on the northern point of 3825 Gordon Stinnett Ave. Chesapeake Beach, MD is a designated public park of the Town;

(2) "Shisler Park" located on the eastern point of 29th Street is a designated public park of the Town; and

CAPITALS : Indicate matter added to existing law

(3) "Favret Way" located on the eastern point of 29th Street names the walkway to "Shisler Park."

(4) "Old Campgrounds Park" located at 7429 B Street Chesapeake Beach, MD is a designated public park of the Town.

AS CERTIFIED by their signatures below, the members of the Town Council affirm that this Ordinance was introduced at the Town Council meeting held on the 21st day of December, 2023 that a public hearing was held on the __th day of _____, 2024, and that a vote was taken in accordance with Section C-309 of the Town Charter. The vote of the Council was tallied and ____ votes of approval and ____ votes of disapproval were cast. The resulting majority of the Council _____ (ap*proved or disapproved)* the passage of this ordinance this _____ day of _____, 2024. This Ordinance shall become effective 20 days after approval by the Mayor or approved by the Council over the Mayor's veto or seven days after the last required publication.

**CHESAPEAKE BEACH, MARYLAND**

_____
Patrick J. Mahoney, Mayor

_____
L. Charlie Fink, Council Vice President

SMALL CAPITALS : Indicate matter added to existing law

_____
Valerie Beaudin, Councilwoman

_____
Margaret Hartman, Councilwoman

_____
Lawrence P. Jaworski, Councilman

_____
Gregory J. Morris, Councilman

_____
Keith L. Pardieck, Councilman

SMALL CAPITALS : Indicate matter added to existing law

# CHARTER AMENDMENT RESOLUTION CAR-23-1

## A RESOLUTION OF THE TOWN COUNCIL OF CHESAPEAKE BEACH, MARYLAND, AMENDING THE CHARTER OF THE TOWN OF CHESAPEAKE BEACH TO PROVIDE FOR THE CLARIFICATION OF A REFERENDUM OF AN ORDINANCE.

WHEREAS, Chesapeake Beach (the "Town") is a municipal corporation in the State of Maryland, organized and operating under a Charter adopted in 1963, in accordance with Article XI E of the Constitution of Maryland; and

WHEREAS, pursuant to Md. Code. Ann., Local Gov't Art., Division II, Title 4, Subtitle 3, the Town Council has the authority to amend the Town's Charter, in accordance with the procedures set forth therein; and

NOW, THEREFORE, BE IT RESOLVED by the Town Council of Chesapeake Beach, Maryland, that Section C 311(b), Referendum of the Charter of Chesapeake Beach is hereby amended as follows:

C 311(b) – The paragraph is to remain the same except the words "who voted in the last proceeding regular Town election" are deleted.

**BE IT FURTHER RESOLVED**, that upon the effective date of the amendments set forth herein, any provisions of the Charter of Chesapeake Beach that are inconsistent with the provisions of this Charter Amendment Resolution are hereby repealed.

**BE IT FURTHER RESOLVED,** that pursuant to Md. Code Ann., Local Gov't Art., § 4-304, the Mayor of the Town of Chesapeake Beach shall give notice of this proposed amendment by posting an exact copy of the same at the Town Hall, for a period of at least forty (40) days following its adoption. In addition, a fair summary of this proposed amendment shall be published in a newspaper of general circulation in the Town of Chesapeake Beach not less than four (4) times, at weekly intervals within a period of forty (40) days after the adoption of this resolution.

**BE IT FURTHER RESOLVED,** that pursuant to Md. Code Ann., Local Gov't Art., § 4-304, the charter amendment proposed by the Town Council for the Town of Chesapeake Beach, Maryland shall become and be considered a part of the municipal Charter, according to the terms of this charter amendment resolution, in all respects to be effective and observed as such, upon the fiftieth (50th) day after being so ordained or passed, unless on or before the fortieth (40th) day after being so ordained or passed, there shall be presented to the Town Council, or mailed to it by certified mail, a petition for referendum meeting the requirements of Md. Code Ann., Local Gov't Art., § 4-304(d).

AS **CERTIFIED** by their signatures below, the members of the Town Council affirm that this Resolution was introduced at the Town Council meeting held on the ____ day of _____, 2023 and that after a public hearing on the _____day of _____, 2024, a vote was taken in accordance with Town's regular procedures for the passage of resolutions. The vote of the Council was tallied and _____ votes of approval and _____votes of disapproval were cast. The resulting majority of all members of the Town Council ***(approved/disapproved)*** the passage of this Resolution this _____ day of _____ 2024. This Resolution shall become effective in accordance with its terms.

**CHESAPEAKE BEACH, MARYLAND**

_____
Patrick J. Mahoney, Mayor

_____
L. Charles Fink, Council Vice President

_____
Valerie L. Beaudin, Councilwoman

_____
Lawrence P. Jaworski, Councilman

_____
Gregory J. Morris, Councilman

_____
Keith L. Pardieck, Councilman

_____
Margaret P. Hartman, Councilwoman

**RESOLUTION R-23-4**
**A RESOLUTION OF THE TOWN COUNCIL OF CHESAPEAKE BEACH TO ADOPT THE 2023 CHESAPEAKE BEACH COASTAL RESILIENCY PLAN**

**WHEREAS**, on August 21, 2021, the Town Council of Chesapeake Beach approved the framework for the completion of a Coastal Resiliency Plan funded through a Memorandum of Understanding with the State of Maryland Department of Natural Resources; and

**WHEREAS**, the Technical Advisory Committee on Coastal Resiliency drafted a plan, and the Steering Committee on Coastal Resiliency coordinated public engagement sessions on details on the plan; and

**WHEREAS**, the Mayor and Town Council adopts the 2023 Chesapeake Beach Coastal Resiliency Plan, approved by the Coastal Resiliency steering committee on December 11, 2023, with amendments.

**NOW THEREFORE BE IT RESOLVED** that the Coastal Resiliency Plan should be used to provide guidance, wherever possible, in decisions relevant to flooding and sea level rise.

_____
Patrick J. Mahoney, Mayor

| | |
|---|---|
| _____ | _____ |
| L. Charles Fink, Council Vice President | Valerie L. Beaudin, Councilwoman |
| _____ | _____ |
| Margaret P. Hartman, Councilwoman | Lawrence P. Jaworski, Councilman |
| _____ | _____ |
| Keith L. Pardieck, Councilman | Gregory J. Morris, Councilman |

To: The Honorable Mayor and Town Council From: Holly Wahl, Town Administrator

Subject: Coastal Resiliency Plan
**Date: December 13, 2023**

---

## I. BACKGROUND:

The organizational and technical approach to the Town of Chesapeake Beach Coastal Resiliency Plan was developed jointly with the Town of North Beach in coordination with the Maryland Department of Natural Resources, Chesapeake, and Coastal Services through a 100% grant funded project with reporting requirements. The jurisdictions coordinated in the simultaneous production of mapping used in this report which documents the projected impacts of future seal level rise. While this Plan's strategies and recommendations were developed through a planning process specific to Chesapeake Beach, they reflect an understanding of the effects of sea level rise on North Beach and compliment North Beach's own efforts to adapt to sea level rise.

The Coastal Resiliency plan is drafted by the Coastal Resiliency Task Force, a technical advisory committee of staff, consultants and experts with public input and comment facilitated through the Coastal Resiliency Steering Committee, in accordance with the Memorandum of Understanding (MOU) and Framework approved by the Town Council in August of 2021.The Coastal Resiliency Steering Committee is comprised of Town residents, Town business owners and property managers who are impacted by flooding and sea level rise. The coastal resiliency plan provides strategies and recommendations that are intended to guide the Town as it adapts to sea level rise and an increased incidence and severity of flooding. The plan was prepared by the Town of Chesapeake Beach using federal funds from the Office for Coastal Management at the National Oceanographic and Atmospheric Administration (NOAA). To view the grant MOU with the State, please click here. The overarching recommendations in the plan are based on a technical review of Town infrastructure impacted by flooding and sea level rise and citizen input on problem areas. The plan's goal is to make recommendations on short- and long-range plans to address Coastal Resiliency and does not bind the Town Council to future projects.

A draft coastal resiliency plan was completed in June of 2023. This plan was reviewed by the Town Council in July of 2023 and December 11, 2023, in a Town Council work session.

The Town used the draft plan to receive public comment from citizens, businesses and the Town's Planning and Zoning Commission over the course of the last several months. Comments have been reviewed by the Coastal Resiliency Steering Committee and changes were incorporated based on the comments received.

## II. STATUS OF PLAN COMPLETION:

**Step 1:** Town Council approves the framework for the compilation of the Coastal Resiliency Plan in August of 2021.
**Step 2:** Starting in January of 2022, the Town sends notices to community members about the formation of the Steering Committee, inviting participation and engaging Coastal Community HOA leadership, forming the

Coastal Resiliency Steering Committee (citizen led) and the Coastal Resiliency Task Force (staff led technical team).
**Step 3:** March 2022 to June 2023 the Town holds public meetings and engagement sessions (to include Chair Jeff Foltz holding information sessions at events such as Taste the Beaches) seeking citizen input on problem areas. Public input is used in coordination with technical input to include GIS flood mapping with an overlay of all Town critical infrastructure. The input received is used to complete a draft coastal resiliency plan. The State issues an extension on the due date for the plan to June 2023.
**Step 4:** In June of 2023 the Town submits the draft plan to the State to stay in compliance with grant requirements.
**Step 5:** In July of 2023 the Town Council reviews the draft plan.
**Step 6:** In July to December 2023 additional public comment was sought, received, and posted publicly. Input includes discussion of the plan at the Planning and Zoning Commission level and direct input from Planning Commission members on the plan through individual comments.
**Step 7:** On December 11, 2023, the Coastal Resiliency Steering Committee approved the plan forwarding it to the Town Council for final adoption**.**
**Step 8**: In December of 2023 the Town is to submit the final plan to the state to remain in compliance with the grant funding requirements and to be eligible for further funding on future projects.

To view the plan with changes made per the Coastal Resiliency Steering Committee, please see the link here. Please note this draft is a live document; therefore, the formatting is not completed. All changes from the Steering Committee will be input into a clean final document for Town Council adoption.

## III. RECOMMENDATION:

It is recommended that the Town Council adopt the Coastal Resiliency Plan by resolution and forward a copy of the resolution and final plan to the State to remain in compliance with the grant funding requirements and to be eligible for future funding.

Exhibit A "Marked Version of the Coastal Resiliency Plan"
Exhibit B "Clean Version of the Coastal Resiliency Plan"

Exhibit A



# Coastal Resiliency Plan

## Town of Chesapeake Beach

A Flood and Sea Level Rise Action Plan

Financial assistance in the preparation of this document was provided by the federal Coastal Zone Management Act of 1972 as amended as administered by the Office for Coastal Management, National Oceanic and Atmospheric Administration, with local grant administration by the Maryland Department of Natural Resources, Chesapeake and Coastal Service.

# Acknowledgments

## Chesapeake Beach Mayor and Town Council

Pat "Irish" Mahoney, Mayor
L Charles Fink, Council Vice President
Valerie Beaudin
Larry Jaworski
Greg Morris
Keith Pardieck
~~L Charles Fink~~
Margaret Peggy Hartman

## Steering Committee on Coastal Resiliency

Jeff Foltz, P.E. Chairman
Larry Jaworski, P.E., CC-P, Town Councilman
~~Keith Pardieck, Town Councilman~~
Wesley Donovan
Robert Munro
Phil Pfanschmidt
Grant Soderstrom
Dave Kimelblatt

**Commented [GU1]:** Keith asked that his name be removed.

## Technical Advisory Committee on Coastal Resiliency

Larry Jaworski, P.E., CC-P, Town Councilman
Jay ~~Barry~~Berry, ~~Chief, Director of Public Works~~ Public Works Administrator
Christopher N. Jakubiak, AICP~~, Town Planning and Zoning Administrator~~
Wayne Newton, P.E., Town Engineer
Josh Stinnett, Superintendent, Chesapeake Beach Water Reclamation Plant (CBWRTP)
Holly Kamm Wahl, MBA, Town Administrator

---

Special thanks to Sasha Land, Coastal Resilience Program Director, Maryland Department of Natural Resources, Chesapeake and Coastal Services, and Laurent McDermott, GISP and Mary Buffington, GISP with the Eastern Shore Regional GIS Cooperative, Salisbury University.

# Table of Contents

# Chapter 1 Introduction

## Introduction

This plan ~~is about~~ addresses coastal resiliency in the Town of Chesapeake Beach. Its strategies and recommendations are intended to guide the Town as it adapts to sea level rise and an increased incidence and severity of flooding in accordance with a Memorandum of Understanding (MOU) between the Town Council of the Town of Chesapeake Beach and the State of Maryland Department of Natural Resources entered into August of 2021. As part of the MOU the Town Council approved a framework to complete the plan with two (2) task outcomes; I) flood risk mapping and analysis and, II) flood and sea level rise action plan~~.~~

The Coastal Resiliency plan was drafted by the Coastal Resiliency Technical Advisory Committee. Public input and comment were facilitated through the Coastal Resiliency Steering Committee. The Coastal Resiliency Steering Committee is made up of Town residents, Town business owners and property managers who are impacted by flooding and sea level rise~~.~~. The overarching recommendations in the plan are based on a technical review of Town infrastructure impacted by flooding and sea level rise and citizen input on problem areas. The plan's goal is to make recommendations on short- and long-range plans to address Coastal Resiliency and does not bind the Town Council to future projects.~~ ~~This Plan is strictly conceptual and does not in any way obligate the Town to proceed with any course of action. This plan may be revised as environmental conditions or changes occur. Public hearings will be held before any formal action is taken by the Town Council.

~~It was~~The Coastal Resiliency plan is prepared by the Town of Chesapeake Beach using federal funds from the Office for Coastal Management at the National Oceanographic and Atmospheric Administration (NOAA). The organizational and technical approach to the project was developed jointly by the neighboring towns of Chesapeake Beach and North Beach in coordination with the Maryland Department of Natural Resources, Chesapeake and Coastal Services. The jurisdictions also coordinated in the simultaneous production of mapping used in this report which documents the projected impacts of future seal level rise. While this Plan's strategies and recommendations were developed through a planning process specific to Chesapeake Beach, they reflect an understanding of the effects of sea level rise on North Beach and compliment North Beach's own efforts to adapt to sea level rise.

## General Context and Purpose

Chesapeake Beach is vulnerable to very severe flooding associated with hurricanes, tropical storms, and nor'easters; the latest such major event was Isabel in 2003[1]. It made landfall in North Carolina's Outer Banks and followed a path northwestward through western Maryland. While far removed from the Chesapeake Bay, its winds drove a ~~4 to 5 foot~~4-to-5-foot storm surge against the western shore that swamped coastal communities including the Twin Beaches (Chesapeake Beach and North Beach). Buildings were destroyed, beaches were washed away, bulk~~l~~heads, piers, and revetments were

[1] Hurricane Isabel was just one of 39 recognized flooding events between 1996 and 2016 reported by the National Climate Data Center and one of 56 tropical storm events impacting Maryland between 1980 and 2015. (Calvert County All-Hazard Mitigation Plan, 2017).

damaged, and MD Route 261, including along its frontage with the North Beach Volunteer Fire Company, was inundated and impassible[2].

The Town is also vulnerable to nuisance flooding. Such flooding is not necessarily associated with named storms and sometimes results simply from the mechanisms of the tides and excessive rainfall in a short amount of time. As recently as October 20200~~2~~ a high tide breached shoreline revetments and flooded residential lots close to the Bay. It entered the Fishing Creek Marina area via the Town's public boat landing. It overloaded local storm drainage systems and flooded public streets including MD Route 261. These severe events disrupt daily activities, impede travel, and add to the standing pools of water at lower elevations along roads, in parking lots, and at Kellam's Field.

Global sea level rise is related to the release of carbon dioxide emissions into the atmosphere, the resulting warming of the oceans, and melting of glaciers and polar ice sheets[3]. It is an ongoing phenomenon and is projected to continue well beyond 2100. The combination of global sea level rise and land subsidence in coastal Maryland has raised mean high tide in the Chesapeake Bay. Historic tracking at the tide gauge at Solomon's Island records an increase of about 0.15 inches per year, or 1 foot of rise, between 1937 and 2019. Sea level rise is accelerating, and current projections indicate the Town should plan for the Bay to rise another 2.4 feet by 2050[4]--that is, the Bay at Chesapeake Beach would be 2.4 feet, or 28.8 inches, higher than it was in 2000.

Over the very long term, the rise of the Bay is projected to largely reclaim much of Town's low lying areas built on and around tidal wetlands. In so doing the remaining marshes that so define the Town's natural setting are projected to increasingly become open water at their lower elevations, and at higher elevations, to continue to migrate into developed places. With the passage of time more and more of the Town will become vulnerable to flooding. With higher water levels in the Bay, future storm surges will arrive at the Town's shoreline feet above their predecessors and logically bring more water and hazard potential. A rising Bay will place a larger area of Chesapeake Beach at risk, including existing neighborhoods, housing complexes, cultural and recreational assets, and essential infrastructure.

*Figure 1: 2003 Photo Following Hurricane Isabel. MD Route 261 (Bayside Road) at the entrance to the Volunteer Fire Company, looking north).*

[2] Photos like the one on this page showing the aftermath of Hurricane Isabel in Chesapeake Beach are available at: https://forums.somd.com/media/albums/2003-hurricane-isabel-chesapeake-beach-north-beach.246/page-2

[3] In the Chesapeake Bay region sea level rise is also a function of ongoing Ice Age related land subsidence as the earth's plate, like a seesaw, falls in the east and rises in the northwest still feeling the effects of the glacier retreat.

[4] Sea Level Raise, 2018 Projections, Maryland Commission on Climate Change.

**The purpose of this Plan is to provide a coordinated and ~~long~~ termlong-term approach to becoming more resilient to the effects of rising water levels and the flooding associated with it**.

To be clear, this is not a master plan or an engineering design plan, intended to direct specific resources toward specific or known design challenges in the short term. Sea level rise is not that kind of problem, and the environmental and cultural setting of Chesapeake Beach is not well suited to one design solution. There will be a time for project based plans and designs.

Rising sea level presents an ongoing community development and conservation challenge; one whose challenges and opportunities will evolve and thus cannot be fully understood here and now in 2023. The resources of current and multiple future generations will be called upon to address sea level rise and learning memory will be achieved. Therefore, this Plan is also meant to provide a forum of sorts -- an organizational and policy framework -- where solutions to what will be an evolving challenge can be refined, implemented, extended, or even corrected as needed, as residents, businesses, and property owners interact with the Town and its partners like the Town of North Beach, the Maryland Department of Natural Resources, and NOAA.

## Coastal Resiliency

This Plan is about building coastal resiliency. By coastal resiliency, we mean the ability of the Chesapeake Beach community to adapt to the risks posed by sea level rise. At its heart, this is a plan for the physical adaptation of the Town to the threat of sea level rise.

Resiliency, as a term used in hazard planning generally, is more comprehensive than this plan aims for. For context, the United Nations Office of Disaster Risk Reduction refers to resiliency as the ability of a community exposed to hazards to resist, absorb, accommodate to, and recover in a timely and efficient manner including by preserving and restoring essential structures and function. This and other definitions of "resiliency" embrace notions of hazard preparedness, emergency management, rescue, and rebuilding. While this Plan touches on these elements, its focus is on physical adaptation to the risk of living along the Chesapeake Bay in areas projected to become inundated. This is less about emergency response and recovery and more about long range community planning, civil engineering, and landscape and building design.

In the future as projects are implemented there will be ongoing opportunities to further incorporate the multifaceted themes of resiliency. For example: An engineering design for a sea-wall might incorporate flexibility to readily allow strengthening at such time that live loads increase; or a storm drain upgrade might be re-routed to convey water away from its previous discharge point or be designed with much larger inlets for holding water, as a means for avoiding the mechanical pumps necessary to discharge into the Bay against projected higher tides. Resiliency must permeate all plans and designs that flow from this Plan.

# Related Plans and Studies

There are three local plans particularly relevant to coastal resiliency in Chesapeake Beach that have influenced this Plan. These are described below[5].

## Calvert County, Maryland All-Hazard Mitigation Plan

In 2017 Calvert County adopted the All-Hazard Mitigation Plan, which includes useful information on past flood events and flood risk assessments including in Chesapeake Beach and North Beach. While the County Plan does not evaluate in a detailed way sea level rise and future local vulnerabilities, its research and findings have informed this Plan.

The Plan sets goals for mitigating flood hazards with special mention of concerns that towns share with the County, namely protecting critical infrastructure and facilities that residents rely on and protecting and sustaining natural resources such as tidal wetlands that function naturally to mitigate flooding damage. With respect to flood hazard mitigation planning, the County Plan incorporates input provided by the Town of Chesapeake Beach and recommends the following specific mitigation actions for the Towns of Chesapeake Beach and North Beach:

- Identify natural resources that provide mitigation such as wetlands, (riparian) buffers, etc. and make them a priority for preservation.
- Continue to ensure compliance with stormwater management regulations.
- Give high priority to undeveloped floodplain areas for preservation.
- Maintain zoning ordinance provisions for protection of all hazard areas.
- Continue a community-based stormwater management program consisting in routine inspections and debris removal.

## Chesapeake Beach Nuisance Flood Plan: 2000-2025

In 2020, the Town adopted a Nuisance Flood Plan per Maryland statues which require jurisdictions that experience nuisance flooding to adopt, publish, and update a plan once every five years[6]. As defined in State law, "nuisance flooding" is high tide flooding that causes public inconvenience. Such flooding is not a product of major storm events and typically lasts only for several hours before abating.

The plan is a short-term plan intended primarily to build awareness at the local level of certain recurring flood areas, to improve the capacity of local governments to notify and warn the public about flood hazards, and to consider steps to mitigate potential hazards. The Town's Nuisance Flood Plan also provides guidance on how to document nuisance flood occurrences and sets four priorities:

- Ensure existing structures are resistant to flood-related damage, where possible.
- Create awareness of floodplain hazards and protective measures.
- Protect critical facilities.
- Prepare and update stormwater management plans.

[5] Also relevant is the Calvert County, Maryland All-Hazard Mitigation Plan, adopted by the County in 2017, which also covers the Towns of Chesapeake Beach and North Beach.

[6] See Maryland Senate Bill 1006 from the 2018 Session of the Maryland General Assembly which amended parts of the Transportation and Natural Resources Articles of the Annotated Code of Maryland and included revision to the Coast Smart laws related to the siting and design of infrastructure in areas vulnerable to sea level rise inundation.

The Town's Plan identifies three primary locations for nuisance flooding: (1) the lowest lying parts of the Kellam's recreational area and Fishing Creek Marina, (2) the northern edge of the wetland complex west of MD Route 261 and south of First Street (North Beach) (South Creek), and (3) Town-owned property along the tidal wetlands south of Harbor Road, running parallel to and west of Deforest Drive. These same areas are among the first projected to be inundated in the decades due to sea level rise.

## Chesapeake Beach Comprehensive Plan

In April 2022, the Town adopted a new Comprehensive Plan that extensively addressed sea level rise through land use and natural resource recommendations. The Plan used mapping to establish the extent of existing and projected flooding, and designated parts of the Town that are especially vulnerable. It also made specific land use and zoning recommendations to eliminate or minimize development potential in areas projected to be inundated with a 2.1 foot sea level rise as well as remaining forests and forested steep slopes. The Town Council codified these latter recommendations into law through amendments to the Zoning Ordinance and official Zoning Map in 2022. Lastly the Comprehensive Plan recommended that this Coastal Resiliency Plan be prepared, and it adopted overall principles to guide local planning for sea level rise over the long term, as follows:

- The low-lying land, where Fishing Creek meets the Chesapeake Bay, is the very heart of Chesapeake Beach, encompassing the recreational assets and natural resources that have shaped the Town's heritage. Continued use of this area and even redevelopment is not necessarily incompatible with projections of increased flooding.

- The Town's natural environment itself can be a guide to how to manage rising water levels in Chesapeake Beach. The Town's marshes absorb storm surges and hold back floodwaters. The Town's remaining woodlands soak up rainwater reducing the severity of flooding. The Town's topography shows that the heart of Chesapeake Beach was built on and around the natural estuary of Fishing Creek.

- A long-term response to a rising Chesapeake Bay can be positive and aligned with a vision of harmonizing land with water. In a coastal town, built as a tourist destination, rising water levels can be an asset and an opportunity to build upon the Town's heritage.

- Lands that were "made" through the filling in wetlands, are the most quickly threatened by sea level rise. Allowing space for water to reclaim parts of these areas and for wetlands to migrate within them can help recreate nature's role in holding back flood waters and buffering storm surges.

- Unplanned and uncoordinated efforts to raise the elevation of the land or build structural flood defenses including seawalls, raised bulkheads, shoreline revetments, etc. are counterproductive to ongoing efforts to coordinate an effective strategy to address sea level rise. Such measures must only be undertaken in a coordinated way consistent with an adopted plan.

- Rising water levels expand the area that is vulnerable to flooding. As the Bay rises, some areas that do not flood today are predicted to flood in the future and some areas that do in fact flood today are predicted to experience more frequent and severe flooding events.

There are other important parts of the Chesapeake Beach Comprehensive Plan that have shaped this Plan and speak to coastal resiliency including the conversion of Kellam's recreational complex into a blue-green recreational and flood management area, the introduction of small parks, the preservation

of resource lands, promoting walkability and public accessibility especially to the waterfront, and eliminating new residential development potential from vulnerable areas.

## Community Engagement

As part of this project the Town created the Steering Committee on Coastal Resiliency. The Steering Commission conducted four public work sessions, and three public informational events. All the events were live-streamed and recorded. Once the analysis and findings were assembled but before recommendations were developed, the Committee held a round of neighborhood based work sessions: one at the Volunteer Fire Company and the other at the Town Hall. Notices and invitations to each event were mailed to all residents located within the localized flood hazard areas. The Town also created a webpage for the project where documents, maps, and notice were published.

# Chapter 2 Existing Conditions

## South Creek and Fishing Creek, Chesapeake Bay Inlets

South Creek and Fishing Creek are tributaries to the Chesapeake Bay. The watersheds they drain extend far beyond the Town's borders. Their natural estuaries are among the features of Town most vulnerable to sea level rise. South Creek drains the coastal plain north of MD Route 260 including North Beach and forested lands west of the Twin Beaches. It discharges to the Bay through a tidal estuary shown in the photo below. The Chesapeake Beach Water Reclamation Plant, North Beach Volunteer Fire Company, and the Seagate residential communities are located in this estuary. MD Route 261 crosses through it.

Fishing Creek drains a mostly forested and rural landscape and meets the Bay in the traditional

*Figure 1~~2~~. Birdseye view of the South Creek estuary.*

maritime center of Chesapeake Beach. At one time, the Creek's natural estuary covered what is today the Courtyards at Fishing Creek Apartments and Townhouses, Chesapeake Beach Waterpark, Northeast Community Center, Fishing Creek Marina, and all of Kellam's Recreation Complex.

*Figure 2~~3~~: Birdseye view of the Fishing Creek estuary.*

To better understand the complexity of the Fishing Creek estuary, note the marshland grass symbols in Figure ~~4~~ 4. They are indicating the historic extent of tidal wetlands on the west side of MD 261 north

and south side of Gordon Stinnett Avenue. Most of this has been replaced by parkland, parking lots, building sites, and streets.

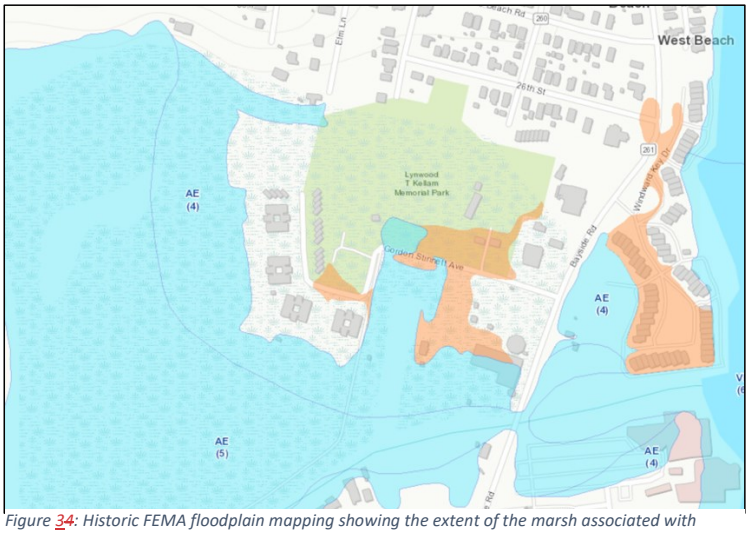



*Figure ~~3~~4: Historic FEMA floodplain mapping showing the extent of the marsh associated with Fishing Creek.*

## Floodplains

The Federal Emergency Management Agency (FEMA) regularly maps floodplains having a 1% chance of flooding in any given year (i.e., the 100-year floodplain). These are shown in Figure 5 below for most of coastal Chesapeake Beach and the North Beach area. In these floodplains, within Town boundaries, Chesapeake Beach regulates building and land development activities through its Floodplain Management Ordinance (Chapter 149 of Town Code).

*Figure ~~4~~5: Mapped FEMA Floodplain, 1% Annual Chance Flood Area.*

Figure 6 below maps the existing 1% Annual Chance floodplain from MD Route 260 north to North Beach. It provides a more detailed view of the northern part of Town and the floodplain associated with South Creek.

*Figure ~~5~~6: FEMA 1% Annual Chance Floodplain.*

The figures below highlight separate flood zones within this above geographic area and show the base flood elevation (BFE). BFE is FEMA's estimate of the elevation of surface water resulting from the "base flood". The base flood is the flood with a 1% chance of being equaled or exceed in any given year. BFE can be thought as the minimum elevation above which a homebuilder must set the first floor to prevent water entering the home during a flood with a 1% annual chance of occurring. Figure 7 shows that the flood zone associated with South Creek has a BFE of 4 feet. Figure 8 shows floodplain that is mapped without a BFE. Figure 9 shows the flood zones along the shoreline from First Street in North Beach to 27th Street is subject to high velocity wave action and has a BFE of 8 feet.

*Figure ~~8~~9: FEMA Flood Zone AO. Base flood elevation is 4 feet.*

*Figure ~~7~~8: FEMA Flood Zone AO. The base flood elevation is not mapped by FEMA.*

*Figure ~~6~~7: FEMA Flood Zone VE, Special Flood Hazard Area. This area is subject to high velocity wave action. Base flood elevation is 8 feet.*

## Wetlands

Most of the Town's floodplain is tidal estuarine wetlands (marsh). These wetlands attenuate flooding, prevent shoreline erosion, improve the water quality of the Bay, and provide habitat for native plants, fish, and wildlife. They protect the existing settlement pattern in the historic center of Chesapeake Beach. Figure  shows the wetlands in Chesapeake Beach.

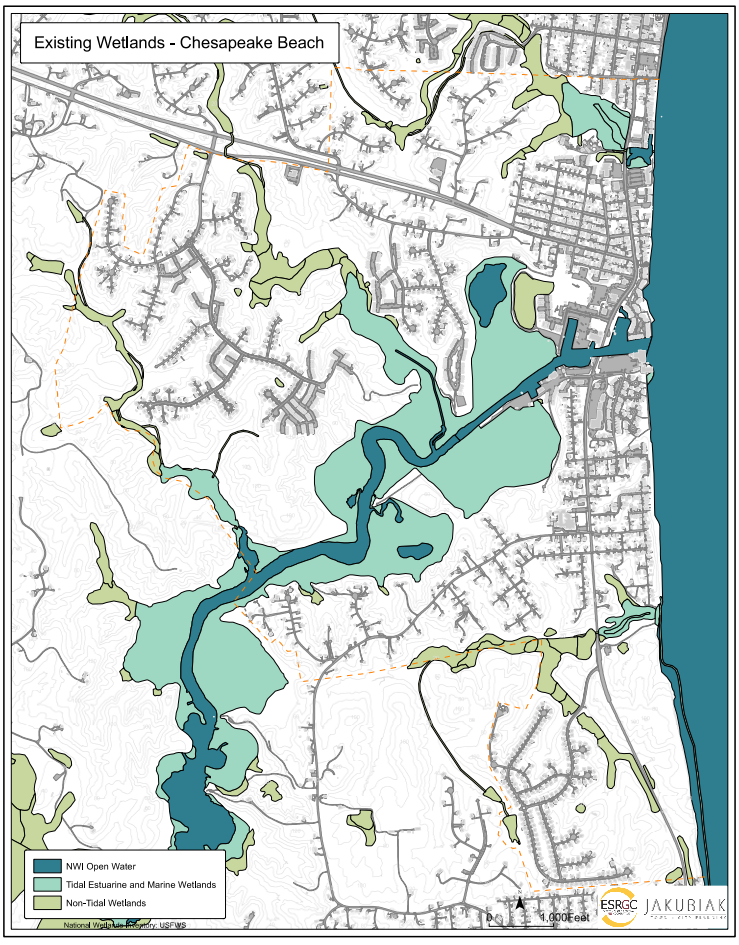



*Figure ~~9~~10: Mapped Wetlands in Chesapeake Beach.*

The dominant wetland in and around Chesapeake Beach is the 92-acre Estuarine and Marine Wetland associated with Fishing Creek. Shown on Figure 10, it's the central green area on either side of Fishing Creek. This defining landscape feature consists of deep-water tidal habitats and marshes in which the bottom is both flooded and exposed by tidal action. It is also among the most scenic type of all natural resources in coastal Maryland. These marshes adjoin forested parcels, including a 200+ acre covenant protected by Forest Interior Dwelling Species (FIDS) habitat north of the Fishing Creek marshlands. Strict enforcement of this covenant and preservation of the forested areas surrounding the Fishing Creek marshlands is an essential element of local flood ~~management~~management.

**Commented [GU2]:** Recommendation: "These marshes adjoin forested parcels, including a 200+ acre covenantprotected
Forest Interior Dwelling Species (FIDS) habitat north of the Fishing Creek marshlands. Strict enforcement of this covenant and preservation of the forested areas surrounding the Fishing Creek marshlands is an essential element of local flood management."

The similar but smaller (12.5-acre) wetland complex of the same type on the north end of Town extends into North Beach and is associated with South Creek (See Figure 2.) Though it is mainly on the western side of MD Route 261, it is associated with the tidal action which is restricted to some extent by the seawall and a flood gate located between the Seagate and Horizons on the Bay housing communities.

Figure 10 also shows that non-tidal wetlands are located near both major tidal marshes. These are generally forested and extend into slightly higher elevations at greater distance from tidal action. The Town's non-tidal wetlands, whether populated by trees or just herbaceous plants, provide vital basins for retaining and filtering rainwater that flows from upland locations. The largest non-tidal wetland in Town is seven acres in size and is actually the Town's dredge disposal site. It separates Kellam's Field and the Courtyards at Fishing Creek from the Town's central tidal marsh. Even more extensive however, are the non-tidal wetland associated with South Creek (which extends northwesterly into North Beach) and along various tributary streams within the Town. These wetlands are mostly forested, and their preservation is an essential element of local flood management.

As sea levels rise, the Town's marshlands are expected to gradually transform into open water and simultaneously grow in response to both higher surface and ground water levels. Which is to say, the wetlands and marshes are dynamic; as they fill with water, they will also migrate and establish themselves where conditions are right for their growth.

## Chesapeake Bay Shoreline

Two-thirds of the Town's 2.4-mile Bay shoreline, from North Beach south to 17th Street, is safeguarded by revetments. A revetment is a permeable wall of stones set at an angle away from the water to absorb the energy of waves and protect against erosion. Only a small section of the Bay's shoreline, at the Rod 'N' Reel Resort, is protected by bulkheading. Except for this small run of bulkhead and developed shoreline, the shoreline is gently sloping and mostly planted in lawn. There are ~~two~~three small private beach areas, one at Windward Key, one at Chesapeake Station and another ~~the other~~ at the Rod 'N' Reel Resort. There are no naturalized or vegetated (living) shorelines or buffer zones in Town except at Brownies Beach and the Randle Cliff Natural Heritage Area.

From 17th Street southward, the shoreline becomes very steep with slopes exceeding 50%. Cliffs are a special type of steep slope, where the face of the slope rises at least 10 feet at a grade of 50% or more[7]. The cliffs extend to Brownies Beach, where the shoreline flattens out again allowing Brownies Creek to flow into the Bay. After leveling out at the Brownies Creek inlet, the shoreline rises steeply again, this time in a naturalized condition and unprotected by revetment. Here the shoreline becomes the Randle Cliffs, which is a dynamic natural landform, continually eroding by force of waves, ground and surface water, and wind.

The Maryland Department of Natural Resources has designated the Randle Cliffs and its associated upland forest a Natural Heritage Area. Its combined geological, hydrological, and biological features are considered among the best in Maryland. Habitats for three threatened / endangered species are found there[8]. The Town has protected the area with its Resource Conservation zoning.


*Figure ~~10~~11: Bay Shoreline in southern Chesapeake Beach.*

## Drainage

Drainage in low lying areas has increasingly become a challenge and the Chesapeake Beach Nuisance Flood Plan: 2000-2025 documented locations throughout the Town where residual standing water follows coastal flooding and/or precipitation events. Figures 12 and 13 show two of those locations.

[7] The tops of these shoreline slopes were subdivided and sold as building lots long before the advent of zoning. Houses and other structures now stand above the Bay, most notably along B Street. Heavy rains in recent years have caused noticeable sloughing and evoked concerns about the natural processes at work shaping the shoreline. Considering this, the Town adopted a Steep Slope Ordinance in 2018 requiring independently reviewed geo-technical studies and special stormwater management planning as conditions for future building activities.
[8] Puritan Tiger Beetle found in the intertidal zone, beach, cliff face and upland forest along Bay shoreline. Red Turtlehead (plant) found in the floodplain and non-tidal wetland areas to the west of MD Route 261. Glade Fern found in the northeast facing ravines and contiguous uplands between and above the ravines in the southwestern part of the area.

*Figure ~~11~~12: Standing Water at the Tot Lot at Kellam's.*

*Figure ~~12~~13: Standing water on Gordon Stinnett Ave.*

There are two areas of Town, however, where major drainage systems are not operating effectively as described below and the effects are more extensive. Both would require updated engineering and significant investment. The solutions to both are integrally tied to this Plan's approach to coastal resiliency.

## Floodgate

The South Creek estuary is partially controlled by a flood gate located between Seagate (on the north) and Horizon's on the Bay (on the south). Between these communities is the eastern section of the estuary's tidal wetland which is separated from the Chesapeake Bay by a floodgate with a revetment and causeway. These features are visible in the photo below, which was taken from the northbound lane of MD Route 261. The open floodgate is in the distant center of the photo. Over time, this wetland has been converting to open water.

The floodgate, with its revetment and causeway, were intended to prevent storm surge from entering

*Figure ~~13~~14: Photo showing the floodgate.*

the wetland and flooding the northern part of Town, including Seagate and MD Route 261[9]. However, the floodgate is in a permanently open position, so it does not operate to prevent tidal flooding. Figure 15 shows that MD Route 261 was inundated by the October 2022 unnamed tidal event that occurred without precipitation.

[9] That is, in the rare occurrence where there is coastal high flooding event without significant precipitation.

During times of precipitation and upland flooding, the open floodgate is intended to allow water to flow out to the Bay thus preventing the back up of water. When there is a major coastal flooding event (like October 2022) or coastal event in combination with a rain storm—a common occurrence--the floodgate system also cannot work which among other things overwhelms the drainage system near the Seagate townhouse community.

*Figure ~~14~~15: View from Sea Gate community along MD 261 frontage looking west toward the sidewalk railing on MD Route 261 which is underwater following the un-named high tide event on October 12, 2022.*

Seagate, which lies on the north bank of the wetland, contains a pumped stormwater system near the intersection of C and 31st Streets. This pump drains a sump area and discharges its water through a storm drain which outfalls about 460 feet to the south into the wetland. Presumably, the water is meant to be held in the wetland where its sediments are allowed to drop out. But, in times of coastal flooding, the water in the wetland is pushed westward over MD Route 261 (or through a culvert) whereupon it eventually moves eastward returning to the sump area to be pumped again into the wetland. This creates a continuous circular pumping scenario.

To avoid this, the drainage infrastructure would need to be re-constructed to pump directly to the Bay. The ultimate design solution for MD Route 261, however depends in large part of how this drainage system is reconfigured.

## 29th Street & Veterans Park

The Bayfront properties between 29th Street and Veterans Memorial Park have traditionally drained into the Bay through a series of storm ~~drain pipes~~drainpipes or wall openings in a bulkhead. The storm drain design for this area, which was implemented, is shown below. It is no longer effective. Note that it extends well west of MD Route 261 into the Middle Subdivision. Some years ago, the Army Corps of Engineers (USACOE) built the current stone revetment structure to protect those properties from

eroding effects of wave action. In doing so, the USACOE raised the level of the structure relative to the homes and yards behind the revetment and did not modify drainage infrastructure.

Over time due to sea level rise and the raised revetment wall, both of which have prevented the


*Figure ~~15~~16: Storm Drain Plan, 1976.*

discharge of water to the ~~Bay, private~~Bay, private property owners and the Town have found it necessary to implement incremental drainage solutions. Storm drains have been re-routed to find low areas to convey water and pipes have been elevated where possible. Also, the storm drain outlet at 28th Street and the Bay was completely plugged to prevent ponding on private property during high tide events. A comprehensive and areawide drainage assessment needs to be undertaken including videotaping the existing drainage system. Detailed mapping is required to determine an optimal method of modernizing the drainage system in light of the sea level rise projected in this Plan.

# Chapter 3 Vulnerable Areas and Assets

## Background

Local sea level is measured at tide gauges in the Chesapeake Bay. The baseline for the sea level projections used in this report is the level recorded in 2000 at the Solomon's Island, Maryland tide gauge. When this report refers to sea level rise, it is referring to the change above the levels recorded at the Solomon's Island tide gauge in 2000. The projections of sea level rise are from the Maryland Commission on Climate Change, Sea-Level Rise Expert Group via the University of Maryland Center for Environmental Science (UMCES). The Commission's publication titled Sea-Level Rise: Projections for

Maryland 2018, is the source for the projections[10]. Pursuant to State law, these projections are to be updated every five years.

## Tolerance for Flood Risk

The UMCES projects sea levels at various "tolerances for risk" and advises how these projections should be used when planning or and designing improvements. Figure 17 shows the projections for three levels of risk tolerance by decade through the year 2150.

This Plan uses maps for projected sea levels in the years 2030, 2050, and 2100 at a "low tolerance for flood risk". Figure 17 shows, for example, that in 2050 sea level is projected to be plus 2.4 feet at the low risk tolerance projection. For comparison, at the medium risk ~~tolerance, the~~tolerance, the projection is plus 2.0 feet. At the ~~high risk~~high-risk tolerance, the projection is plus 1.7 feet. The risk tolerances correspond to the following percent probabilities that sea level will meet or exceed the stated value in a given year:

- High tolerance for flood risk: 17% probability
- Medium tolerance for risk: 1 in 20 chance, or 5% probability
- Low tolerance for flood risk: 1 in 100, chance, or 1% probability

**Tide Gauge:** Solomons Island, MD
**Emissions Pathway beyond 2050:** Stabilized (RCP 4.5)

| Year | High tolerance for flood risk | Medium tolerance for flood risk | Low tolerance for flood risk |
|---|---|---|---|
| 2030 | 0.9 ft | 1.1 ft | 1.3 ft |
| 2040 | 1.2 ft | 1.5 ft | 1.8 ft |
| 2050 | 1.7 ft | 2.0 ft | 2.4 ft |
| 2060 | 2.0 ft | 2.4 ft | 2.9 ft |
| 2070 | 2.4 ft | 2.9 ft | 3.5 ft |
| 2080 | 2.7 ft | 3.3 ft | 4.3 ft |
| 2090 | 3.1 ft | 3.8 ft | 5.0 ft |
| 2100 | 3.5 ft | 4.4 ft | 5.8 ft |
| 2110 | 3.9 ft | 5.0 ft | 6.8 ft |
| 2120 | 4.3 ft | 5.5 ft | 7.8 ft |
| 2130 | 4.8 ft | 6.1 ft | 8.8 ft |
| 2140 | 5.2 ft | 6.7 ft | 9.7 ft |
| 2150 | 5.6 ft | 7.3 ft | 10.9 ft |

*Figure ~~16~~17: Projections of Sea Level Rise, University of Maryland Center for Environmental Science, 2018.*

For coastal planning purposes, University of Maryland Center for Environmental Science and Maryland Department of Natural Resources advise using projections associated with the low risk tolerance for flooding[11]. Using a low risk tolerance effectively means planning for avoidance, resistance, and the relocation of assets when adapting to flooding over time. In using a low risk tolerance, this Plan assumes that sea level rise values given for each year are unlikely to be exceeded in that year. In this way, conservative planning can be done so potentially severe consequences of flooding can be avoided, such as loss of life, public safety hazard, property destruction, and costly repair of infrastructure and buildings.

The low risk tolerance projection is used in this Plan can be explained in this way: there is 1% chance that sea level will be 2.4 feet or higher than the level recorded in 2000. It can also be explained by saying: there is a 99% chance sea level rise will be lower than 2.4 feet. Likewise, for the year 2100, the low risk tolerance projection used in this Plan means that there is 1% chance that sea level will be 5.8 feet or higher than the 2000 level and thus a 99% chance it will be lower than 5.6 feet.

[10] Boesch, D.F., W.C. Boicourt, R.I. Cullather, T. Ezer, G.E. Galloway, Jr., Z.P. Johnson, K.H. Kilbourne, M.L. Kirwan, R.E. Kopp, S. Land, M. Li, W. Nardin, C.K. Sommerfield, W.V. Sweet. 2018. Sea-level Rise: Projections for Maryland 2018, 27 pp. University of Maryland Center for Environmental Science, Cambridge, MD. https://www.umces.edu/sites/default/files/Sea-Level%20Rise%20Projections%20for%20Maryland%202018_0.pdf

[11] Guidance for Using Maryland's 2018 Sea Level Rise Projections, Kate McClure University of Maryland Sea Grant Extension and Allison Breitenother and Sasha Land, Maryland Department of Natural Resources, March 2022.

If the Town were in the position now to design a new residential community, a town hall, a new water reclamation plan, or a fire company, it would adopt a low tolerance for risk for these assets. Each is vitally important and one of the design goals would be to ensure the ~~long term~~long-term viability and safety of the asset or of public safety generally. For that reason, the Town would insist on locating and designing such assets to strictly minimize the threat of hazard. The fact that each asset type is already present in Chesapeake Beach, and located within a flood hazard area, only reinforces the need for conservative planning. In applying a low tolerance for risk, this Plan is aiming to guide adaptation of the town and such assets with the greatest concern for public safety and asset preservation.

By contrast, if the Town were now to design a new park, it would likely use a higher tolerance for risk because a park, in contrast to a fire company, can generally flood without causing major damage. In the future, as the Town and State of Maryland implement the ideas recommended in this Plan, engineers will make specific determinations about relative tolerances for risk. An evacuation route (such as MD Route 261) could be conservatively designed with a low risk tolerance and would ideally be elevated well above base flooding conditions, while a parking lot at the Kellam's Recreational Complex could be designed with a much higher tolerance for risk allowing for routine flooding without impact to public safety.

### A Word About Storm Surge

The mapping used in this Plan shows the projected extent of future "still" water—that is, open water on a typical dry-weather day in the future (2030, 2050 and 2100). The mapping does not incorporate the storm surge associated with hurricanes or nor'easters. Storm surge is the level of windblown water that arrives at the shoreline above the normal tide levels. In Hurricane Isabel (2003), the local storm surge was estimated to be 4 to 5 feet -- that is, the water was 4 to 5 feet above the normal tide level on that day in 2003. When one considers the mapping of open "still" water in this report, it's helpful to layer storm surge on top of that higher sea level to appreciate the extent of future risk. If, for instance, the sea level in 2050 is about 2.4 feet higher than it was during Hurricane Isabel (as projected), a comparable storm surge will arrive at roughly 6.4 to 7.4 feet above the 2003 tide level, rather than at 4 to 5 feet. This gives greater credence to this Plan's decision to use the low risk tolerance for coastal resiliency planning.

## Mapping

The Eastern Shore Regional GIS Cooperative (ESRGC) assisted the Towns of Chesapeake and North Beach with flood analyses and prepared the maps in this Plan. An ESRGC prepared document summarizing its methodology is provided in the Appendix. The ESRGC used the most current (2017) LiDAR topographic mapping data to establish land elevations, meaning that any topographic changes following 2017 were not captured on the maps presented in this report. To address this, the Town surveyed lands in 2022 known to have been raised since 2017 and updated the mapping as needed. The updated maps are not incorporated into this report but were considered in this study, presented at public work sessions, and remain available on the webpage the Town created for public review.

Maps are used in this report to explain existing or projected conditions. They are also provided at a higher resolution for more detailed examination in the Appendices. Maps are provided for the years 2030, 2050, and 2100. For the year 2100, two series of maps were produced. The first series is based on the 2100 projection for sea level rise (RCP 4.5) which assumes global society is able to stabilize carbon emissions following 2050. The second series (RCP 8.5) assumes global carbon emissions

continue to grow beyond 2050[12]. This second scenario shows a greater extent of inundation and flooding than the stabilized emission scenario. Both series of maps were considered in formulating the recommendations of this Plan, but only the stabilized emissions scenario is presented in the body of this document.

The maps contain content that is particularly useful to understanding vulnerability to sea level rise. Figure 18 provides guidance for reading the maps. As noted previously, the maps show the extent of inundation in future years under dry-weather conditions. In other words, the water coverage one could expect to see on a typical dry-weather day. So, as shown in Figure 18, areas marked with the darkest blue color are projected to be open water on a typical dry-weather day.

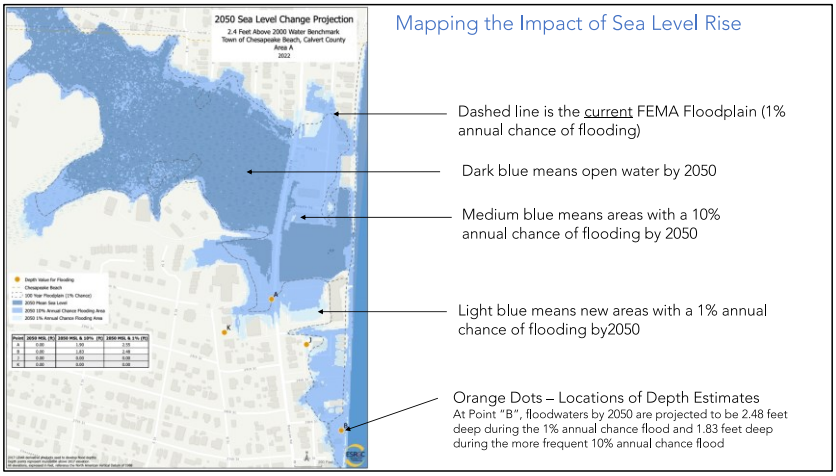



*Figure ~~17~~18: A Guide to the Content on the Sea Level Rise Maps.*

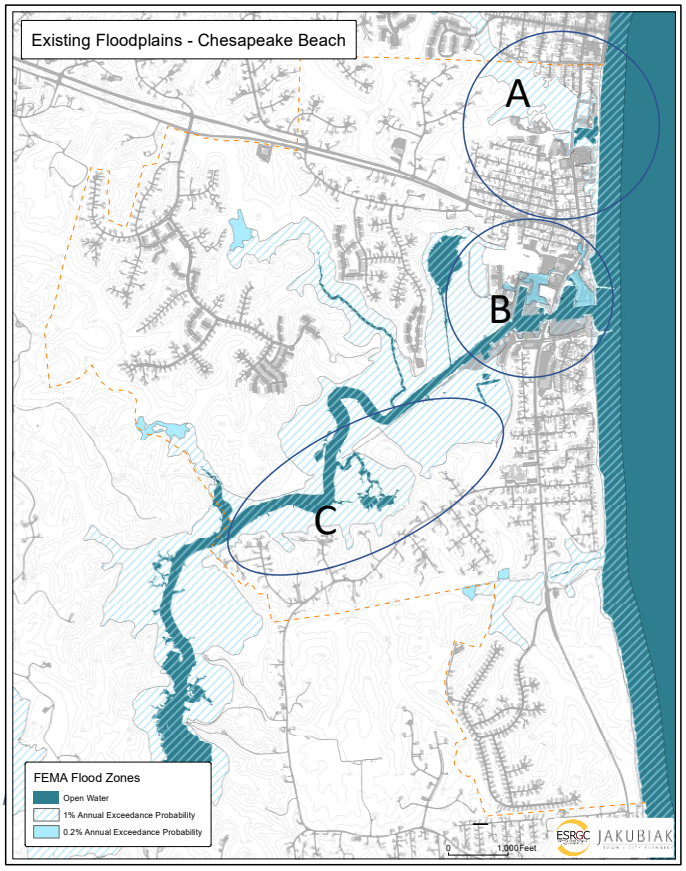
It is important to note that the maps do not show the impacts of storm surges or of heavy rains which would lead to more land being covered in ~~water~~water, at least temporarily. To better understand the increased vulnerability to flooding that the Town's coastal areas will face in the years ahead, the maps also show the existing FEMA 1% annual chance flood area, a projected 1% annual chance flood area, and a projected 10% annual chance flood area. Land contained within 1% annual ~~chance flood~~chance of flooding, would have a one in 100 chance of being flooding in the given year. Land contained within 10% annual ~~chance flood,~~chance of flooding would have a one in 10 chance of being flooding in the given year.

[12] See the aforementioned report, Sea Level Rise, Projection for Maryland, 2018.

## Vulnerability Areas

To allow for detailed examination of the effects of projected sea level rise on neighborhoods, infrastructure, and community assets, this Plan focuses on three subareas within the Town (See Figure 19).

The maps that follow document the extent of future inundation, flooding, and vulnerable community assets within each of these areas. Later in Chapter 4, this Plan's recommendations are also organized by area.



## Area A

Area A extends from about 27th Street north to First Street. It encompasses the South Creek estuary or inlet to the Bay. Shown here is the area in 2030 (with a sea level rise of 1.3 feet), in 2050 (with a sea level rise ~~of 2.4~~of 2.4 feet), and 2100 (with a sea level rise of 5.8 feet. The most dramatic change projected between 2030 and 2050 is the near complete conversion of the marsh to open water. Over time the floodplain would extend both north and south encompassing residential and commercial properties that today are not within the FEMA floodplain.

The community assets shown in the maps are the Chesapeake Beach Water Reclamation Plant (WRP) and the North Beach Volunteer Fire Company (NBVFC). The Sea Gate residential community, consisting of 30 townhouses, is projected to be increasingly vulnerable to flooding in the decades ahead. By 2100 the ~~are~~area South Creek estuary is projected to be fully engulfed in water covering the grounds of Sea Gate and nearby properties.

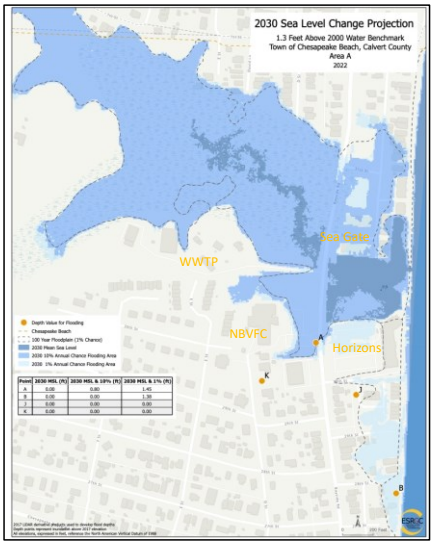



*Figure ~~19~~20: 2030 Sea Level Rise Projection, Area A.*

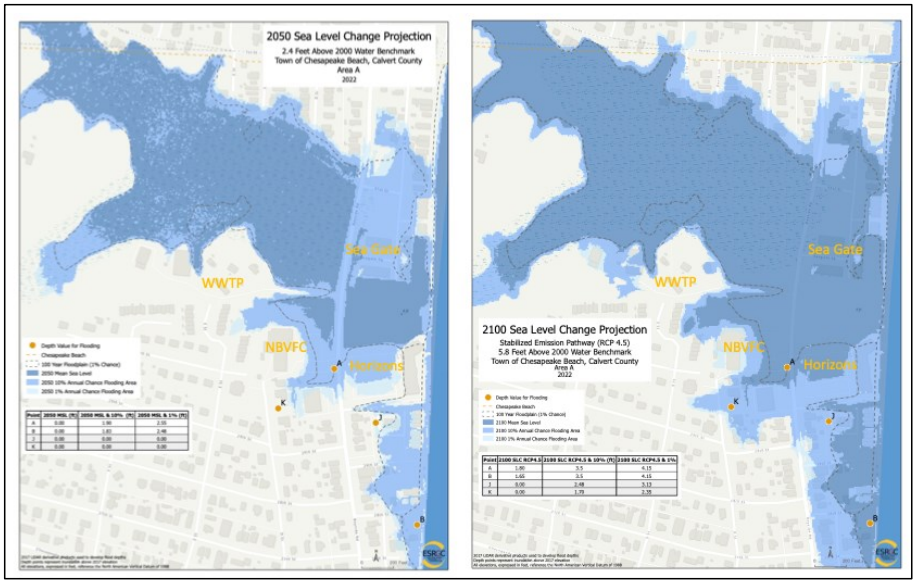



*Figure ~~20~~21: 2050 & 2100 Sea Level Rise Projections, Area A.*

## Area B

Area B encompasses the historic center of Chesapeake Beach and the Fishing Creek inlet to the Bay. Shown here is the area in 2030 (with a sea level rise of 1.3 feet), in 2050 (with a sea level rise ~~of 2.4~~of 2.4 feet), and 2100 (with a sea level rise of 5.8 feet.

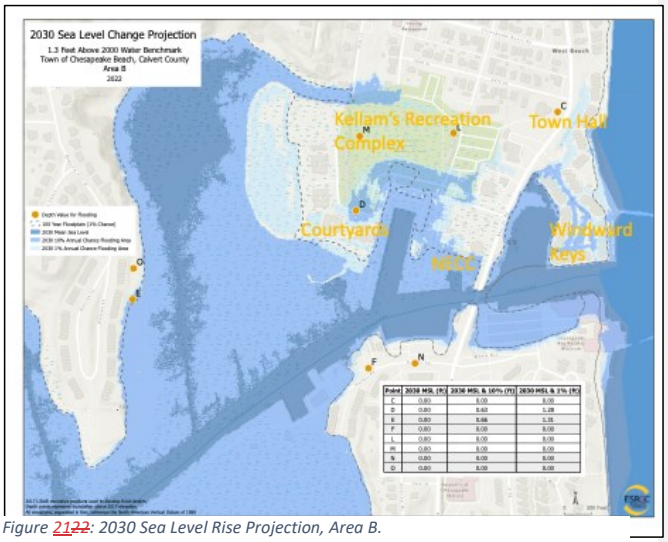



*Figure ~~21~~22: 2030 Sea Level Rise Projection, Area B.*

The community assets shown in the maps of Area A are the Chesapeake Beach Town Hall, the Kellam's Recreation Complex~~, the~~, and the North East Community Center (NRCC). The Chesapeake Beach Waterpark and Public Boat Landing are also located here. The Courtyards at Fishing Creek Townhouses and Apartments (Courtyards) and Windward Key are also located in this area of Town. Both are projected to be increasingly vulnerable to flooding in the decades ahead, the Courtyards especially.

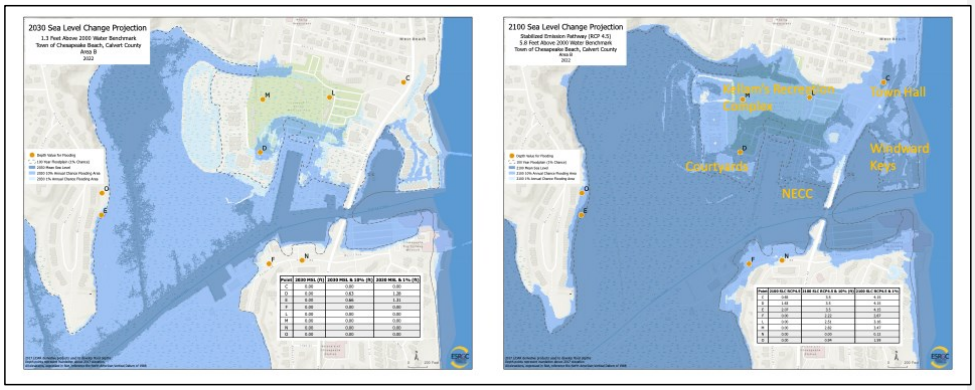



*Figure ~~22~~23: 2050 & 2100 Sea Level Rise Projections, Area B.*

## Area C

Area C encompasses the southern section of the Fishing Creek marsh. Shown here is the area in 2030 (with a sea level rise of 1.3 feet), in 2050 (with a sea level rise ~~of 2.4~~of 2.4 feet), and 2100 (with a sea level rise of 5.8 feet.

Sea level rise in Area C is almost entirely contained within the current FEMA ~~floodplain~~flood plain, through some expansion of the flood plain in lower lying areas is projected over time. This area of Chesapeake Beach is largely wooded and sparsely developed. It is zoned for low density residential development and falls within the Limited Development Area (LDA) of the Critical Area. There are no community assets here and no public streets or utilities are anticipated to be impacted by sea level rise.

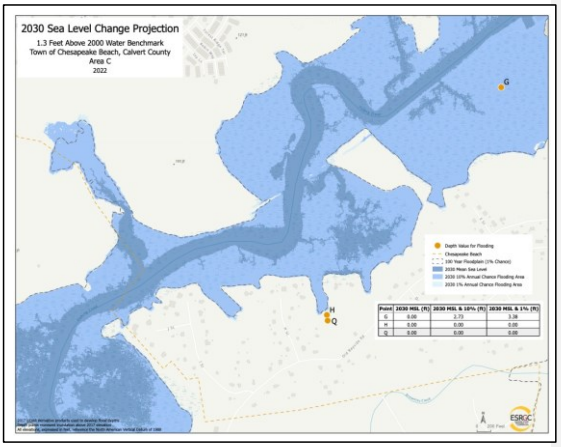



*Figure ~~23~~24: 2030 Sea Level Rise Projection, Area C.*

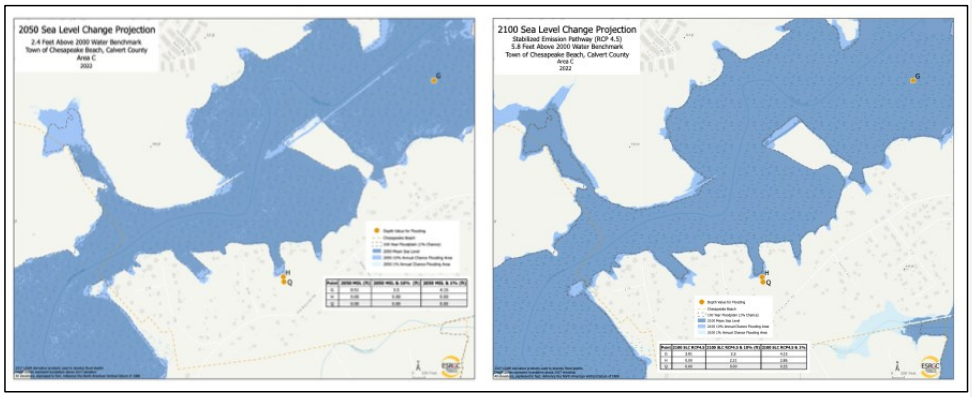



*Figure ~~24~~25: 2050 and 2100 Sea Level Rise Projection, Area C.*

## Summary of Impacts

Housing developments have been built within areas and at elevations which present significant future flood hazard. Circulation within Chesapeake Beach is also vulnerable to multiple day disruptions during both tidal events and major storms. Over the long term, beyond 2050, some streets are also at risk of being permanently inundated as sea level fills low lying areas. This includes MD Route 261 between 27th Street and First Street, several Town owned streets including parts of 31 Street, C Street, D Street, E Street, David Street, and Gordon Stinnett Avenue. A major section of this road is elevated only 2.5 to 3.0 feet above the current sea level and is routinely flooded during 1% annual storm events.

Gordon Stinnett Avenue is the only access route between the Courtyard at Fishing Creek housing community and the Town street system. The Courtyards was established in 1989 under the federal Low Income Housing Tax Credit program (LIHTC) and was constructed on filled wetlands. It provides 76 units for Town households earning below the median housing income. Multiple private community streets are also at risk including those at the Courtyard at Fishing Creek, Windward Key, and Sea Gate.

Essential community facilities are at risk, including the North Beach Volunteer Fire Department, the entrance road to the Chesapeake Beach Water Reclamation Plant, the grounds of the Town Hall, and the Northeast Community Center (which is ~~actually a~~a designated hazard resource center). The entire Kellam's Recreation Complex was constructed on filled wetlands and a large portion sits at, or under, five feet above sea level. The Chesapeake Water Park is a site of significant subsidence as mentioned elsewhere in this report and its ability to function over the longer term, in the absence of ~~reliliency~~resiliency solutions, is at risk due to flooding. The extent of these and other risks is explored further in Chapter 4, Action Plan Strategies and Recommendations.

**Commented [GU3]:** add: in the absence of resiliency solutions

# Chapter 4 Plan Strategies, Recommendations

## Overall Approach

The purpose of this Plan is to provide a coordinated and long term approach to making Chesapeake Beach more resilient to the effects of rising water levels and the flooding associated with it.

This Plan aims to be holistic in its approach. It considers the natural resource systems and the Town's settlement pattern. As documents in this report, the Town developed in a way that placed current and future populations increasingly at risk, mostly within and adjoining the tidal estuaries associated with South and Fishing Creeks. So, this Plan for resiliency is largely about retrofitting those patterns.

Solutions must be comprehensive, flexible, sensible and consensus driven. This plan for coastal resiliency is a plan about embracing the reality of the landscape and its limitations and making Chesapeake Beach safer and more environmentally sustainable, walkable, beautiful, and enjoyable. The solutions that address flood risk most optimally therefore will be solutions that provide other community benefits too.

The overall approach can be broken into two main strategic frameworks. The first is about strategic flood management and sustainable drainage. These recommendations are universally applicable within the Town's coastal areas most notably within lower lying areas at risk of flooding or permanent inundation. The recommendations include changes to the regulations that govern development activities and land use in the floodplain. The second strategic framework is about tactical retrofitting. These recommendations are location-specific and include both policy and project-based proposals. Recommendations are provided for each of the three subareas described elsewhere in this report: Areas A, B, and C.

## Strategic Flood Management and Sustainable Drainage

In order to operationalize the recommendations in this section, the Town must periodically track projected changes in sea level and map the effects of these changes on the landscape. In other words, it must update the maps presented in Chapter 3. The Maryland Commission on Climate Change Commission updates the projections every five years so the Town could periodically select and adopt a sea level rise projections, based on the Commission's published projection. With the new projections in hand, the Town could then revise its geo-spatial mapping and take account of any local topographic changes. The updated mapping would then provide the base for drawing flood hazard zones wherein certain types of regulations would apply.

Tying regulations to consensus projections of sea level rise means the regulations can be reasonably applied in the short term and adjusted over the longer term as changing conditions or improved information warrants. For now, the recommendations that follow reflect this Plan's adoption of the 2.4 foot increase (projected to occur by 2050), and the mapping which derives from that projection, and the 5.6-foot increase (projected to occur by 2100) and the mapping which derives from that.
For guidance to the recommendations that follow, note that when the recommendations refer ~~to the~~to the "2050 Maps" or "2100 Maps" they are referring to the maps in Chapter 3 of this report. The 2050

Maps show areas of open water, areas with a 10% annual ~~chace~~chance of flooding and areas with a 1% annual chance flooding under the assumption that relative sea level is 2.4 feet over the year 2000 baseline. The 2100 Maps show the same geographic areas and the same categories but assume relative sea level is 5.6 feet over the baseline established in the year 2000. Please refer to the maps in the Appendix.

1. Amend the Floodplain Management Ordinance (Chapter 149 of Town Code) to apply flood management regulations to all properties mapped on the 2100 Maps as a Flood Area. The regulations would include among other things applying a required minimum flood protection elevation (FPE or "freeboard"), and requiring flood resistance materials, the elevation of electrical building components, and anchoring of accessory structures. This effectively means broadening the geographic area and expanding the number of properties ~~subject~~subject to floodplain regulations.

2. Amend the Floodplain Management Ordinance to incorporate a higher flood protection elevation (FPE, or freeboard). For all areas mapped in the higher risk 10% Annual Chance Flood Area on the 2100 Maps, the Town should require that development or redevelopment projects incorporate a FPE of at least 4.5 feet. This is 2.5 feet higher than the current 2-foot flood protection elevation required in the Town's Floodplain Management Ordinance. The extra clearance is intended to account for the projected 2.4 feet of sea level rise through 2050. This Plan assumes over time FEMA will continually update its base flood elevation and while the 2 -foot FPE should continue to be adequate generally, all properties mapped as 10% Annual Chance Flood Area, will need to adhere to this new higher standard for freeboard: 2-foot FPE plus at least 2.5 feet.

3. Amend the Zoning Ordinance (Chapter 290 of Town Code) to require that all site plans for any development or redevelopment on properties mapped on the 2100 Maps as Flood Area include certification by a Professional Engineer that all principal buildings have a demonstrated capability to withstand the storm surge associated with the Town's projected sea level rise. Specifically, for the next decade, the certification will need to demonstrate that flood tolerant construction methods would be used appropriate to the projected storm surge assumed with the ~~2.4 foot~~2.4-foot rise. This is the "Isabel plus 2.4-foot test". It takes the Town's experience with the last recorded Hurricane and assumes it arrives on a tide level 2.4 feet higher.

4. Amend the Zoning Ordinance (including Critical Area regulations) to require that all required stormwater management practices and techniques for development or redevelopment projects in areas on the 2100 Maps as Flood Area be proven effective with the ~~2.4 foot~~2.4-foot rise in sea level assumed as a base condition. This includes stormwater management evaluations required for development activities within the Critical Area. The Town will need to coordinate with Calvert County Department of Public Works to incorporate this standard, or a comparable standard, into the Department's administration of Maryland stormwater management regulations.

~~5.~~ Amend the Zoning Ordinance to prohibit from areas mapped as 2100 Flood Area, all group homes, convalescent centers, nursing homes, ~~medical clinics,~~ and hospitals. These uses would be especially vulnerable to coastal hazards and would present difficulties for emergency evacuation. These Zoning Ordinance amendments can be re-evaluated as mitigation measures are implemented and the projected 2100 Flood areas are adjusted.

~~6.~~5. Thoughtfully evaluate the Zoning Ordinance to determine what regulatory obstacles may impede property owners from raising buildings and improving their properties in ways that

**Commented [GU4]:** Received a comment that we shouldn't limit the type of development in this area but rather how to solve the flooding in the 2100 flooding map

**Commented [HW5R4]:** maybe say forecasted or unmediated areas...

**Commented [GU6R4]:** See sentence added at the end

would protect public health and safety and advance the resiliency goal of this Plan. Examples of obstacles might include structure height, where the structure height is measured from, permitted hardscape elements, alternate entrances to a lot, etc.

Commented [GU7]: Question was asked - can we look at specific obstacles rather than making a blanket statement?

Commented [HW8R7]: some obstacle examples: structure height - where to measure from - hardscape - alternate entrance to a piece of land

## Tactical Retrofitting

This section is organized into three parts. The first describes the spatial tactics and the techniques which may be applicable within the Town generally. The second and third part describe the tactics and techniques specially recommended as applicable to Area A, B, and C respectively. Recall areas A, B, and C are described and mapped in Chapter 3.

The tactics and techniques are summarized in the framework set forth in Figure 26 below. Some of the tactics can work in coordination with each other and in fact may be codependent. All of them can be used to ensure the most effective and comprehensive approach.

| Spatial Tactic | Techniques | Description |
|---|---|---|
| **Attenuate** | General open space protection.<br>Forest preservation and tree planting.<br>Steep slope -- preservation in wooded condition.<br>Shoreline, rip rap or naturalizing shoreline. | Reduce the velocity of flood waters and increase the time water takes to move along a pathway |
| **Alleviate** | Allowing marsh migration.<br>Re-establishing wetlands.<br>Spill-overs and retention zones.<br>Building new landforms to contain water.<br>Sustainable drainage.<br>Best Management Practices. | Increase the capacity to withstand floods, provide safe areas that can be flooded to limit vulnerability elsewhere, manage stormwater in all forms of development, retro-fit existing neighborhoods. Absorb. |
| **Restrict** | Building, rebuilding revetments and bulkheads.<br>Building, rebuilding floodgates and seawalls.<br>Building new landforms to block water. | Restrict the entry of water. Hold the line against flooding. |
| **Realign** | Elevating streets, sidewalks, parking lots.<br>Redeveloping neighborhoods.<br>Elevating individual buildings.<br>Managed retreat, relocating buildings and community assets.<br>Bringing about land use changes. | Reposition and thus reduce exposure by moving infrastructure and buildings, either vertically or horizontally. |

*Figure ~~25~~26 Spatial Tactics and Techniques*

Attenuate. Attenuation is the foundation for the Town's coastal resilient approach. While sea level rise is a coastal phenomenon, good land use and stormwater management further inland, (in the drainage basins of South and Fishing Creeks) can reduce the Town's vulnerability to flooding. Healthy forests, especially on steeply sloped terrain and along streams, and healthy wetlands work to reduce the velocity of floodwater and increase the time it takes to flow into the lower lying areas of coastal Chesapeake Beach.

Alleviate. Alleviation is also foundational to coastal resiliency in Chesapeake Beach. The local context described in Chapter 2 of this report indicates the potential latent in the Town's natural resources to help cushion sea level rise and withstand floods. This tactic is in part about allowing natural or nature-like processes, like the migration of wetlands and sustainable drainage, to absorb floodwater so that overall vulnerabilities are lowered.

Restrict. Restricting the entry of water into critical zones through floodgates, sea walls, bulkheads, and other structures is a must in certain locations but it's viability within the unique environmental context of Chesapeake Beach is limited. Because the Town has been built on and among two estuaries, flood waters comes from the Bay while stormwater flows to the shoreline. The structures that would be required to hold back the water along the shorelines of the Bay and Fishing Creek would displace much of the Town and the drainage pipes and pumps necessary to convey floodwaters over and through those structures back to the Bay would be monumental.

Realign. Realignment is about moving things like roads, houses, business, and community assets so they can withstand flooding or avoid it altogether. Some buildings, and infrastructure can be raised so water passes under or around and some can be relocated to safer locations. The Realign and Alleviate tactics can be especially complementary. For example, allowing tidal marshes to expand (alleviate) may depend on relocating buildings and infrastructure (realign).

Many of the recommendations assume multi-disciplinary engineering studies and design work. Teams of experts in coastal engineering, structural engineering, hydrology, infrastructure, land planning, landscape architecture, and town planning would be called upon. These studies would be conducted under the guidance of this Plan, and they would in turn help refine and detail this Plan as they are completed and accepted. Detailed engineering, particularly at the scale of small areas or even individual properties, may reveal actual elevations of some locations that differ from the geo-spatial assessments shown in this Plan. These findings will, of necessity, inform how the recommendations of this Plan are refined and detailed.

# Area A

## Overview

As described elsewhere in this report, Area A is dominated by the confluence of South Creek and the Bay and home to essential community assets and residential communities. The prominent scenic and environmental feature in Area A is the South Creek tidal marsh which now extends along the west side of MD Route 261 roughly from the entrance to the Volunteer Fire Company north to 31st Street. On the east side of the roadway, the marsh is hemmed in by Seagate to the north and Horizon's on the Bay to the south. The blue lines on Figure 27 show the approximate limits of land projected to become mostly open water through this century. This is an area of heightened concern.

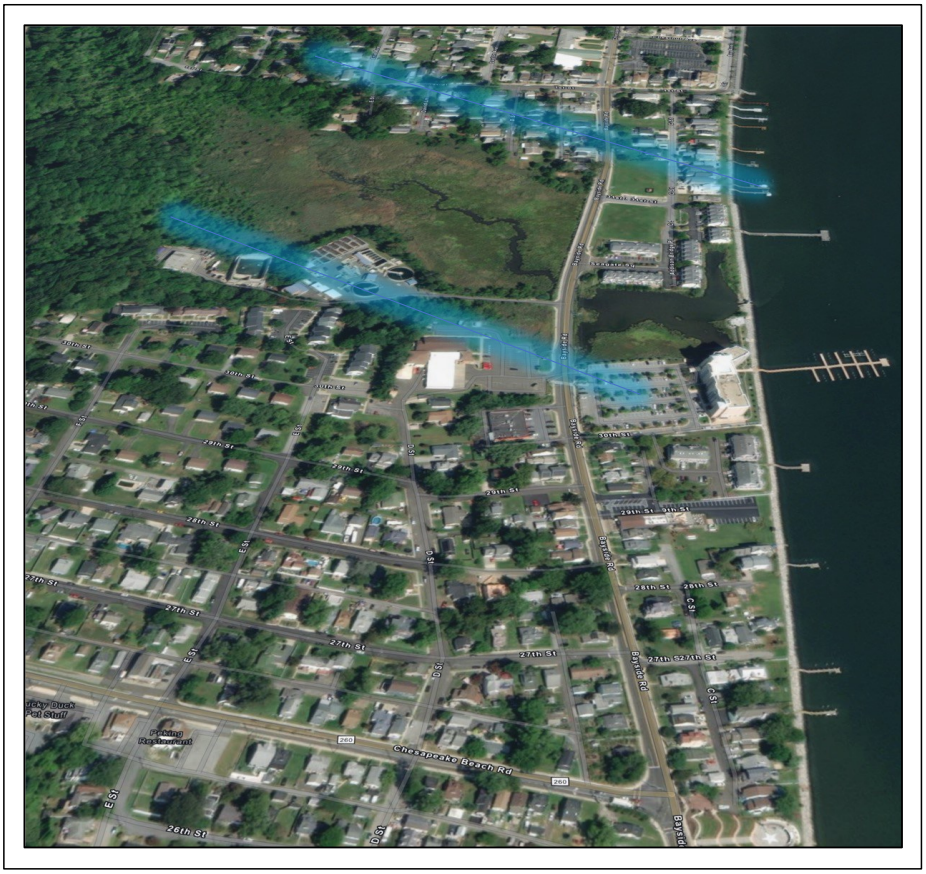



*Figure ~~26~~27: Defining the limits of the South Creek Estuary for planning.*

The sea level rise mapping in Chapter 3 shows that relative sea level rise is projected to render much of the area between the blue lines in the figure above permanently inundated in still water conditions. Even by 2050, the marsh that exists today is projected to be open water and the edges of that marsh are likely to have migrated further north and south in response to expanding high water tables. Future storm surges (on par with the hurricanes of the past) would be far more devasting to any structures not substantially elevated or capable of floating. For context, Hurricane Isabel is reported to have soaked the insulated undersides of the elevated first floors in the Seagate community when its storm surge passed under the townhouses in 2003.

The optimal ~~long term~~long-term approach to coastal resiliency in this area is to allow, to the greatest extent possible, the natural functions of the estuary to be re-established and to prevent the introduction of any residential population. How that might optimally be achieved over the decades

**Commented [GU9]:** Recommend changing to "limit" instead of "prevent"

**Commented [HW10R9]:** use this one

**Commented [GU11R9]:** Review

**Commented [GU12]:** recommendation to delete

**Commented [HW13R12]:** No

ahead will depend on considerable consultation with all parties including residents, property owners, and the Maryland Department of Transportation, State Highway Administration. Holding back the water in this area with structures along the Bay or along the marsh is not practical for every situation and maintaining essential community services and infrastructure to the limited population over the long term could prove exceedingly challenging.

As this area continues to flood and transform, the potential for property damage and risk will rise. This subarea within Area A is subject to flooding from both the Chesapeake Bay to the east and South Creek to the west. Consequently, ~~Whether~~ the existing development (especially residential uses) within this subarea of Area A ~~can be sustained, and in what form,~~ will require much study and consultation with property owners in the decades ahead. Some of the potential responses that flow from the realization that this estuary may become open water are:

- Access to t~~T~~he North Beach Volunteer Fire Company would need to be modified in conjunction with realignments to MD Route 261 to ensure the entire service area could be supported. ~~relocated, and the service areas reimagined such that emergency service to both towns would not depend on this section of highway. The fire company property would then be converted to open space.~~
- MD Route 261 would need to be reconstructed as a bridge over the marsh/open water, allowing for safe travel over the marsh and the freer movement of waters to and from the Bay while protecting the vital transportation needs between North Beach and Chesapeake Beach. The question of costs and feasibility would need to be studied.
- The access route to the Water Reclamation Plant would need to be elevated significantly in combination with MD Route 261, or if that is not practical, a new access route would need to be developed likely to the south side of the facility from a point north of 30th Street. The ground of the treatment plant itself, while at increased risk of flooding, is elevated above projected inundated levels even in 2100.
- Many of the residences on C Street would be surrounded by water on both their Bay and street sides and subjected to hazardous conditions. At minimum, C and 31st Street and the infrastructure and utilities within their rights-of-way would need to be reconstructed and raised to considerably higher elevations, which would affect driveway access to ~~adjoin~~adjoining properties. ~~Alternatively, such houses would need to be removed, raised or reconstrued.~~
- The residences along the north side of the marsh would be flooded and a wide band of homes extending from the marsh would be subjected to hazardous conditions. The southern ends of E Street, David Street, and D Street are projected to be inundated making vehicular access to the houses closest to the marsh impractical. The ends of these streets collect the drainage flowing southward from First Street and they encounter the northern overflow from the marsh. ~~The houses near the marsh would need to be removed or they, along with the street and utilities, would need to be elevated significantly.~~ Mitigation techniques such as berms and/or a functional flood gate might be possible to direct increased flooding away from these areas.
- Engineering studies that are conducted to evaluate solutions related to MD Route 261 should also consider the effects on the ~~The~~ townhouses in the Sea Gate community and the surrounding area~~.~~. This area ~~are~~is projected to be surrounded by water with the private streets and grounds fully inundated. ~~The community's current private street intersection at MD Route 261 is projected to be open water.~~ The October 2022 tidal events foreshadows this condition

Commented [GU14]: Recommendation - for every situation

Commented [HW15R14]: OK

Commented [GU16]: recommendation to delete

Commented [HW17R16]: no

Commented [GU18R16]: left text in...

Commented [GU19]: Recommendation to delete and "What makes this area different from the Windward Key/Rod&Reel/Fishing Creek area"

Commented [HW20R19]: Maybe there's a way to distinguish

Commented [GU21R19]: see revision

Commented [GU22]: Lots of thoughts on this bullet point...Need to discuss revising or removing. Must be done considering what SHA has sent to the Town

Commented [HW23R22]: make statements of the issue not necessarily the solutions

Commented [GU24R22]: See revision

Commented [GU25]: Recommend add: "An engineering study would need to be conducted to determine how Rt. 261 can be elevated and configured to protect transportation between North Beach and Chesapeake Beach as well as
continued emergency services provided by the North Beach Volunteer Fire Company.

Commented [GU26R25]: See revisions

Commented [GU27]: Recommendation to delete

Commented [GU28]: Discussion about this bullet point and the bullet point two below it

Commented [GU29R28]: see revision

Commented [GU30]: Suggestion to add the statement: "Add a berm to deflect the storm water away from the residential areas. Add a flood gate to the west side of Rt 261 to ensure the flooding doesn't occur along Rt 261."

Commented [GU31R30]: see revision

Commented [GU32]: Recommendation to add: "Engineering studies that are conducted to evaluate solutions for MD Rte 261 should also incorporate recommendations for ....

Commented [HW33R32]: re-evaluate all bullets here

Commented [GU34R32]: Review

Commented [GU35]: recommendation to add "which" in conjunction with the other add

Commented [GU36R35]: see revision

(see Figure 15 in Chapter 2 under the heading Drainage). ~~The townhouse blocks would need to be removed or completely and comprehensively elevated and/or redeveloped at a significantly higher elevation along with all streets, utilities, and infrastructure. It is quite possible the land itself would need to be raised and contained within bulkheads or seawalls, thus presenting a significant challenge for access, circulation, and public water and sewer.~~

- ~~The parking lot and access road into Horizons on the Bay is projected to be inundated and would need to be elevated.~~
- ~~Development of any open lands and intensification of any existing development would need to be strictly avoided.~~

## Recommendations for Area A

The following recommendations are intended for the next 10 years.

### *Attenuate Recommendations*

Land preservation in the South Creek watershed is essential. The adopted 2040 Comprehensive Plan designated most of the remaining stands of forest within Town boundaries for resource conservation. Following the adoption of the Comprehensive Plan in 2022, the Town Council adopted zoning ordinance amendments and a new map which largely removed development potential from these areas and rezoned them "Resource Conservation".

Moving forward, the Town should seek to minimize any further forest removal through adjustment to its zoning regulations, implement recommendation for an urban forest program to increase forest cover within the watershed, and coordinate with Calvert County and North Beach to ensure continued preservation and appropriate land use strategies in the parts of the watershed that extend beyond town limits.

### *Alleviate Recommendations*

1. Through 2050, facilitate outward migration of the South Creek tidal marsh. To the north, allow the growth toward E, David, and D Streets. This can be optimally accomplished by coordinating with the most impacted property owners to buy out impacted owners and convert the land to open space. On the south side of the marsh, wetlands are migrating into the Volunteer Fire Company and its parking areas. Identifying near-term and long-term solutions for preserving emergency services to the Twin Beaches via the North Beach Volunteer Fire Company should be prioritized and evaluated for financial feasibility. ~~This is addressed below under "Realign" where this Plan recommends relocating the company. In the meantime, the strict a~~Application of State and federal regulations preventing the disturbance of tidal wetlands and wetland buffers must continue to be enforced along the edges of the marsh. Development activities in ~~these area~~this area are further restricted by the Town's Critical Area regulations.

2. Assert rightful public ownership and maintenance of the ~~20-foot wide~~20-foot-wide historic trolley right-of-way that runs along the east side of MD Route 261. The section from First Street in North Beach to 31st Street is shown in ~~the Figure~~Figure 15 . This area may be used for flood



**Commented [GU37]:** Recommendation to remove the bullet - could be viewed as a taking and development, if done correctly, could improve the area with flood and storm water management

**Commented [HW38R37]:** same as above

**Commented [GU39R37]:** See Revision

**Commented [GU40]:** 2 Questions:
- Why are the recommendations for Seagate different from those for Winward Key
- Why are the recommendations for open lands in tihs area different from those for Area B?

**Commented [GU41R40]:** Different flooding scenarios

**Commented [GU42]:** Recommendation to delete and add so it would now read as "Identifying near-term and long-term solutions for preserving emergency services to the Twin Beaches via the North Beach Volunteer Fire Company should be prioritized and evaluated for financial feasibility. To the extent possible, requirements....

**Commented [HW43R42]:** ok

**Commented [GU44R42]:** see revision

management as conditions and opportunities warrant and/or to provide space needed by the State Highway Administration to elevate MD Route 261. Prevent the encroachment of any further private development activities within this area and coordinate with adjoining property owners to eliminate the several private structures (sheds, fences, and similar structures) that have been constructed on this public land.

Commented [GU45]: Concern was raised about whether this right-of-way exists

Commented [GU46R45]: Holly stated it does exist

3. Incentivize or require the retrofitting of parking lots in Area A and to the extent possible convert ~~un-needed~~unneeded parking area to open space for flood management. Figure 28 shows an example.

*Figure 27~~28~~: Image of parking lot providing stormwater management.*

4. Address the drainage issue at Seagate and the storm drainage pump at 31st and C Streets, which is described in Chapter 2 of this report. The design should align with the ~~long term~~long-term objective of allowing natural processes to work in this area and be designed in combination with other sustainable methods to absorb stormwater while protecting public safety. Any option that makes public health and safety dependent on a mechanical solution must also have built-in redundant systems which are preferably nature based and include substantial physical space for the alleviation of flood risk.

*Restrict Recommendations*

1. Elevating the revetment along the bayfront in Area A over the next decade is recommended between 30th Street and 27th Street (see Figure 29). This area is presently subject to coastal flooding, is projected to have a 10% annual chance of flooding by 2050 and have a much higher likelihood of ~~begin~~being open water by 2100 absent a solution.

   The area of Town is not directly connected hydrologically to the South Creek tidal marsh which is just north so a higher revetement along the Bay stands as a viable option. In other words, a physical barrier at this location will not impede the discharge of water from South Creek to the Bay.

   
   
   *Figure ~~28~~29: Flood Zone from 30th Street to 27th Street.*

   However, any elevation of the revetment in this area should be evaluated against any planned changes to the land, structures and infrastructure immediately behind the revetment. ~~must only proceed after a plan is accomplished and adopted for elevating the land, structures, and infrastructure.~~ Any master planning efforts for this area should specify ~~The master plan must specify~~ a recommended ~~the necessary~~ elevation of the land, the minimum elevation of structures, the location and vertical alignment of drainage facilities, standards for sustainable development and building construction, the assignment of private and public costs, the allotment of land for public and private open spaces, and broad public access to and along the Bay front. Elevating the revetment is best performed in conjunction with a ~~without a~~ plan for raising the land and/or structures, creating open spaces, and enhancing public access to the water. ~~is not an option this Plan supports. However, t~~This Plan does recognize that ~~anticipate that~~ the revetment could be raised, especially in the short term to dissipate projected wave energy, prior to the implementation of the aforementioned plan.

2. Conduct an engineering study in coordination with the State of Maryland to determine how much longer the floodgate in its current configuration can remain viable and investigate the optimal solutions for ~~the flood~~flood control in the area. This Plan foresees the gradual transformation of the South Creek estuary into open water and marsh and that a combination of natural and manmade solutions will be necessary.

**Commented [GU47]:** Comment: This recommendation contradicts itself

**Commented [HW48R47]:** Grant to provide some guidance

**Commented [GU49R47]:** See revision

*Realign Recommendations*

1. ~~With urgency and in coordination with the North Beach Volunteer Fire Company, the Town of North Beach, and the State Highway Administration, evaluate whether it is feasible and advisable for the North Beach Volunteer Fire Company to remain at its current location or to relocate, and develop of plan of action for the preferred option.~~ Evaluate a spectrum of solutions for preserving facilities and transportation to~~a~~ the current North Beach Volunteer Fire Department location and prioritize preserving emergency services to the Twin Beaches for funding.

2. Reconstruct MD 261 through Area A. The optimal design for reconstruction would emerge after significant engineering studies, but this Plan recommends that the elevated roadway or bridge be constructed as the top priority of this plan, acknowledging that this vital transportation link has a low tolerance for flood risk. The optimal design will incorporate pedestrian and bicycle facilities. ~~The optimal design for reconstruction would emerge after significant engineering studies but this Plan recommends that the roadway be reconstructed as a bridge with elevated pedestrian and bikeways, acknowledging that this vital transportation link has a low tolerance for flood risk. The optimal design will incorporate elevated pedestrian and bicycle facilities.~~

3. Use voluntary purchase and removal ~~plan~~plans to remove houses located along the north side of the marsh and return the land to open space use allowing the marsh to expand.

   While the ultimate location of retreat lines may differ based on more precise~~s~~ elevation surveys, Figure 30 shows planned "managed retreat lines" signifying roughly the properties that could be eligible for a purchase and relocation option over time. The Town should consider making the first purchase offers to those properties between the marsh and the 2050 Managed Retreat line shown.


*Figure ~~29~~30: Managed Retreat Lines*

Commented [GU50]: For discussion about how to word this bullet or remove completely

Commented [HW51R50]: Soften the relocate part

Commented [GU52R50]: see revision

Commented [GU53]: Replace with "Evaluate a spectrum of solutions for preserving facilities and transportation at the current North Beach Volunteer Fire Department location and prioritize preserving emergency services to the Twin Beaches for funding."

Commented [HW54R53]: OK

Commented [GU55]: Recommendation to reword as: "The optimal design for reconstruction would emerge after significant engineering studies, but this Plan recommends that the elevated roadway or bridge be constructed as the top priority of this plan, acknowledging that this vital transportation link has a low tolerance for flood risk. The optimal design will incorporate pedestrian and bicycle facilities.

Commented [GU56R55]: We know elevating this road is not the recommended course of action based on the SHA letter to the Town

Commented [HW57R55]: ok

4. ~~Adopt amendments to the Town's Zoning Map and Zoning Ordinance as necessary to prevent or significantly limit the introduction of new residential~~ ~~Ensusre~~Ensure any future development on the ~~development on the~~ open parcels in Area A, especially within the subarea between the two blue lines in Figure 27, occurs in concert with any planned mitigation efforts in the surrounding area. ~~.~~This could potentially require revisions or caveats to the Town's Zoning Map and Zoning Ordinance.

   ~~Options to consider include changing the zoning district to Resource Conservation, which would eliminate development potential or requiring the transfer of "development rights" out of the flood prone areas for use on other properties in the Town. Under a scenario in which the "development rights" would be transferred, the land would become deed restricted open space and then could potentially be available for flood management.~~

   Alternatively, or in combination with the above ~~zoning options~~, the Town and/or State could acquire the land for parkland and flood management. In the meantime, the Town should adopt the recommendations in the prior section of this Chapter under the heading Strategic Flood Management and Sustainable Drainage and strictly minimize the risk to future residents and the impact to local flooding conditions in light of the sea level rise projected in this Plan.

5. Conduct a study to determine the practical and financial feasibility of ~~either~~ elevating the Sea Gate community and the neighboring residences. ~~or working towards their removing and the relocation of the housing units in Town in practical.~~ As recommended in the Chesapeake Comprehensive Plan, the Town should also be open to modern construction techniques that allow housing to be flexibly designed to adapt to floodwaters. For example, modern flood adapted houses can be anchored to the land but made capable of rising and falling with the tides and flood waters. Flood resilient houses, as diagrammed below, are already constructed throughout the world and may be viable in this location.

Commented [GU58]: Recommended to delete

Commented [GU59]: For discussion

Commented [HW60R59]: take a stab at Bullet 4

Commented [GU61R59]: See Revision

Commented [GU62]: Do we really wish to recommend that all of Seagate and C St Residents relocate?

Commented [HW63R62]: leave out the removal and relocation

## Area B

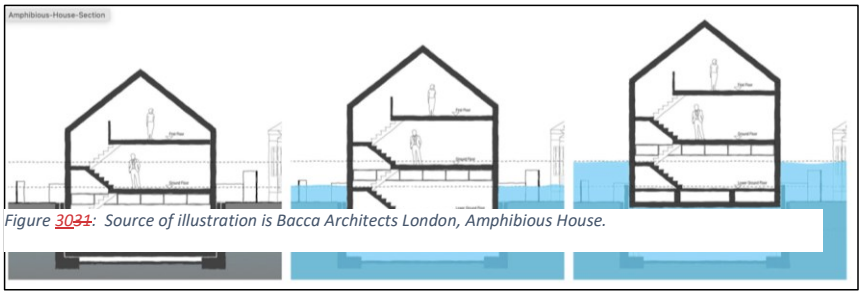



*Figure ~~30~~31: Source of illustration is Bacca Architects London, Amphibious House.*

### Overview

As described elsewhere in this report, Area B is where Fishing Creek meets the Bay, the mixed-use town center. It is home to assets including the Town Hall and the ~~North East~~Northeast Community Center, emergency command and control and evacuation centers, respectively. The following

recreational assets are located here too: Chesapeake Beach Waterpark, Kellam's Recreational Complex, the Public Boat Landing, and the Chesapeake Beach Railway Trail. The area is also home to ~~maritime,~~maritime and other commercial activities including a hotel and restaurants, two large residential communities, and a standalone apartment building at the end of Harbor Road.

Fishing Creek has been channelized and much of the once extensive marsh was filled and is now the Kellam's' Recreational Complex, Fishing Creek Marina, and Courtyards at Fishing Creek Apartments and Townhouses. The Fishing Creek channel is routinely dredged, and the spoils are deposited at the dredge disposal site located in the marsh along the western edge of the Courtyards at Fishing Creek complex. The Town has documented surface subsidence of up to 16 inches over 15 years at Kellam's, the ~~North East~~Northeast Community Center, and along the right-of-way of Gordon Stinnett Avenue.

The optimal ~~long term~~long-term approach to coastal resiliency in Area B is to allow the natural functions of the estuary become re-established, where appropriate, while sustaining the maritime ~~mixed use~~mixed-use center. Through zoning changes adopted by the Town Council in 2022, the development of new residential uses is no longer permitted in Area B. The existing residential communities are at risk and considerable consultation with all parties will be needed in the decades ahead to address the effects of flooding.

In Area B Fishing Creek has been channelized and the land along its edge has been developed intensively. In these locations, property owners have found it necessary in recent years to raise bulkheads and elevate land. For this reason, even with a ~~2.4 foot~~2.4-foot sea level rise, open water is projected to mostly be contained within the channelized Fishing Creek, the boat inlets, and the boundaries of the marsh. As shown on Figure 32 below, the marsh itself is projected to be almost entirely open water by 2050.

While the extent of open water coverage would be limited through 2050, the areal extent of recurring flooding is projected to be substantial by 2050. All the aforementioned community assets, Gordon Stinnett Avenue, and the private streets and grounds of the Courtyards at Fishing Creek and Windward Key, are projected to have a 10% annual chance of flooding. Through 2050, The Kellam's Recreational Complex is projected to flood from both the north and the south leaving a ~~250-foot wide~~250-foot-wide strip of slightly higher elevated ground just above the floodplain. The 2100 Maps in Chapter 3 show that open water would extend quite far into the Recreational Complex with the projected ~~5.6 foot~~5.6-foot rise. The depth of the 10% annual chance flood on the remaining land area at Kellam's would exceed 2.5 feet in 2100.

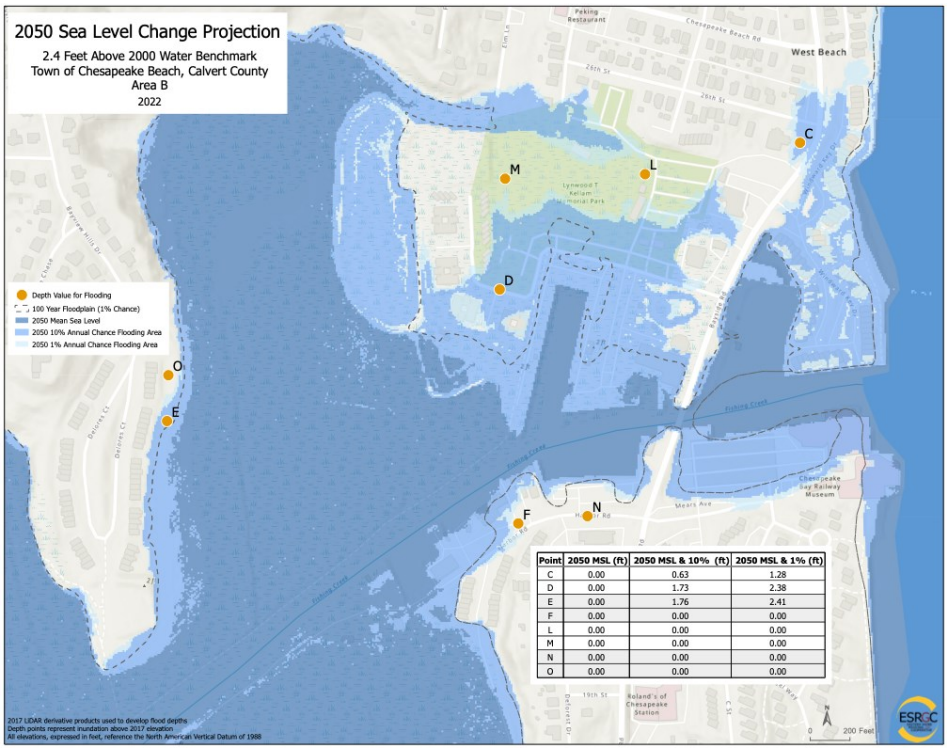



*Figure ~~31~~32*

The entire shoreline of Fishing Creek and its boat inlets is structurally supported until the shoreline merges with the natural marsh west of Fishing Creek Marina. All of it is owned privately except for the Public Boat Landing which is owned by the Town of Chesapeake Beach. The boat landing is a break in what is otherwise a solid structure currently containing the water. The October 2022 tidal events demonstrated how far water can enter through the boat landing and it foreshadows permeant conditions if no changes are made.

The private structures along the north side of Fishing Creek and the Fishing Creek ~~Marina,~~Marina help protect the Kellam's Complex. There are no structures along the western edge of the marsh and flood protection afforded to the ~~Courtyards~~Courtyard's housing project is partly a function of the elevated dredge spoils site. Elevating the existing structures and building new structures and/or ~~land forms~~landforms would be needed to secure Courtyards at Fishing Creek and the Kellam's Complex against projected sea level rise.

As this area continues to flood and to transform, the potential for property damage and risk will rise. Whether the existing residential development within this Area B can be sustained, and in what form, will require much study and consultation with property owners in the decades ahead.

## Recommendations for Area B

The following recommendations are intended for the next 10 years.


*Figure ~~32~~33: View of Area B.*

### *Attenuate Recommendations*

Land preservation in the Fishing Creek watershed is essential. The adopted 2040 Comprehensive Plan designated most of the remaining stands of forest within Town boundaries for resource conservation. Following the adoption of the Comprehensive Plan in 2022, the Town Council adopted zoning ordinance amendments and a new map which largely removed development potential from these areas and rezoned them "Resource Conservation". Additionally, the Comprehensive Plan recognizes the importance of protecting the forested lands identified as the FIDS Protective Area.

Moving forward, the Town should ~~seek to~~ minimize any further forest removal through adjustment to its zoning regulations, implement recommendation for an urban forest program to increase forest cover within the watershed, and coordinate with Calvert County to ensure continued preservation and appropriate land use strategies in the part of the watershed that extends beyond town limits.

### *Alleviate Recommendations*

**Commented [GU64]:** Recommendation to add: "Additionally, the Comprehensive Plan recognizes the need to assert the covenant protections on 202.78 acres of forested land, identified as the FIDS Protective Area."

**Commented [HW65R64]:** ok

**Commented [GU66]:** Recommendation: delete "seek to" and have the first sentence read as: "
Moving forward, the Town should enforce the FIDS covenant, including by securing the FIDS parcel by forcing its conveyance to a public or community entity. Additionally, the Town should minimize...."

**Commented [HW67R66]:** do not add

Beginning now and carrying through 2050, use landscape design and civil engineering to gradually adapt to rising water and flooding conditions in and around the Kellam's Recreational Complex. Wetlands would be allowed to migrate and gradually evolve from newly planned spillover areas (flood retention zones) to open water, contained by berms and other ~~land forms~~landforms.

*Figure ~~33~~34: An imagined blue-green park excerpted from the Comprehensive Plan.*

The goal would be to merge both flood management and recreation into what would be a large blue – green park as generally imagined in the image in Figure 34. This Plan recommends beginning a master plan process within the next couple of years to establish the feasibility and engineering parameters and then to begin phasing the work by the end of this decade.

The basic idea is conceptually rendered for Kellam's in Figure 35. Areas shaded blue are projected to be open water in the decades ahead which would be contained by berms and other landforms (the green lines)[13]. The dredge spoil site has potential to be incorporated into this design approach. The new landforms (along with drainage solutions) could then sustain an open area for ballfields and other activities, which itself could safely accommodate periodic flooding.

*Figure ~~34~~35: Blue - Green Approach at Kellam's Recreational Complex.*

The created landforms could become part of the park experience. Figure 36 below shows a recreational cycle track which could become an integral element of a blue - green park and the adjoining Chesapeake Beach Railway Trail.

[13] As drawn, this approach might possibly help sustain the Courtyards at Fishing Creek Apartments and Townhouses, which would also require the elevation of Gordon Stinnett Avenue and supporting infrastructure. However, the low lying conditions and the fact that the property was developed on wetlands raises questions about the viability of this property as a residential community over the long term. A recommendation for considering relocating the housing to a safer location in Town is discussed later.

*Figure ~~35~~36: Source, American Ramp Company. A potential recreational use for the landforms that would be established to help protect Kellam's Recreational Complex.*

### *Restrict Recommendations*

1. This Plan assumes private property owners will continue to maintain and as needed elevate the bulkheads which line Fishing Creek and secure their marinas and commercial properties. The Plan supports these efforts, but as noted in Chapter 5, this Plan endorses the Town's Comprehensive Plan recommendation that the Town Council re-establish the Chesapeake Beach Board of Port Wardens to provide oversight to these projects in conjunction with the Planning Commission approval processes. (See Chapter 290 of the Town Code, Article IX).

2. This Plan also assumes that the Windward Key ~~Home Owners~~Homeowners Association will secure its property against coastal flooding which may be expected in future decades to come over and through its current revetment and bulkheads. Since the property is not directly threatened by upland flooding, overflow of the marsh (at least for the foreseeable future), or wetland soils, these efforts should secure the neighborhood against major flood hazard. These efforts could also have the ancillary benefit of protecting the Town Hall (at MD Route 261 and 26th Street), which receives coastal inundation in large tidal events that passes through the Windward Key property. The HOA should initiate and plan for these upgrades.

### *Realign Recommendations*

1. ~~In coordination with Calvert County, evaluate the long term viability of the current location of the North East Community Center and consider relocating the center within Town to a location out of the flood hazard area. In the near term, consider whether the emergency shelter functions assigned to the Center are viable and if so, for how long. This site, including its access drive and parking, flooded during the October 2022 tidal event. Evaluate the~~

**Commented [GU68]:** recommendation to add "additional"

**Commented [GU69R68]:** Left additional in ...

**Commented [GU70]:** Recommendation to add: "in conjunction with Planning Commission approval processes"

**Commented [HW71R70]:** add

**Commented [GU72]:** Recommendation to remove the use of using a Board of Port Wardens. Doesn't currently exist and need to confirm purpose and duties

**Commented [GU73R72]:** Town Council is moving to create the Board of Port Wardens

~~Waterpark similarly.~~Evaluate a spectrum of solutions for preserving the Northeast Community Center, the Chesapeake Beach Water Park and continued transportation access to each.

2. Study the range of options to mitigate potential flooding of ~~feasibility of elevating~~ Gordon Stinnett Avenue as part of a Master Planning effort in Area B~~e~~ and/or the development of a replacement access route. The full length of the current road is the only means of vehicular access to the western side of the Fishing Creek Marina and Courtyards at Fishing Creek Apartments and Townhouses. Maintaining public street access to these two properties will require substantial costs for reconstruction and maintenance. The Town needs to decide the feasibility of elevating the road and its infrastructure, or of building an alternative road, and how such a project might be incorporated into a long term approach to flood management.

3. ~~Consider relocating t~~The Courtyards at Fishing Creek Apartments and Townhouses ~~. This housing development~~ was established in 1989 under the federal Low Income Housing Tax Credit program (LIHTC). The 76 units in the development are set aside for households making less than 60% of the area median household income and rents are generally capped at 30% of a household's income. The development thus meets an important housing need in Town, but it was constructed on filled marsh and at an elevation that puts the residents at risk over the long term. Evaluate a spectrum of solutions for preserving this critical housing and the associated infrastructure supporting it. ~~Significant consultation with the property owner and the residents is needed to investigate solutions and retain the housing units within the Town, whether at this site or somewhere else.~~

4. Redesign the Public Boat Landing. The net effect of subsidence and sea level rise is already compromising the functionality of the landing. During high tides and storms, the Landing allows water to enter the southeast side of the Fishing Creek Marina and flood the parking lot and access drive.

~~4.~~5. Study and evaluate the infrastructure needs that support vital assets in this area, inclusive of water distribution, sewer services, roads and electric transmission.

## Area C

**Commented [GU74]:** Much concern about recommendation to relocate this structure

**Commented [HW75R74]:** rewrite

**Commented [GU76]:** Recommendation to change to: "Evaluate a spectrum of solutions for preserving the North East Community Center and the Chesapeake Beach Water Park and continued transportation access to each."

**Commented [HW77R76]:** there's our answer

**Commented [GU78]:** Recommendation to add: "as part of a Master Planning effort in Area B."

**Commented [HW79R78]:** add

**Commented [GU80]:** Much concern about recommendation to relocate this structure

**Commented [HW81R80]:** rework wording

**Commented [GU82R80]:** See revision

**Commented [GU83]:** Consider adding another bullet: "Close Gorden Stinnett Ave and reroute traffic through Town Hall or 26th Street

**Commented [GU84R83]:** See revision

As shown in Chapter 3, Area C includes the southwestern extent of the Fishing Creek marsh within the Town. The area of concern encompasses the residential properties north of Old Bayside Road at the ends of E, H, I, and J Street.

Figure 37 shows that the open water is projected to be contained largely within the exiting FEMA 1% Annual Chance Floodplain with the projected 2.4 foot rise. However, the encroachment of ground water and periodic flooding may potentially degrade the on-site septic systems in the rear yards of these properties. The Town's long term plan is to connect these residences to the public wastewater collection system. Sea level rise may hasten this. This Plan recommends that the Town and the Calvert County Department of Health coordinate with property owner through the next decade to track conditions.

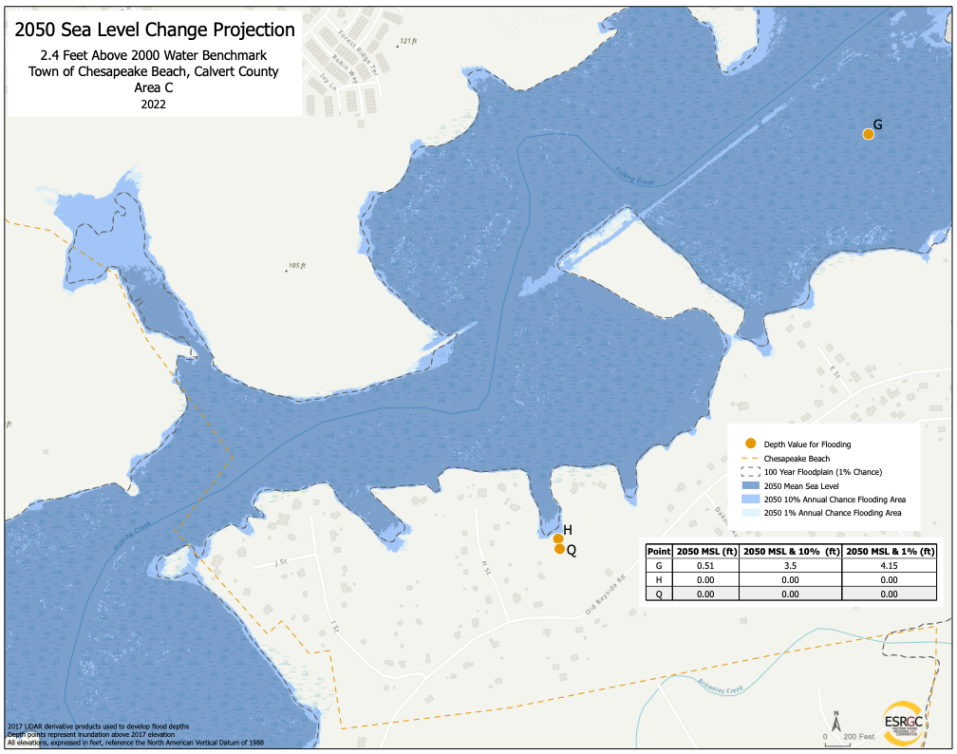



*Figure ~~36~~37*

# Chapter 5 Implementation and Conclusion

The previous chapter of this Plan described the most important recommendations over the next 10 years. Here are the critical steps necessary to facilitate the implementation of those recommendations.

1. Formally adopt this Plan by resolution of the Mayor and Town Council and transmit copies to the Town of North Beach and Calvert County. Transmit a copy to the Maryland Department of Natural Resources, Chesapeake and Coastal Service.

2. Formalize the Coastal Resiliency Steering Committee into a standing committee or commission within Town government with the main task being to guide the implementation of this Plan and to regularly advise the Mayor and Council. A standing committee or commission, with funding to support ~~its work~~professional analysis and studies, would allow development of the specialized local knowledge, institutional capacity, and community trust necessary to deal with the challenges this Plan has highlighted. The commission or committee should be staffed by town employees and/or consulting engineers and planners. ~~As an alternative, the Town may wish to organize the Steering Committee into the Town of Chesapeake Beach Board of Port Wardens or, preferably, to place the Board's portfolio of responsibilities with this new body.~~ This Plan and the Town's adopted Comprehensive Plan both recommended reconstituting the Board of Port Wardens.

3. Identify priorities for capital improvements related to this Plan and ~~U~~update this Plan every five years. Report on progress and refine and detail the recommendations as conditions warrant. Establish a process for tracking progress and providing updates to interested parties including the key Departments in State government. Further develop the Town's webpage devoted to the topic into a community outreach tool to residents and property owners.

4. Continue the work begun under this Plan to document in detail the condition and ownership of the drainage systems in Town and as part of that effect undertake a town-wide coastal survey to refine and detail the elevations of the land, streets, open drainage ways, buildings, revetments, and bulkheads. Much of this today is available but needs to be assembled and updated into a quickly deployable data set that can be used both in planning, preliminary engineering, and disaster recovery and/or rebuilding.

5. Coordinate with Calvert County and North Beach ~~is~~in the periodic update of the Calvert County All-Hazard Mitigation Plan and incorporate the findings and recommendations of this Plan.

6. Identificaton of Funding.
   ~~6.~~a. ~~First, a~~Assemble a package of federal and state grant and loan programs that the Town can be used to undertake the detailed engineering studies recommended in this report. Some sources will require a local match and over the next several years the Town will need to strategize about how to fund this work and the infrastructure upgrades and modernization that will flow from these studies. Examples include the federal Building Resilient Infrastructure and Communities (BRIC) program and the federal Flood Mitigation Assistance program.

**Commented [GU85]:** Recommendation to delete

**Commented [HW86R85]:** no

**Commented [GU87]:** Recommendation to delete

**Commented [HW88R87]:** professional analysis and studies

**Commented [GU89]:** Recommendation to reword this sentence to read: "As an alternative, the Town may wish to organize the Steering Committee into the Town of Chesapeake Beach Board of Port Wardens with the responsibility to approve or disapprove c projects referred by the Planning Commission."

**Commented [HW90R89]:** strike sentence

**Commented [GU91]:** same concern as previously noted re: Board of Port Wardens

**Commented [HW92R91]:** ok

**Commented [GU93]:** Recommendation to add: "Identify priorities for capital improvements related to this plan and...."

**Commented [HW94R93]:** ok

**Commented [GU95]:** Comment: "This plan supports organizing the Coastal Resiliency Steering Committee into a Commission with funding and the authority to direct and prioritize a large portfolio of capital improvement projects, separating these expenditures from the traditional budget process and from the accountability of elected leaders."

**Commented [HW96R95]:** identification of funding

~~a.~~

b. Assemble a package of federal and state and loan programs that the Town can use to assist property owners in making property more resilient to the effects of flooding and to facilitate the relocation of those buildings which lie within the hazard areas designated in this Plan and future studies for "managed retreat". The aforementioned BRIC program is also available for this purpose.

Commented [GU97]: Recommendation - Hire a hydrologist to review any potential circumstances within the 2100 flooding map

***

# Appendices

Intended Use and Limitations
The datasets represent projected still water depths (ft) in a forecast sea level change scenario. The layers are an aid for researchers seeking to identify potential vulnerabilities along Chesapeake Beach's shoreline. The data supports Chesapeake Beach's leadership and planners as they endeavor to mitigate or prevent the impacts of sea level change resulting from land surface subsidence and rising sea levels. The product uses sea-level projections to forecasts areas of inundation for a given scenario. The data may be used and redistributed for free but is not intended for legal use, since it likely contains inaccuracies. The User assumes the entire risk associated with its use of these data and bears all responsibility in determining whether these data are fit for the User's intended use. The information contained in these data is dynamic and will change over time. The data are not better than the original sources from which they were derived, and both scale and accuracy may vary across the data set. These data may not have the accuracy, resolution, completeness, timeliness, or other characteristics appropriate for applications that potential users of the data may contemplate. The
User is encouraged to carefully consider the content of the metadata file associated with these data. These data are neither legal documents nor land surveys, and must not be used as such. Eastern Shore Regional GIS Cooperative should be cited as the data source in any products derived from these data. Any Users wishing to modify the data should describe the types of modifications they have performed. The User should not misrepresent the data, nor imply that changes made were approved or endorsed by the Eastern Shore Regional GIS Cooperative. The Eastern Shore Regional GIS Cooperative, nor any of its employees or contractors, makes any warranty, express or implied, including warranties of merchantability and fitness for a particular purpose, or assumes any legal liability for the accuracy, completeness, or usefulness, of this information.

**Commented [GU98]:** Question: Is this Use and Limitations Clause included in all Coastal Resiliency Plans? The highlighted disclaimers do not instill a lot of confidence in the report.

**Commented [GU99R98]:** Standard language they issue with their data

# ~~General Comments:~~

~~FIDS:~~

~~First, the most disappointing aspect of this document is that it neglects to specifically recognize and recommend strict enforcement of the Forest Interior Bird Dwelling (FIDS) Covenant and Agreement associated with 202.78 acres adjacent to Fishing Creek. These 200 acres represent the largest natural buffer in our Town, providing critical attenuation and alleviation benefits to mitigate current and future water-related challenges in the Town Center. The FIDS parcel also serves as a cherished scenic vista for a large number of residents and visitors of the Chesapeake Beach Railway Trail and is the site for five of the six most popular walkability projects as proposed in the 2021 Town of Chesapeake Beach Connectivity Study, adopted as part of the 2040 Comprehensive Plan. The FIDS Protection area provides for protection from development in perpetuity. As the Grantee of the covenant, the Town has the explicit right to enforce the protections outlined in the covenant and to secure the property away from the developer.~~

~~If the current administration were in support of enforcing the covenant and securing the FIDS parcel, it would be easy and appropriate to specifically site the value of this property to coastal resiliency efforts and to recommend protecting it in perpetuity by securing it from the developer. For reference, relevant pages of the FIDS Covenant and Agreement are attached.~~

~~Generally:~~

~~The approach of prematurely recommending that public assets be relocated rather than recommending that engineering studies be funded to determine solutions for protecting and retaining public assets seems backward. Our town consists of only 2.79 square miles of land and there are few, if any, viable parcels of land available to receive relocated assets. In many cases, relocation would result in the effective elimination of the asset for convenient use by Chesapeake Beach residents. Recommendations to relocate public assets should only be made after a focused engineering study is performed and only if the study indicates that the assets cannot be retained in current locations. If there are situations where relocation is ultimately recommended, the recommendation should include a proposed new site.~~

~~This plan recommends that our Town's most substantial assets and amenities be relocated, while at the same time affirming support for continued private development on parcels that are co-located. It is important to recognize that even in the case of private development, public funds for associated infrastructure would necessarily be expended. It would be more appropriate to direct efforts and public funds towards infrastructure that supports public assets as well as towards the public assets themselves.~~

~~Most people would prefer that the town use tax revenues to retain assets and amenities, rather than to support private development.~~

~~Additionally, it appears that the Town will be pushing forward on the substantial investment of a wastewater treatment plant capacity expansion. This seems unwise at this time, in light of all that is suggested in this Coastal Resiliency Plan. There are quite a few high-dollar budget items that are needed in the near future. Committing revenue towards adding utility capacity to facilitate additional development before budgeting and planning for other items will only compound the problems outlined in this report.~~

~~Specifically:~~

**Commented [GU100]:** suggestions to address FIDS are discussed earlier in the Plan

**Commented [GU101R100]:** addressed earlier in the document -

**Commented [GU102]:** I think this is addressed earlier in the plan review

**Commented [GU103R102]:** reworded in the document

**Commented [GU104]:** I am not aware of any capacity expansion plans for the WWTP. I think the expansion was completed a number of years ago.

~~Area A~~
~~Determining a solution for Rt. 261 in Area A is key to decision-making throughout Chesapeake Beach. Undoubtedly, a solution for this important transportation route that regularly floods will need to be identified in the near term, and any solution implemented is likely to be very expensive.~~
~~Rather than assume one of the most costly solutions for this road in the absence of an engineering study,~~
~~the adopted plan should call for an engineering study that provides options for a spectrum of solutions that range in cost. For each solution considered, this study should also evaluate the resulting physical and financial impact to co-located public assets, such as the North Beach Fire Department and the Chesapeake Beach Wastewater Treatment Plant.~~
~~T~~
~~The study suggested as recommendation #5 for the Sea Gate community on page 39 should also be included in studies related to Rt. 261 in Area A.~~
~~As the need for a solution on Rt. 261 in Area A is eminent, estimating the cost and nature of the solution~~
~~and estimating the cost for implementing related initiatives to protect public assets, infrastructure, and housing served by the route will be critical for planning and budgeting. Determining the solution for Rt.~~
~~261 in Area A should be clearly identified as the top priority of the plan.~~

~~Regarding the vacant parcels in Area A, the zoning amendment recommendations in the Plan for these parcels seem nonsensical in the absence of an engineering study as described above, and following so~~
~~soon after Comprehensive Planning and Comprehensive Rezoning during which the parcels were designated "RV-2," (allowing for high densities). Likewise, implementing a TDR program for these parcels~~
~~would be grossly unfair to those property owners whose properties were recently downzoned. After focused studies are completed and a decision is made for the solution to flooding on Rt. 261, the Town~~
~~may find that the two vacant parcels in Area A remain viable for some level of development. If not, the program described on page 38, #3 may be appropriate.~~

~~Area B~~
~~Area B is a complicated area that is important to land/business owners and residents alike. The goal here should be to retain the existing public amenities and to engage in negotiations with land/business~~
~~owners that result in mutually beneficial development agreements. Master Planning this area under the guidance of a multidisciplined coastal planning/engineering firm would get the best results for this area.~~
~~Adjusting the zoning ordinance to incorporate a framework for a Developer's Rights and Responsibilities~~
~~Agreement could be a useful tool to consider.~~
~~My specific suggestion for this section is to replace all recommendations suggesting the relocation of public assets and amenities with verbiage that recommends an engineering study to determine how each asset might be retained in the Town Center as part of a master-planning effort.~~
~~I agree with the assessment that it is unwise to place physically or financially vulnerable populations in care facilities or residences that may need to be evacuated from time to time, as securing temporary quarters for these populations can be expensive and challenging. We should not introduce additional vulnerable populations to this area, and it could be beneficial to all if an agreeable relocation solution for~~
~~the residents and property owners of the Courtyard Apartments can be found.~~
~~Finally, it is extremely confusing that on August 10, 2023, this plan was presented, recommending relocation for the Chesapeake Beach Waterpark and Northeast Community Center, but on August 11,~~

**Commented [GU105]:** RV-2 is not "high density" - refer to zoning description in Town Code

**Commented [GU106]:** Discussed earlier in the plan review - Recommendations to relocate have been removed

**Commented [GU107R106]:** addressed in the plan

~~2023, the Town mailed out a postcard featuring a QR code link for residents to take a survey about which~~
~~waterpark and community center features are most important to them.~~

Commented [GU108]: This committee wasn't aware of the postcard or survey regarding the waterpark or community center

~~Area C~~
~~Area C contains only one recommendation, which is that the Town coordinates with the Calvert County Department of Health to track conditions of septic systems in the rear residential yards adjacent to Fishing Creek at its Southwestern border, with the long-term goal of connecting these properties to public wastewater collection. I agree with this recommendation.~~

Town of Chesapeake Beach

# COASTAL

Resiliency Plan

2023

Financial assistance in the preparation of this document was provided by the federal Coastal Zone Management Act of 1972 as amended as administered by the Office for Coastal Management, National Oceanic and Atmospheric, with local grant administration by the Maryland Department of Natural Resources, Chesapeake, and Coastal Service.

Plan Approval:

Town of Chesapeake Beach Steering Committee Approval

Signed: _____ Date: _____
Jeffrey Foltz, Steering Committee Chair

Town Council of Town of Chesapeake Beach Approval

Signed: _____ Date: _____
Patrick J. "Irish" Mahoney, Mayor

Date Submitted to the Maryland Department of Natural Resources: _____

# Acknowledgments


## Chesapeake Beach Mayor and Town Council

Pat "Irish" Mahoney, Mayor
L Charles Fink, Council Vice President
Valerie Beaudin
Larry Jaworski
Greg Morris
Keith Pardieck
Margaret Peggy Hartman

## Steering Committee on Coastal Resiliency

Jeff Foltz, P.E. Chairman
Larry Jaworski, P.E., CC-P, Town Councilman
Wesley Donovan
Robert Munro
Phil Pfanschmidt
Grant Soderstrom
Dave Kimelblatt

## Technical Advisory Committee on Coastal Resiliency

Larry Jaworski, P.E., CC-P, Town Councilman
Jay Berry, Public Works Administrator
Christopher N. Jakubiak, AICP
Wayne Newton, P.E., Town Engineer
Josh Stinnett, Superintendent, Chesapeake Beach Water Reclamation Plant (CBWRTP)
Holly Kamm Wahl, MBA, Town Administrator

---

Special thanks to Sasha Land, Coastal Resilience Program Director, Maryland Department of Natural Resources, Chesapeake and Coastal Services, and Laurent McDermott, GISP and Mary Buffington, GISP with the Eastern Shore Regional GIS Cooperative, Salisbury University.

# Table of Contents

# Chapter 1 Introduction

## Introduction

This plan addresses coastal resiliency in the Town of Chesapeake Beach. Its strategies and recommendations are intended to guide the Town as it adapts to sea level rise and an increased incidence and severity of flooding in accordance with a Memorandum of Understanding (MOU) between the Town Council of the Town of Chesapeake Beach and the State of Maryland Department of Natural Resources entered into August of 2021. As part of the MOU the Town Council approved a framework to complete the plan with two (2) task outcomes; I) flood risk mapping and analysis and, II) flood and sea level rise action plan.

The Coastal Resiliency plan was drafted by the Coastal Resiliency Technical Advisory Committee. Public input and comment were facilitated through the Coastal Resiliency Steering Committee. The Coastal Resiliency Steering Committee is made up of Town residents, Town business owners and property managers who are impacted by flooding and sea level rise. The overarching recommendations in the plan are based on a technical review of Town infrastructure impacted by flooding and sea level rise and citizen input on problem areas. The plan's goal is to make recommendations on short- and long-range plans to address Coastal Resiliency and does not bind the Town Council to future projects. This Plan is strictly conceptual and does not in any way obligate the Town to proceed with any course of action. This plan may be revised as environmental conditions or changes occur. Public hearings will be held before any formal action is taken by the Town Council.

The Coastal Resiliency plan is prepared by the Town of Chesapeake Beach using federal funds from the Office for Coastal Management at the National Oceanographic and Atmospheric Administration (NOAA). The organizational and technical approach to the project was developed jointly by the neighboring towns of Chesapeake Beach and North Beach in coordination with the Maryland Department of Natural Resources, Chesapeake and Coastal Services. The jurisdictions also coordinated in the simultaneous production of mapping used in this report which documents the projected impacts of future seal level rise. While this Plan's strategies and recommendations were developed through a planning process specific to Chesapeake Beach, they reflect an understanding of the effects of sea level rise on North Beach and compliment North Beach's own efforts to adapt to sea level rise.

## General Context and Purpose

Chesapeake Beach is vulnerable to very severe flooding associated with hurricanes, tropical storms, and nor'easters; the latest such major event was Isabel in 2003[1]. It made landfall in North Carolina's Outer Banks and followed a path northwestward through western Maryland. While far removed from the Chesapeake Bay, its winds drove a 4-to-5-foot storm surge

[1] Hurricane Isabel was just one of 39 recognized flooding events between 1996 and 2016 reported by the National Climate Data Center and one of 56 tropical storm events impacting Maryland between 1980 and 2015. (Calvert County All-Hazard Mitigation Plan, 2017).

against the western shore that swamped coastal communities including the Twin Beaches (Chesapeake Beach and North Beach). Buildings were destroyed, beaches were washed away, bulkheads, piers, and revetments were damaged, and MD Route 261, including along its frontage with the North Beach Volunteer Fire Company, was inundated and impassible[2].

The Town is also vulnerable to nuisance flooding. Such flooding is not necessarily associated with named storms and sometimes results simply from the mechanisms of the tides and excessive rainfall in a short amount of time. As recently as October 2020 a high tide breached shoreline revetments and flooded residential lots close to the Bay. It entered the Fishing Creek Marina area via the Town's public boat landing. It overloaded local storm drainage systems and flooded public streets including MD Route 261. These severe events disrupt daily activities, impede travel, and add to the standing pools of water at lower elevations along roads, in parking lots, and at Kellam's Field.

Global sea level rise is related to the release of carbon dioxide emissions into the atmosphere, the resulting warming of the oceans, and melting of glaciers and polar ice sheets[3]. It is an ongoing phenomenon and is projected to continue well beyond 2100. The combination of global sea level rise and land subsidence in coastal Maryland has raised mean high tide in the Chesapeake Bay. Historic tracking at the tide gauge at Solomon's Island records an increase of about 0.15 inches per year, or 1 foot of rise, between 1937 and 2019. Sea level rise is accelerating, and current projections indicate the Town should plan for the Bay to rise another 2.4 feet by 2050[4]--that is, the Bay at Chesapeake Beach would be 2.4 feet, or 28.8 inches, higher than it was in 2000.

Over the very long term, the rise of the Bay is projected to largely reclaim much of Town's low lying areas built on and around tidal wetlands. In so doing the remaining marshes that so define the Town's natural setting are projected to increasingly become open water at their lower elevations, and at higher elevations, to continue to migrate into developed places. With the passage of time more and more of the Town will become vulnerable to flooding. With higher water levels in the Bay, future storm surges will arrive at the Town's shoreline feet above their predecessors and logically bring more water and hazard potential. A rising Bay will place a larger area of Chesapeake Beach at risk, including existing neighborhoods, housing complexes, cultural and recreational assets, and essential infrastructure.

## **The purpose of this Plan is to provide a coordinated and long-term approach to becoming more resilient to the effects of rising water levels and the flooding associated with it**.

To be clear, this is not a master plan or an engineering design plan, intended to direct specific resources toward specific or known design challenges in the short term. Sea level rise is not that kind of problem, and the environmental and cultural setting of Chesapeake Beach

[2] Photos like the one on this page showing the aftermath of Hurricane Isabel in Chesapeake Beach are available at: https://forums.somd.com/media/albums/2003-hurricane-isabel-chesapeake-beach-north-beach.246/page-2

[3] In the Chesapeake Bay region sea level rise is also a function of ongoing Ice Age related land subsidence as the earth's plate, like a seesaw, falls in the east and rises in the northwest still feeling the effects of the glacier retreat.
[4] Sea Level Raise, 2018 Projections, Maryland Commission on Climate Change.

is not well suited to one design solution. There will be a time for project based plans and designs.

Rising sea level presents an ongoing community development and conservation challenge; one whose challenges and opportunities will evolve and thus cannot be fully understood here and now in 2023. The resources of current and multiple future generations will be called upon to address sea level rise and learning memory will be achieved. Therefore, this Plan is also meant to provide a forum of sorts -- an organizational and policy framework -- where solutions to what will be an evolving challenge can be refined, implemented, extended, or even corrected as needed, as residents, businesses, and property owners interact with the Town and its partners like the Town of North Beach, the Maryland Department of Natural Resources, and NOAA.


*Figure 1: 2003 Photo Following Hurricane Isabel. MD Route 261 (Bayside Road) at the entrance to the Volunteer Fire Company, looking north).*

## Coastal Resiliency

This Plan is about building coastal resiliency. By coastal resiliency, we mean the ability of the Chesapeake Beach community to adapt to the risks posed by sea level rise. At its heart, this is a plan for the physical adaptation of the Town to the threat of sea level rise.

Resiliency, as a term used in hazard planning generally, is more comprehensive than this plan aims for. For context, the United Nations Office of Disaster Risk Reduction refers to resiliency as the ability of a community exposed to hazards to resist, absorb, accommodate to, and recover in a timely and efficient manner including by preserving and restoring essential structures and function. This and other definitions of "resiliency" embrace notions of hazard preparedness, emergency management, rescue, and rebuilding. While this Plan touches on these elements, its focus is on physical adaptation to the risk of living along the Chesapeake Bay in areas projected to become inundated. This is less about emergency response and recovery and more about long range community planning, civil engineering, and landscape and building design.

In the future as projects are implemented there will be ongoing opportunities to further incorporate the multifaceted themes of resiliency. For example: An engineering design for a sea-wall might incorporate flexibility to readily allow strengthening at such time that live loads increase; or a storm drain upgrade might be re-routed to convey water away from its previous discharge point or be designed with much larger inlets for holding water, as a means for avoiding the mechanical pumps necessary to discharge into the Bay against projected higher tides. Resiliency must permeate all plans and designs that flow from this Plan.

## Related Plans and Studies

There are three local plans particularly relevant to coastal resiliency in Chesapeake Beach that have influenced this Plan. These are described below[5].

### Calvert County, Maryland All-Hazard Mitigation Plan

In 2017 Calvert County adopted the All-Hazard Mitigation Plan, which includes useful information on past flood events and flood risk assessments including Chesapeake Beach and North Beach. While the County Plan does not evaluate in a detailed way sea level rise and future local vulnerabilities, its research and findings have informed this Plan.

The Plan sets goals for mitigating flood hazards with special mention of concerns that towns share with the County, namely protecting critical infrastructure and facilities that residents rely on and protecting and sustaining natural resources such as tidal wetlands that function naturally to mitigate flooding damage. With respect to flood hazard mitigation planning, the County Plan incorporates input provided by the Town of Chesapeake Beach and recommends the following specific mitigation actions for the Towns of Chesapeake Beach and North Beach:

[5] Also relevant is the Calvert County, Maryland All-Hazard Mitigation Plan, adopted by the County in 2017, which also covers the Towns of Chesapeake Beach and North Beach.

- Identify natural resources that provide mitigation such as wetlands, (riparian) buffers, etc. and make them a priority for preservation.
- Continue to ensure compliance with stormwater management regulations.
- Give high priority to undeveloped floodplain areas for preservation.
- Maintain zoning ordinance provisions for protection of all hazard areas.
- Continue a community-based stormwater management program consisting in routine inspections and debris removal.

## Chesapeake Beach Nuisance Flood Plan: 2000-2025

In 2020, the Town adopted a Nuisance Flood Plan per Maryland statues which require jurisdictions that experience nuisance flooding to adopt, publish, and update a plan once every five years[6]. As defined in State law, "nuisance flooding" is high tide flooding that causes public inconvenience. Such flooding is not a product of major storm events and typically lasts only for several hours before abating.

The plan is a short-term plan intended primarily to build awareness at the local level of certain recurring flood areas, to improve the capacity of local governments to notify and warn the public about flood hazards, and to consider steps to mitigate potential hazards. The Town's Nuisance Flood Plan also provides guidance on how to document nuisance flood occurrences and sets four priorities:

- Ensure existing structures are resistant to flood-related damage, where possible.
- Create awareness of floodplain hazards and protective measures.
- Protect critical facilities.
- Prepare and update stormwater management plans.

The Town's Plan identifies three primary locations for nuisance flooding: (1) the lowest lying parts of the Kellam's recreational area and Fishing Creek Marina, (2) the northern edge of the wetland complex west of MD Route 261 and south of First Street (North Beach) (South Creek), and (3) Town-owned property along the tidal wetlands south of Harbor Road, running parallel to and west of Deforest Drive. These same areas are among the first projected to be inundated in decades due to sea level rise.

## Chesapeake Beach Comprehensive Plan

In April 2022, the Town adopted a new Comprehensive Plan that extensively addressed sea level rise through land use and natural resource recommendations. The Plan used mapping to establish the extent of existing and projected flooding, and designated parts of the Town that are especially vulnerable. It also made specific land use and zoning recommendations to eliminate or minimize development potential in areas projected to be inundated with a 2.1 foot sea level rise as well as remaining forests and forested steep slopes. The Town Council codified these latter recommendations into law through amendments to the Zoning Ordinance and official Zoning Map in 2022. Lastly the Comprehensive Plan recommended

[6] See Maryland Senate Bill 1006 from the 2018 Session of the Maryland General Assembly which amended parts of the Transportation and Natural Resources Articles of the Annotated Code of Maryland and included revision to the Coast Smart laws related to the siting and design of infrastructure in areas vulnerable to sea level rise inundation.

that this Coastal Resiliency Plan be prepared, and it adopted overall principles to guide local planning for sea level rise over the long term, as follows:

- The low-lying land, where Fishing Creek meets the Chesapeake Bay, is the very heart of Chesapeake Beach, encompassing the recreational assets and natural resources that have shaped the Town's heritage. Continued use of this area and even redevelopment is not necessarily incompatible with projections of increased flooding.

- The Town's natural environment itself can be a guide to how to manage rising water levels in Chesapeake Beach. The Town's marshes absorb storm surges and hold back floodwaters. The Town's remaining woodlands soak up rainwater reducing the severity of flooding. The Town's topography shows that the heart of Chesapeake Beach was built on and around the natural estuary of Fishing Creek.

- A long-term response to a rising Chesapeake Bay can be positive and aligned with a vision of harmonizing land with water. In a coastal town, built as a tourist destination, rising water levels can be an asset and an opportunity to build upon the Town's heritage.

- Lands that were "made" through the filling in wetlands, are the most quickly threatened by sea level rise. Allowing space for water to reclaim parts of these areas and for wetlands to migrate within them can help recreate nature's role in holding back flood waters and buffering storm surges.

- Unplanned and uncoordinated efforts to raise the elevation of the land or build structural flood defenses including seawalls, raised bulkheads, shoreline revetments, etc. are counterproductive to ongoing efforts to coordinate an effective strategy to address sea level rise. Such measures must only be undertaken in a coordinated way consistent with an adopted plan.

- Rising water levels expand the area that is vulnerable to flooding. As the Bay rises, some areas that do not flood today are predicted to flood in the future and some areas that do in fact flood today are predicted to experience more frequent and severe flooding events.

There are other important parts of the Chesapeake Beach Comprehensive Plan that have shaped this Plan and speak to coastal resiliency including the conversion of Kellam's recreational complex into a blue-green recreational and flood management area, the introduction of small parks, the preservation of resource lands, promoting walkability and public accessibility especially to the waterfront, and eliminating new residential development potential from vulnerable areas.

## Community Engagement

As part of this project the Town created the Steering Committee on Coastal Resiliency. The Steering Commission conducted four public work sessions, and three public informational

events. All the events were live-streamed and recorded.  Once the analysis and findings were assembled but before recommendations were developed, the Committee held a round of neighborhood based work sessions: one at the Volunteer Fire Company and the other at the Town Hall. Notices and invitations to each event were mailed to all residents located within the localized flood hazard areas. The Town also created a webpage for the project where documents, maps, and notices were published.

# Chapter 2 Existing Conditions

## South Creek and Fishing Creek, Chesapeake Bay Inlets

South Creek and Fishing Creek are tributaries to the Chesapeake Bay. The watersheds they drain extend far beyond the Town's borders. Their natural estuaries are among the features of Town most vulnerable to sea level rise. South Creek drains the coastal plain north of MD Route 260 including North Beach and forested lands west of the Twin Beaches. It discharges to the Bay through a tidal estuary shown in the photo below. The Chesapeake Beach Water Reclamation Plant, North Beach Volunteer Fire Company, and the Seagate residential communities are located in this estuary. MD Route 261 crosses through it.

*Figure 2: Birdseye view of the South Creek estuary*

Fishing Creek drains a mostly forested and rural landscape and meets the Bay in the traditional maritime center of Chesapeake Beach. At one time, the Creek's natural estuary covered what is today the Courtyards at Fishing Creek Apartments and Townhouses, Chesapeake Beach Waterpark, Northeast Community Center, Fishing Creek Marina, and all of Kellam's Recreation Complex.

To better understand the complexity of the Fishing Creek estuary, note the marshland grass symbols in Figure 4. They are indicating the historic extent of tidal wetlands on the west side

of MD 261 north and south side of Gordon Stinnett Avenue. Most of this has been replaced by parkland, parking lots, building sites, and streets.

*Figure 3: Birdseye view of the Fishing Creek estuary*


*Figure 4: Historic FEMA floodplain mapping showing the extent of the marsh associated with Fishing Creek.*

# Floodplains

The Federal Emergency Management Agency (FEMA) regularly maps floodplains having a 1% chance of flooding in any given year (i.e., the 100-year floodplain). These are shown in Figure 5 below for most of coastal Chesapeake Beach and the North Beach area. In these floodplains, within Town boundaries, Chesapeake Beach regulates building and land development activities through its Floodplain Management Ordinance (Chapter 149 of Town Code).


*Figure 5: Mapped FEMA Floodplain, 1% Annual Chance Flood Area*

Figure 6 below maps the existing 1% Annual Chance floodplain from MD Route 260 north to North Beach. It provides a more detailed view of the northern part of Town and the floodplain associated with South Creek.


*Figure 6: FEMA 1% Annual Chance Floodplain*

The figures below highlight separate flood zones within this above geographic area and show the base flood elevation (BFE). BFE is FEMA's estimate of the elevation of surface water resulting from the "base flood". The base flood is the flood with a 1% chance of being equaled or exceed in any given year. BFE can be thought as the minimum elevation above which a homebuilder must set the first floor to prevent water entering the home during a flood with a 1% annual chance of occurring. Figure 7 shows that the flood zone associated with South Creek has a BFE of 4 feet. Figure 8 shows floodplain that is mapped without a BFE. Figure 9 shows the flood zones along the shoreline from First Street in North Beach to 27th Street is subject to high velocity wave action and has a BFE of 8 feet.

*Figure 7: FEMA Flood Zone AO base flood elevation Is 4 feet.*


*Figure 8: FEMA Flood Zone AO base flood elevation is not mapped by FEMA.*


*Figure 9: FEMA Flood Zone VE, Special Flood Hazard Area. This area Is subject to high velocity wave action. Base flood elevation Is 8 feet.*

# Wetlands

Most of the Town's floodplain is tidal estuarine wetlands (marsh). These wetlands attenuate flooding, prevent shoreline erosion, improve the water quality of the Bay, and provide habitat for native plants, fish, and wildlife. They protect the existing settlement pattern in the historic center of Chesapeake Beach. Figure shows the wetlands in Chesapeake Beach.

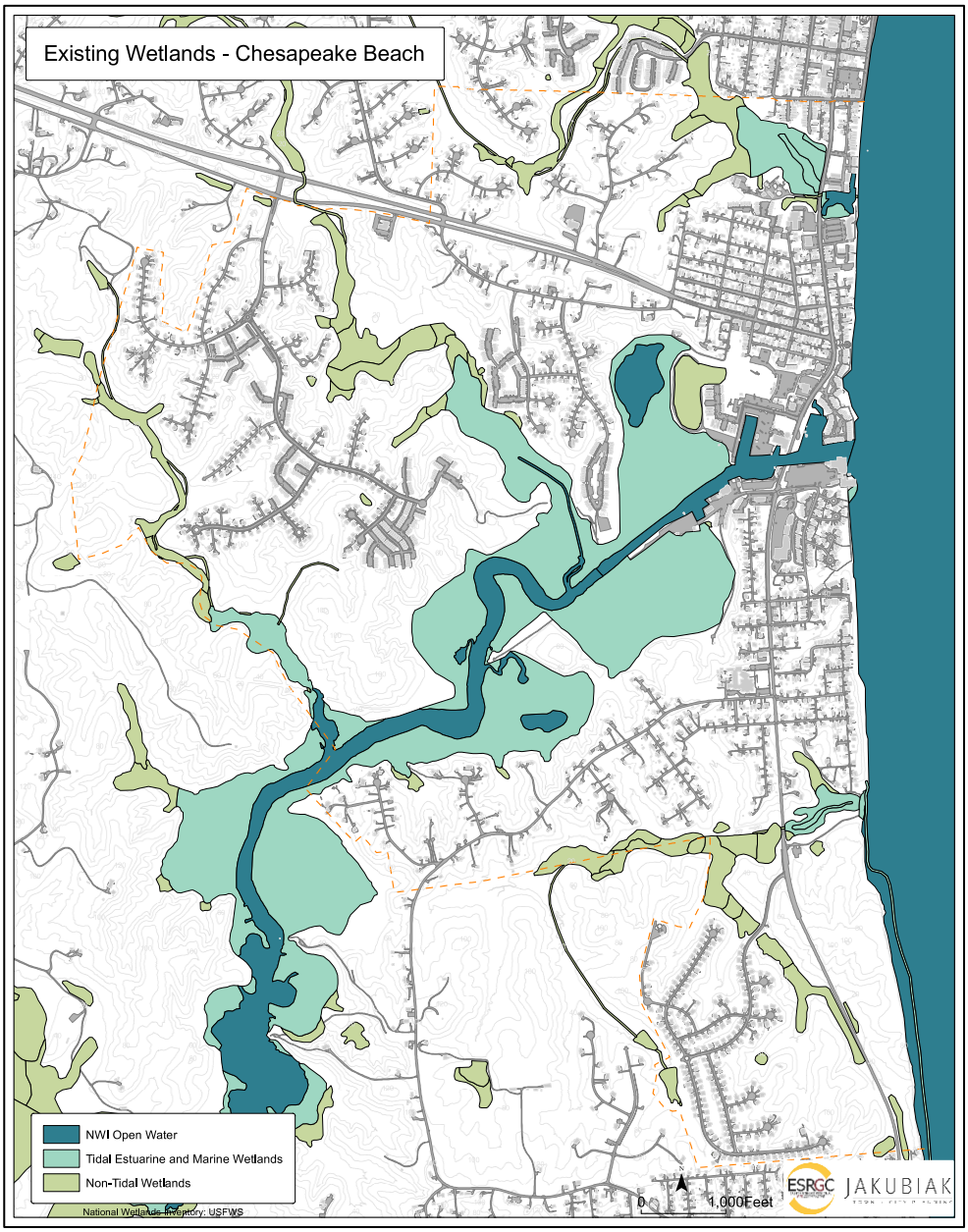



*Figure 10: Mapped Wetlands in Chesapeake Beach.*

The dominant wetland in and around Chesapeake Beach is the 92-acre Estuarine and Marine Wetland associated with Fishing Creek. Shown on Figure 10, it's the central green area on either side of Fishing Creek. This defining landscape feature consists of deep-water tidal habitats and marshes in which the bottom is both flooded and exposed by tidal action. It is also among the most scenic type of all natural resources in coastal Maryland. These marshes adjoin forested parcels, including a 200+ acre covenant protected by Forest Interior Dwelling Species (FIDS) habitat north of the Fishing Creek marshlands. Strict enforcement of this covenant and preservation of the forested areas surrounding the Fishing Creek marshlands is an essential element of local flood management.

The similar but smaller (12.5-acre) wetland complex of the same type on the north end of Town extends into North Beach and is associated with South Creek (See Figure 2.) Though it is mainly on the western side of MD Route 261, it is associated with the tidal action which is restricted to some extent by the seawall and a flood gate located between the Seagate and Horizons on the Bay housing communities.

Figure 10 also shows that non-tidal wetlands are located near both major tidal marshes. These are generally forested and extend into slightly higher elevations at greater distance from tidal action. The Town's non-tidal wetlands, whether populated by trees or just herbaceous plants, provide vital basins for retaining and filtering rainwater that flows from upland locations. The largest non-tidal wetland in Town is seven acres in size and is actually the Town's dredge disposal site. It separates Kellam's Field and the Courtyards at Fishing Creek from the Town's central tidal marsh. Even more extensive however, are the non-tidal wetland associated with South Creek (which extends northwesterly into North Beach) and along various tributary streams within the Town. These wetlands are mostly forested, and their preservation is an essential element of local flood management.

As sea levels rise, the Town's marshlands are expected to gradually transform into open water and simultaneously grow in response to both higher surface and ground water levels. Which is to say, the wetlands and marshes are dynamic; as they fill with water, they will also migrate and establish themselves where conditions are right for their growth.

## Chesapeake Bay Shoreline

Two-thirds of the Town's 2.4-mile Bay shoreline, from North Beach south to 17th Street, is safeguarded by revetments. A revetment is a permeable wall of stones set at an angle away from the water to absorb the energy of waves and protect against erosion. Only a small section of the Bay's shoreline, at the Rod 'N' Reel Resort, is protected by bulkheading. Except for this small run of bulkhead and developed shoreline, the shoreline is gently sloping and mostly planted in lawn. There are three small private beach areas, one at Windward Key, one at Chesapeake Station and another at the Rod 'N' Reel Resort. There are no naturalized or vegetated (living) shorelines or buffer zones in Town except at Brownies Beach and the Randle Cliff Natural Heritage Area.

From 17th Street southward, the shoreline becomes very steep with slopes exceeding 50%. Cliffs are a special type of steep slope, where the face of the slope rises at least 10 feet at a grade of 50% or more[7]. The cliffs extend to Brownies Beach, where the shoreline flattens out again allowing Brownies Creek to flow into the Bay. After leveling out at the Brownies Creek inlet, the shoreline rises steeply again, this time in a naturalized condition and unprotected by revetment. Here the shoreline becomes the Randle Cliffs, which is a dynamic natural landform, continually eroding by force of waves, ground and surface water, and wind.

The Maryland Department of Natural Resources has designated the Randle Cliffs and its associated upland forest a Natural Heritage Area. Its combined geological, hydrological, and biological features are considered among the best in Maryland. Habitats for three threatened / endangered species are found there[8]. The Town has protected the area with its Resource Conservation zoning.


*Figure 11: Bay Shoreline in southern Chesapeake Beach.*

[7] The tops of these shoreline slopes were subdivided and sold as building lots long before the advent of zoning. Houses and other structures now stand above the Bay, most notably along B Street. Heavy rains in recent years have caused noticeable sloughing and evoked concerns about the natural processes at work shaping the shoreline. Considering this, the Town adopted a Steep Slope Ordinance in 2018 requiring independently reviewed geo-technical studies and special stormwater management planning as conditions for future building activities.
[8] Puritan Tiger Beetle found in the intertidal zone, beach, cliff face and upland forest along Bay shoreline. Red Turtlehead (plant) found in the floodplain and non-tidal wetland areas to the west of MD Route 261. Glade Fern found in the northeast facing ravines and contiguous uplands between and above the ravines in the southwestern part of the area.

# Drainage

Drainage in low lying areas has increasingly become a challenge and the Chesapeake Beach Nuisance Flood Plan: 2000-2025 documented locations throughout the Town where residual standing water follows coastal flooding and/or precipitation events. Figures 12 and 13 show two of those locations.

*Figure 12: Standing Water at the Tot Lot at Kellam's.*

*Figure 13: Standing water on Gordon Stinnett Ave.*

There are two areas of Town, however, where major drainage systems are not operating effectively as described below and the effects are more extensive. Both would require updated engineering and significant investment. The solutions to both are integrally tied to this Plan's approach to coastal resiliency.

## Floodgate

The South Creek estuary is partially controlled by a flood gate located between Seagate (on the north) and Horizon's on the Bay (on the south). Between these communities is the eastern section of the estuary's tidal wetland which is separated from the Chesapeake Bay by a floodgate with a revetment and causeway. These features are visible in the photo below, which was taken from the northbound lane of MD Route 261. The open floodgate is in the distant center of the photo. Over time, this wetland has been converting to open water.

*Figure 14: Photo showing the floodgate.*

The floodgate, with its revetment and causeway, were intended to prevent storm surge from entering the wetland and flooding the northern part of Town, including Seagate and MD Route 261[9]. However, the floodgate is in a permanently open position, so it does not operate to prevent tidal flooding. Figure 15 shows that MD Route 261 was inundated by the October 2022 unnamed tidal event that occurred without precipitation.

During times of precipitation and upland flooding, the open floodgate is intended to allow water to flow out to the Bay thus preventing the back up of water. When there is a major coastal flooding event (like October 2022) or coastal event in combination with a rain storm—a common occurrence--the floodgate system also cannot work which among other things overwhelms the drainage system near the Seagate townhouse community.

*Figure 15: View from Sea Gate community along MD 261 frontage looking west toward the sidewalk railing on MD Route 261 which is underwater following the un-named high tide event on October 12, 2022.*

Seagate, which lies on the north bank of the wetland, contains a pumped stormwater system near the intersection of C and 31st Streets. This pump drains a sump area and discharges its water through a storm drain which outfalls about 460 feet to the south into the wetland. Presumably, the water is meant to be held in the wetland where its sediments are allowed to drop out. But, in times of coastal flooding, the water in the wetland is pushed westward over MD Route 261 (or through a culvert) whereupon it eventually moves eastward returning to the sump area to be pumped again into the wetland. This creates a continuous circular pumping scenario.

[9] That is, in the rare occurrence where there is coastal high flooding event without significant precipitation.

To avoid this, the drainage infrastructure would need to be re-constructed to pump directly to the Bay. The ultimate design solution for MD Route 261, however depends in large part of how this drainage system is reconfigured.

## 29th Street & Veterans Park

The Bayfront properties between 29th Street and Veterans Memorial Park have traditionally drained into the Bay through a series of storm drainpipes or wall openings in a bulkhead. The storm drain design for this area, which was implemented, is shown below. It is no longer effective. Note that it extends well west of MD Route 261 into the Middle Subdivision. Some years ago, the Army Corps of Engineers (USACOE) built the current stone revetment structure to protect those properties from eroding effects of wave action. In doing so, the USACOE raised the level of the structure relative to the homes and yards behind the revetment and did not modify drainage infrastructure.

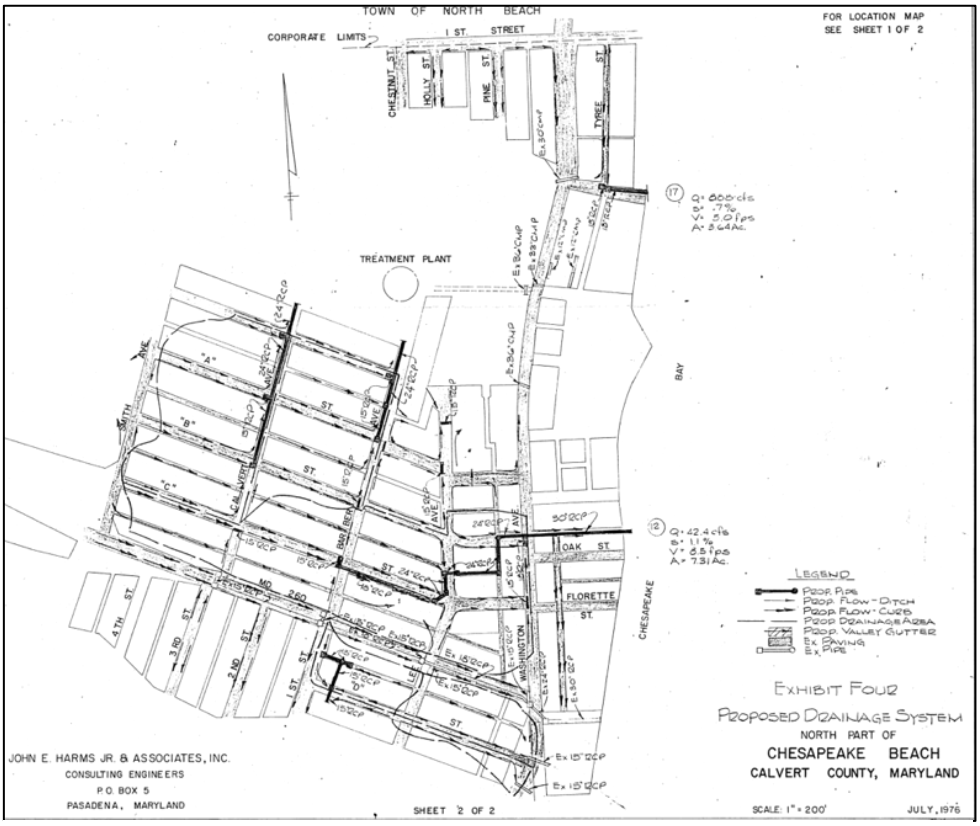


*Figure 16: Storm Drain Plan, 1976.*

Over time due to sea level rise and the raised revetment wall, both of which have prevented the discharge of water to the Bay, private property owners and the Town have found it necessary to implement incremental drainage solutions. Storm drains have been re-routed to find low areas to convey water and pipes have been elevated where possible. Also, the storm drain outlet at 28th Street and the Bay was completely plugged to prevent ponding on private property during high tide events. A comprehensive and areawide drainage assessment needs to be undertaken including videotaping the existing drainage system.

Detailed mapping is required to determine an optimal method of modernizing the drainage system in light of the sea level rise projected in this Plan.

# Chapter 3 Vulnerable Areas and Assets

## Background

Local sea level is measured at tide gauges in the Chesapeake Bay. The baseline for the sea level projections used in this report is the level recorded in 2000 at the Solomon's Island, Maryland tide gauge. When this report refers to sea level rise, it is referring to the change above the levels recorded at the Solomon's Island tide gauge in 2000. The projections of sea level rise are from the Maryland Commission on Climate Change, Sea-Level Rise Expert Group via the University of Maryland Center for Environmental Science (UMCES). The Commission's publication titled Sea-Level Rise: Projections for Maryland 2018, is the source for the projections[10]. Pursuant to State law, these projections are to be updated every five years.

### Tolerance for Flood Risk

The UMCES projects sea levels at various "tolerances for risk" and advises how these projections should be used when planning or and designing improvements. Figure 17 shows the projections for three levels of risk tolerance by decade through the year 2150.

This Plan uses maps for projected sea levels in the years 2030, 2050, and 2100 at a "low tolerance for flood risk". Figure 17 shows, for example, that in 2050 sea level is projected to be plus 2.4 feet at the low risk tolerance projection. For comparison, at the medium risk tolerance, the projection is plus 2.0 feet. At the high-risk tolerance, the projection is plus 1.7 feet. The risk tolerances correspond to the following percent probabilities that sea level will meet or exceed the stated value in a given year:

**Tide Gauge:** Solomons Island, MD
**Emissions Pathway beyond 2050:** Stabilized (RCP 4.5)

| Year | High tolerance for flood risk | Medium tolerance for flood risk | Low tolerance for flood risk |
|---|---|---|---|
| 2030 | 0.9 ft | 1.1 ft | 1.3 ft |
| 2040 | 1.2 ft | 1.5 ft | 1.8 ft |
| 2050 | 1.7 ft | 2.0 ft | 2.4 ft |
| 2060 | 2.0 ft | 2.4 ft | 2.9 ft |
| 2070 | 2.4 ft | 2.9 ft | 3.5 ft |
| 2080 | 2.7 ft | 3.3 ft | 4.3 ft |
| 2090 | 3.1 ft | 3.8 ft | 5.0 ft |
| 2100 | 3.5 ft | 4.4 ft | 5.8 ft |
| 2110 | 3.9 ft | 5.0 ft | 6.8 ft |
| 2120 | 4.3 ft | 5.5 ft | 7.8 ft |
| 2130 | 4.8 ft | 6.1 ft | 8.8 ft |
| 2140 | 5.2 ft | 6.7 ft | 9.7 ft |
| 2150 | 5.6 ft | 7.3 ft | 10.9 ft |

*Figure 17: Projections of Sea Level Rise, University of Maryland Center for Environmental Science, 2018.*

[10] Boesch, D.F., W.C. Boicourt, R.I. Cullather, T. Ezer, G.E. Galloway, Jr., Z.P. Johnson, K.H. Kilbourne, M.L. Kirwan, R.E. Kopp, S. Land, M. Li, W. Nardin, C.K. Sommerfield, W.V. Sweet. 2018. Sea-level Rise: Projections for Maryland 2018, 27 pp. University of Maryland Center for Environmental Science, Cambridge, MD. https://www.umces.edu/sites/default/files/Sea-Level%20Rise%20Projections%20for%20Maryland%202018_0.pdf

- High tolerance for flood risk: 17% probability
- Medium tolerance for risk: 1 in 20 chance, or 5% probability
- Low tolerance for flood risk: 1 in 100, chance, or 1% probability

For coastal planning purposes, University of Maryland Center for Environmental Science and Maryland Department of Natural Resources advise using projections associated with the low risk tolerance for flooding[11]. Using a low risk tolerance effectively means planning for avoidance, resistance, and the relocation of assets when adapting to flooding over time. In using a low risk tolerance, this Plan assumes that sea level rise values given for each year are unlikely to be exceeded in that year. In this way, conservative planning can be done so potentially severe consequences of flooding can be avoided, such as loss of life, public safety hazard, property destruction, and costly repair of infrastructure and buildings.

The low risk tolerance projection is used in this Plan can be explained in this way: there is 1% chance that sea level will be 2.4 feet or higher than the level recorded in 2000. It can also be explained by saying: there is a 99% chance sea level rise will be lower than 2.4 feet. Likewise, for the year 2100, the low risk tolerance projection used in this Plan means that there is 1% chance that sea level will be 5.8 feet or higher than the 2000 level and thus a 99% chance it will be lower than 5.6 feet.

If the Town were in the position now to design a new residential community, a town hall, a new water reclamation plan, or a fire company, it would adopt a low tolerance for risk for these assets. Each is vitally important and one of the design goals would be to ensure the long-term viability and safety of the asset or of public safety generally. For that reason, the Town would insist on locating and designing such assets to strictly minimize the threat of hazard. The fact that each asset type is already present in Chesapeake Beach, and located within a flood hazard area, only reinforces the need for conservative planning. In applying a low tolerance for risk, this Plan is aiming to guide adaptation of the town and such assets with the greatest concern for public safety and asset preservation.

By contrast, if the Town were now to design a new park, it would likely use a higher tolerance for risk because a park, in contrast to a fire company, can generally flood without causing major damage. In the future, as the Town and State of Maryland implement the ideas recommended in this Plan, engineers will make specific determinations about relative tolerances for risk. An evacuation route (such as MD Route 261) could be conservatively designed with a low risk tolerance and would ideally be elevated well above base flooding conditions, while a parking lot at the Kellam's Recreational Complex could be designed with a much higher tolerance for risk allowing for routine flooding without impact to public safety.

## A Word About Storm Surge

The mapping used in this Plan shows the projected extent of future "still" water—that is, open water on a typical dry-weather day in the future (2030, 2050 and 2100). The mapping does

[11] Guidance for Using Maryland's 2018 Sea Level Rise Projections, Kate McClure University of Maryland Sea Grant Extension and Allison Breitenother and Sasha Land, Maryland Department of Natural Resources, March 2022.

not incorporate the storm surge associated with hurricanes or nor'easters. Storm surge is the level of windblown water that arrives at the shoreline above the normal tide levels. In Hurricane Isabel (2003), the local storm surge was estimated to be 4 to 5 feet -- that is, the water was 4 to 5 feet above the normal tide level on that day in 2003. When one considers the mapping of open "still" water in this report, it's helpful to layer storm surge on top of that higher sea level to appreciate the extent of future risk. If, for instance, the sea level in 2050 is about 2.4 feet higher than it was during Hurricane Isabel (as projected), a comparable storm surge will arrive at roughly 6.4 to 7.4 feet above the 2003 tide level, rather than at 4 to 5 feet. This gives greater credence to this Plan's decision to use the low risk tolerance for coastal resiliency planning.

## Mapping

The Eastern Shore Regional GIS Cooperative (ESRGC) assisted the Towns of Chesapeake and North Beach with flood analyses and prepared the maps in this Plan. An ESRGC prepared document summarizing its methodology is provided in the Appendix. The ESRGC used the most current (2017) LiDAR topographic mapping data to establish land elevations, meaning that any topographic changes following 2017 were not captured on the maps presented in this report. To address this, the Town surveyed lands in 2022 known to have been raised since 2017 and updated the mapping as needed. The updated maps are not incorporated into this report but were considered in this study, presented at public work sessions, and remain available on the webpage the Town created for public review.

Maps are used in this report to explain existing or projected conditions. They are also provided at a higher resolution for more detailed examination in the Appendices. Maps are provided for the years 2030, 2050, and 2100. For the year 2100, two series of maps were produced. The first series is based on the 2100 projection for sea level rise (RCP 4.5) which assumes global society is able to stabilize carbon emissions following 2050. The second series (RCP 8.5) assumes global carbon emissions continue to grow beyond 2050[12]. This second scenario shows a greater extent of inundation and flooding than the stabilized emission scenario. Both series of maps were considered in formulating the recommendations of this Plan, but only the stabilized emissions scenario is presented in the body of this document.

The maps contain content that is particularly useful to understanding vulnerability to sea level rise. Figure 18 provides guidance for reading the maps. As noted previously, the maps show the extent of inundation in future years under dry-weather conditions. In other words, the water coverage one could expect to see on a typical dry-weather day. So, as shown in Figure 18, areas marked with the darkest blue color are projected to be open water on a typical dry-weather day.

[12] See the aforementioned report, Sea Level Rise, Projection for Maryland, 2018.

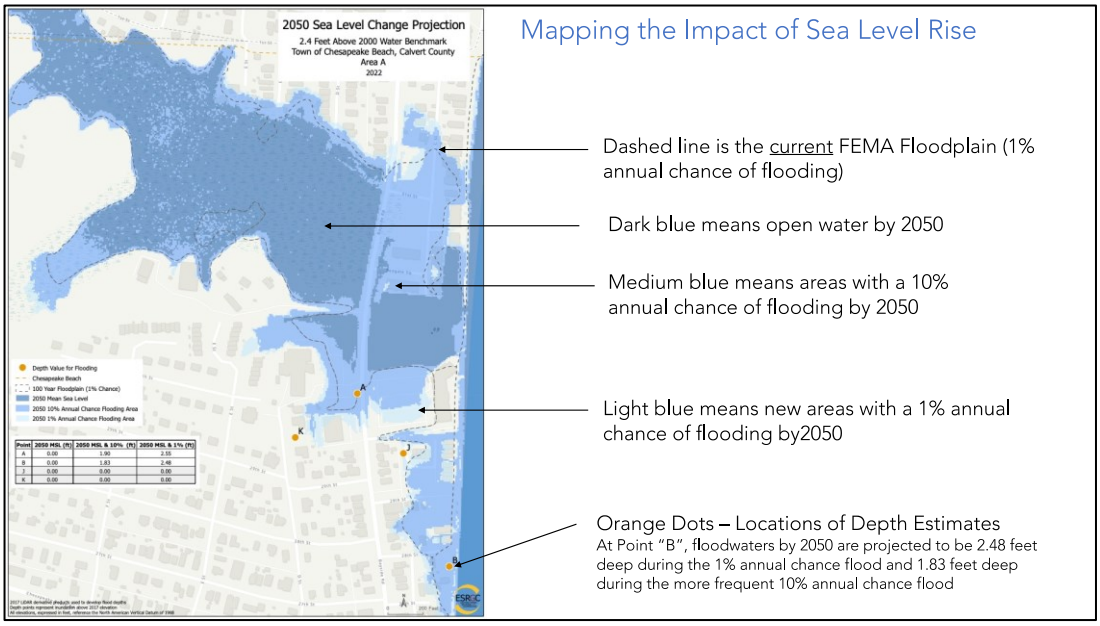



*Figure 18: A Guide to the Content on the Sea Level Rise Maps.*

It is important to note that the maps do not show the impacts of storm surges or of heavy rains which would lead to more land being covered in water, at least temporarily. To better understand the increased vulnerability to flooding that the Town's coastal areas will face in the years ahead, the maps also show the existing FEMA 1% annual chance flood area, a projected 1% annual chance flood area, and a projected 10% annual chance flood area. Land contained within 1% annual chance of flooding, would have a one in 100 chance of being flooding in the given year. Land contained within 10% annual chance of flooding would have a one in 10 chance of being flooding in the given year.

## Vulnerability Areas

To allow for detailed examination of the effects of projected sea level rise on neighborhoods, infrastructure, and community assets, this Plan focuses on three subareas within the Town (See Figure 19).

The maps that follow document the extent of future inundation, flooding, and vulnerable community assets within each of these areas. Later in Chapter 4, this Plan's recommendations are also organized by area.

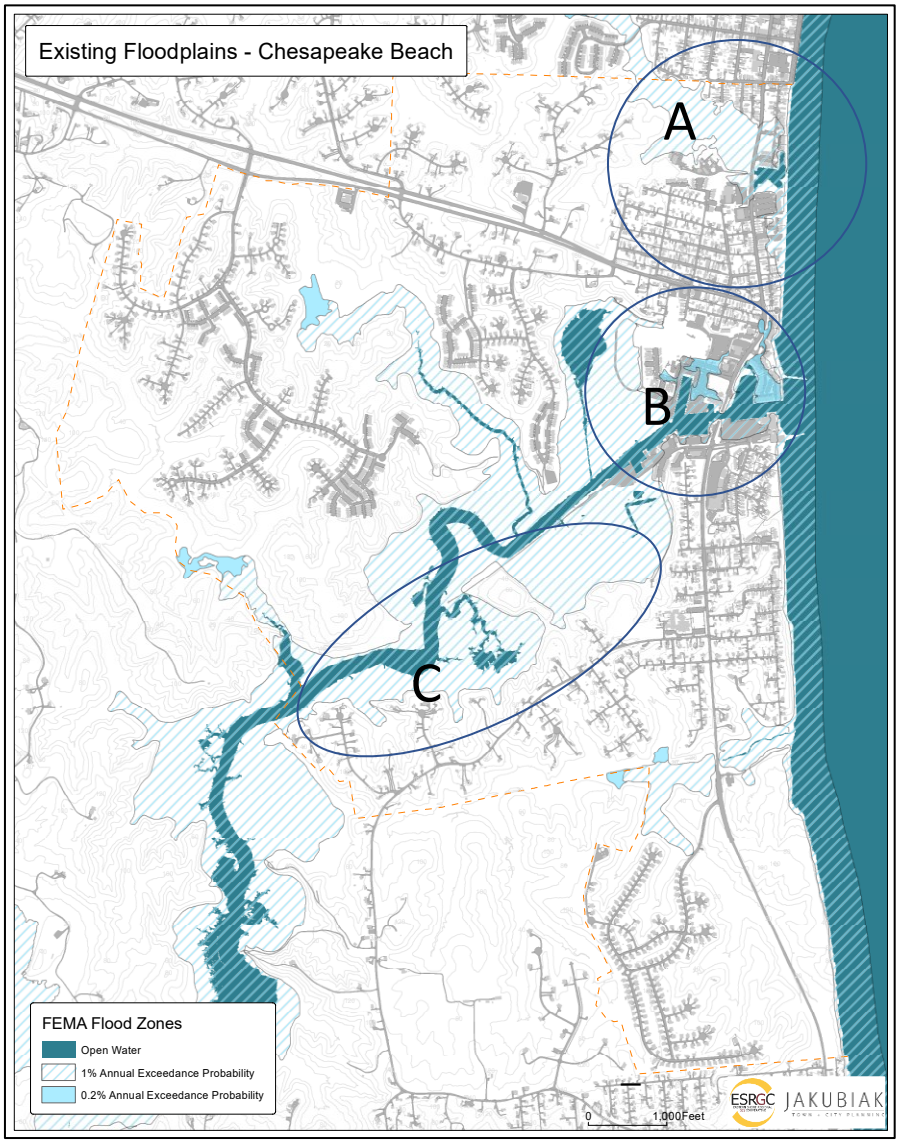



*Figure 19: Three Vulnerability Areas.*

## Area A

Area A extends from about 27th Street north to First Street. It encompasses the South Creek estuary or inlet to the Bay. Shown here is the area in 2030 (with a sea level rise of 1.3 feet), in 2050 (with a sea level rise of 2.4 feet), and 2100 (with a sea level rise of 5.8 feet. The most dramatic change projected between 2030 and 2050 is the near complete conversion of the marsh to open water. Over time the floodplain would extend both north and south encompassing residential and commercial properties that today are not within the FEMA floodplain.

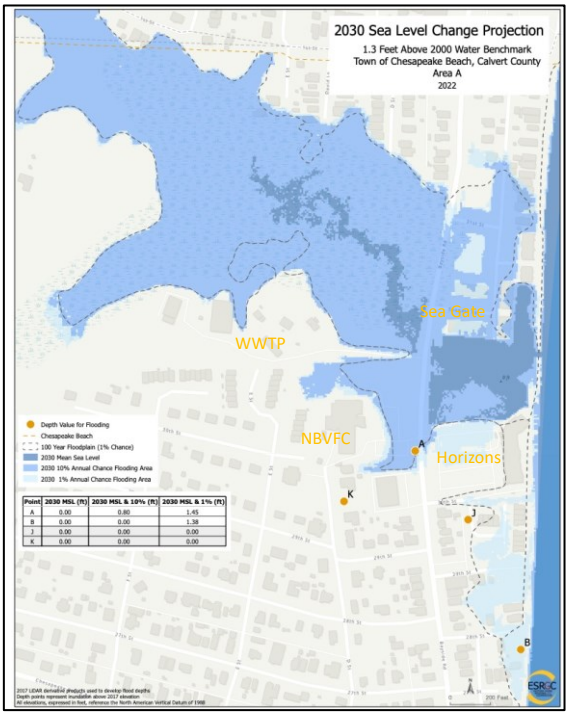



*Figure 20: 2030 Sea Level Rise Projection, Area A.*

The community assets shown in the maps are the Chesapeake Beach Water Reclamation Plant (WRP) and the North Beach Volunteer Fire Company (NBVFC). The Sea Gate residential community, consisting of 30 townhouses, is projected to be increasingly vulnerable to flooding in the decades ahead. By 2100 the area South Creek estuary is projected to be fully engulfed in water covering the grounds of Sea Gate and nearby properties.

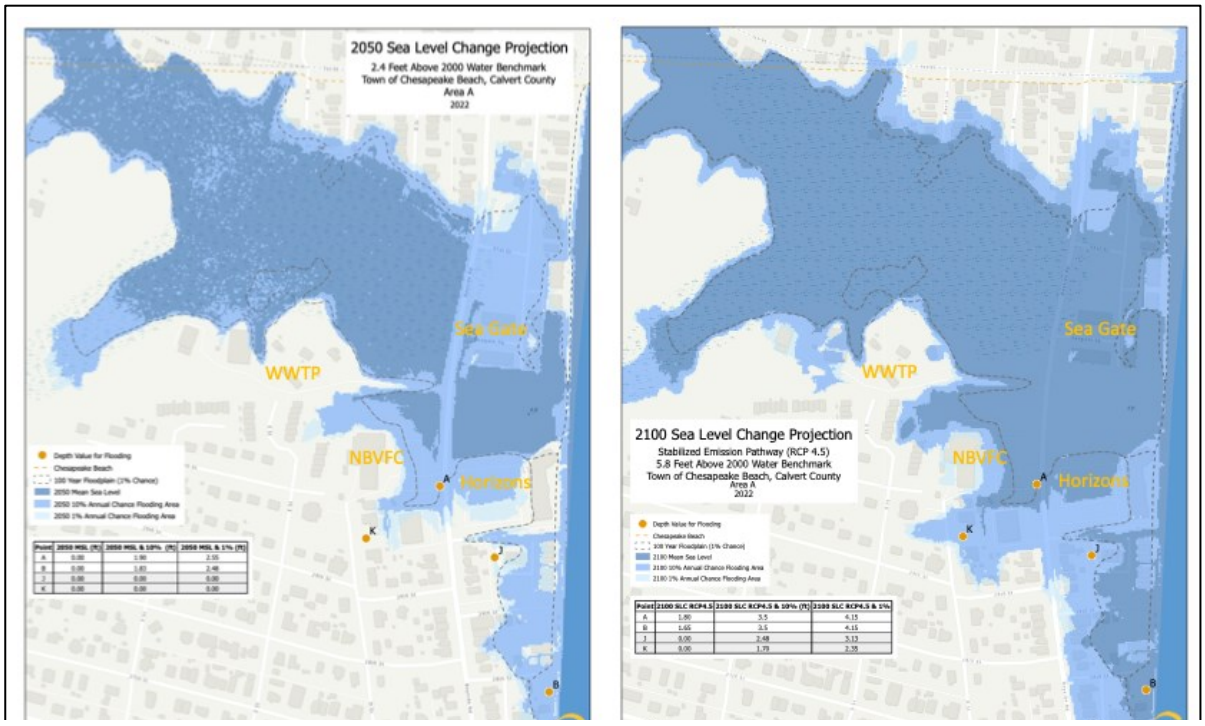



*Figure 21: 2050 & 2100 Sea Level Rise Projections, Area A.*

## Area B

Area B encompasses the historic center of Chesapeake Beach and the Fishing Creek inlet to the Bay. Shown here is the area in 2030 (with a sea level rise of 1.3 feet), in 2050 (with a sea level rise of 2.4 feet), and 2100 (with a sea level rise of 5.8 feet.

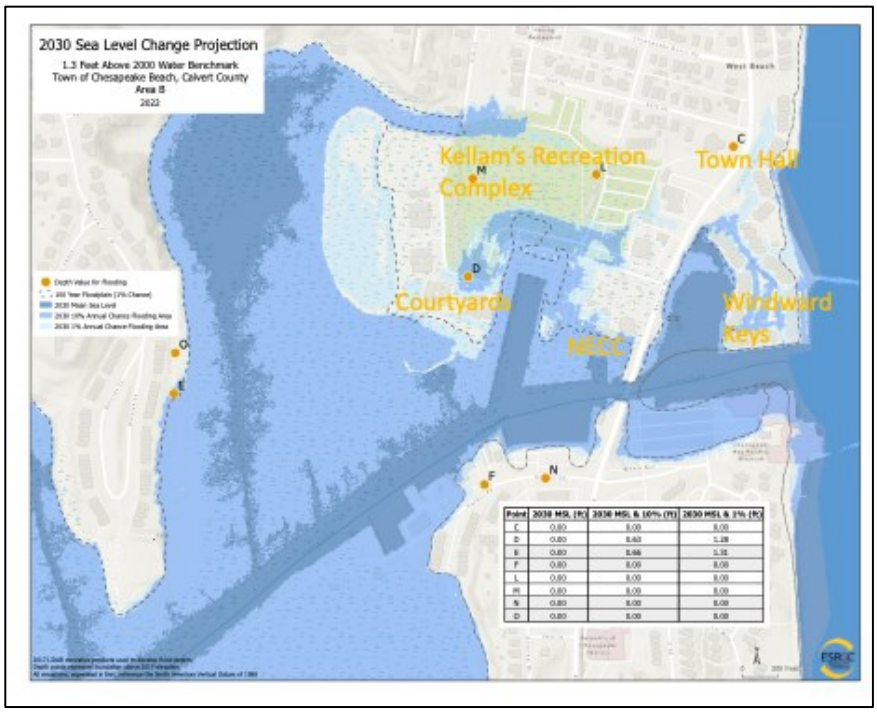



*Figure 22: 2030 Sea Level Rise Projection, Area B.*

The community assets shown in the maps of Area A are the Chesapeake Beach Town Hall, the Kellam's Recreation Complex, and the Northeast Community Center (NRCC). The Chesapeake Beach Waterpark and Public Boat Landing are also located here. The Courtyards at Fishing Creek Townhouses and Apartments (Courtyards) and Windward Key are also located in this area of Town. Both are projected to be increasingly vulnerable to flooding in the decades ahead, the Courtyards especially.

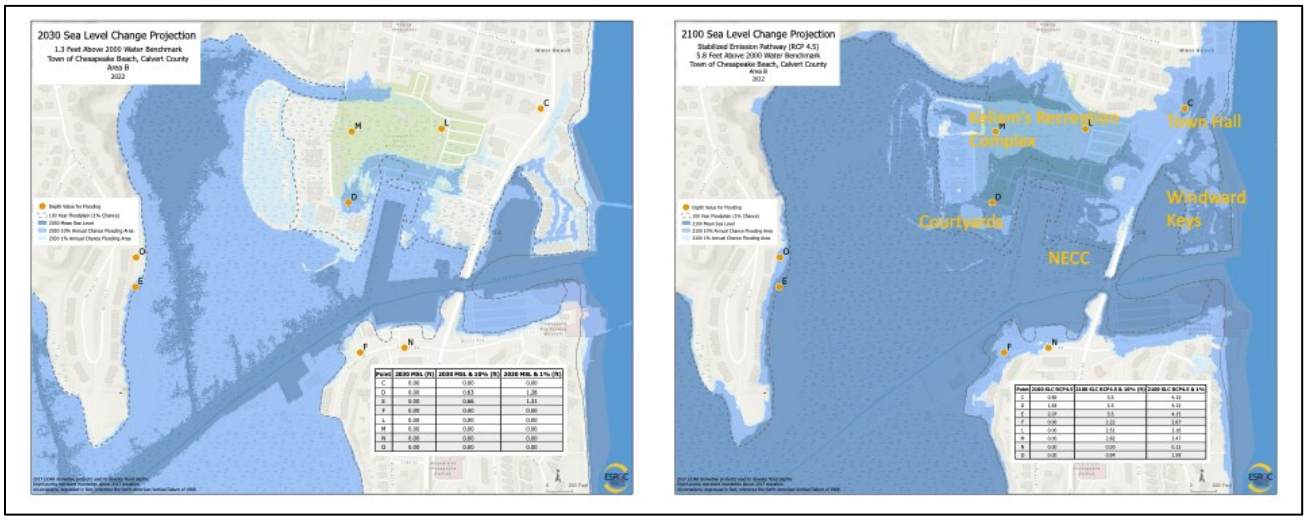



*Figure 23: 2050 & 2100 Sea Level Rise Projections, Area B.*

## Area C

Area C encompasses the southern section of the Fishing Creek marsh. Shown here is the area in 2030 (with a sea level rise of 1.3 feet), in 2050 (with a sea level rise of 2.4 feet), and 2100 (with a sea level rise of 5.8 feet.

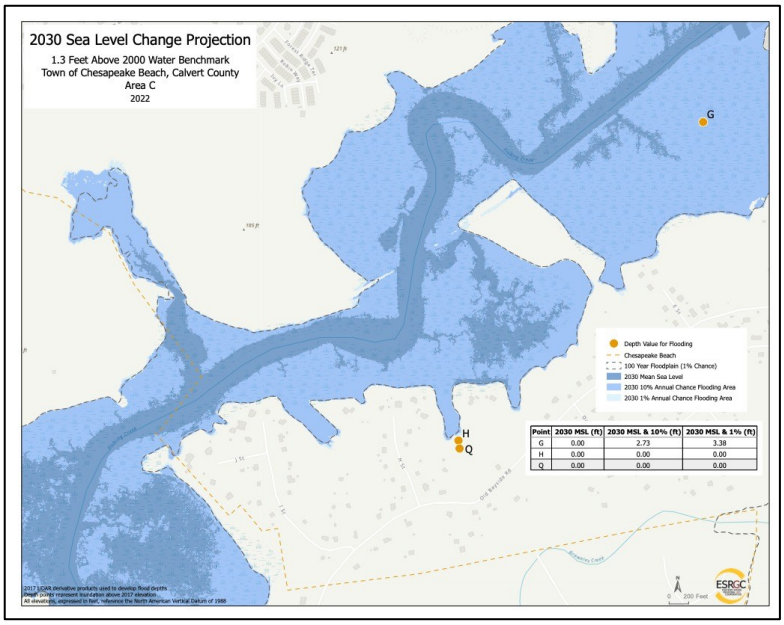



*Figure 24: 2030 Sea Level Rise Projection, Area C.*

Sea level rise in Area C is almost entirely contained within the current FEMA flood plain, through some expansion of the flood plain in lower lying areas is projected over time. This area of Chesapeake Beach is largely wooded and sparsely developed. It is zoned for low density residential development and falls within the Limited Development Area (LDA) of the Critical Area. There are no community assets here and no public streets or utilities are anticipated to be impacted by sea level rise.

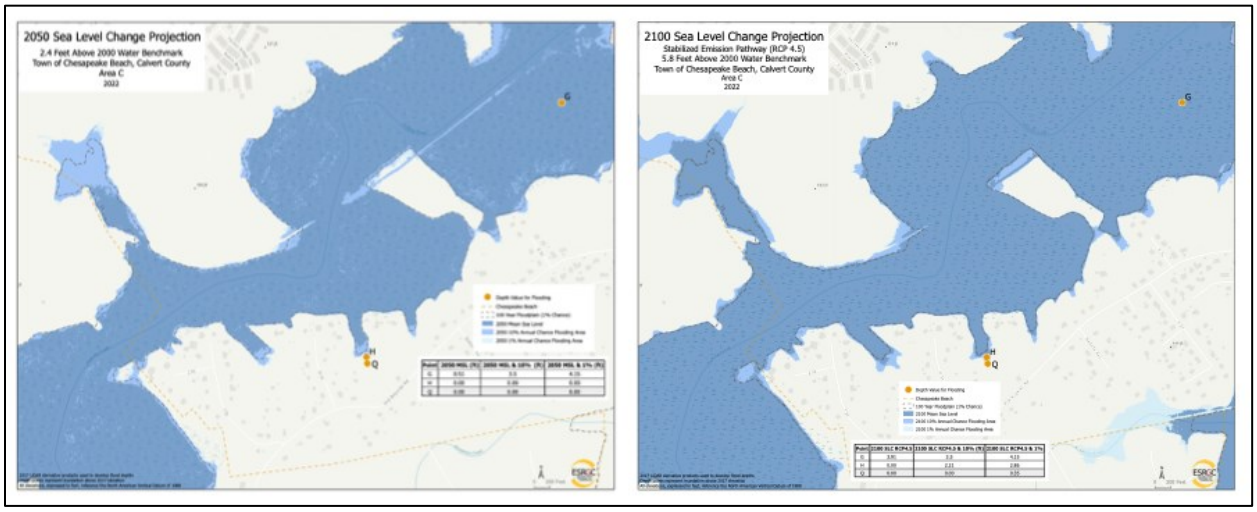



*Figure 25: 2050 and 2100 Sea Level Rise Projection, Area C.*

## Summary of Impacts

Housing developments have been built within areas and at elevations which present significant future flood hazard. Circulation within Chesapeake Beach is also vulnerable to multiple day disruptions during both tidal events and major storms. Over the long term, beyond 2050, some streets are also at risk of being permanently inundated as sea level fills low lying areas. This includes MD Route 261 between 27th Street and First Street, several Town owned streets including parts of 31 Street, C Street, D Street, E Street, David Street, and Gordon Stinnett Avenue. A major section of this road is elevated only 2.5 to 3.0 feet above the current sea level and is routinely flooded during 1% annual storm events.

Gordon Stinnett Avenue is the only access route between the Courtyard at Fishing Creek housing community and the Town street system. The Courtyards was established in 1989 under the federal Low Income Housing Tax Credit program (LIHTC) and was constructed on filled wetlands. It provides 76 units for Town households earning below the median housing income. Multiple private community streets are also at risk including those at the Courtyard at Fishing Creek, Windward Key, and Sea Gate.

Essential community facilities are at risk, including the North Beach Volunteer Fire Department, the entrance road to the Chesapeake Beach Water Reclamation Plant, the grounds of the Town Hall, and the Northeast Community Center (which is a designated hazard resource center). The entire Kellam's Recreation Complex was constructed on filled wetlands and a large portion sits at, or under, five feet above sea level. The Chesapeake Water Park is a site of significant subsidence as mentioned elsewhere in this report and its ability to function over the longer term, in the absence of resiliency solutions, is at risk due to flooding. The extent of these and other risks is explored further in Chapter 4, Action Plan Strategies and Recommendations.

# Chapter 4 Plan Strategies, Recommendations

## Overall Approach

The purpose of this Plan is to provide a coordinated and long term approach to making Chesapeake Beach more resilient to the effects of rising water levels and the flooding associated with it.

This Plan aims to be holistic in its approach. It considers the natural resource systems and the Town's settlement pattern. As documents in this report, the Town developed in a way that placed current and future populations increasingly at risk, mostly within and adjoining the tidal estuaries associated with South and Fishing Creeks. So, this Plan for resiliency is largely about retrofitting those patterns.

Solutions must be comprehensive, flexible, sensible and consensus driven. This plan for coastal resiliency is a plan about embracing the reality of the landscape and its limitations and making Chesapeake Beach safer and more environmentally sustainable, walkable, beautiful, and enjoyable. The solutions that address flood risk most optimally therefore will be solutions that provide other community benefits too.

The overall approach can be broken into two main strategic frameworks. The first is about strategic flood management and sustainable drainage. These recommendations are universally applicable within the Town's coastal areas most notably within lower lying areas at risk of flooding or permanent inundation. The recommendations include changes to the regulations that govern development activities and land use in the floodplain. The second strategic framework is about tactical retrofitting. These recommendations are location-specific and include both policy and project-based proposals. Recommendations are provided for each of the three subareas described elsewhere in this report: Areas A, B, and C.

## Strategic Flood Management and Sustainable Drainage

In order to operationalize the recommendations in this section, the Town must periodically track projected changes in sea level and map the effects of these changes on the landscape. In other words, it must update the maps presented in Chapter 3. The Maryland Commission on Climate Change Commission updates the projections every five years so the Town could periodically select and adopt a sea level rise projections, based on the Commission's published projection. With the new projections in hand, the Town could then revise its geo-spatial mapping and take account of any local topographic changes. The updated mapping would then provide the base for drawing flood hazard zones wherein certain types of regulations would apply.

Tying regulations to consensus projections of sea level rise means the regulations can be reasonably applied in the short term and adjusted over the longer term as changing conditions or improved information warrants. For now, the recommendations that follow reflect this Plan's adoption of the 2.4 foot increase (projected to occur by 2050), and the mapping which derives from that projection, and the 5.6-foot increase (projected to occur by 2100) and the mapping which derives from that.
For guidance to the recommendations that follow, note that when the recommendations refer to the "2050 Maps" or "2100 Maps" they are referring to the maps in Chapter 3 of this report. The 2050 Maps show areas of open water, areas with a 10% annual chance of flooding and areas with a 1% annual chance flooding under the assumption that relative sea level is 2.4 feet over the year 2000 baseline. The 2100 Maps show the same geographic areas and the same categories but assume relative sea level is 5.6 feet over the baseline established in the year 2000. Please refer to the maps in the Appendix.

1. Amend the Floodplain Management Ordinance (Chapter 149 of Town Code) to apply flood management regulations to all properties mapped on the 2100 Maps as a Flood Area. The regulations would include among other things applying a required minimum flood protection elevation (FPE or "freeboard"), and requiring flood resistance materials, the elevation of electrical building components, and anchoring of accessory structures. This effectively means broadening the geographic area and expanding the number of properties subject to floodplain regulations.

2. Amend the Floodplain Management Ordinance to incorporate a higher flood protection elevation (FPE, or freeboard). For all areas mapped in the higher risk 10% Annual Chance Flood Area on the 2100 Maps, the Town should require that development or redevelopment projects incorporate a FPE of at least 4.5 feet. This is 2.5 feet higher than the current 2-foot flood protection elevation required in the Town's Floodplain Management Ordinance. The extra clearance is intended to account for the projected 2.4 feet of sea level rise through 2050. This Plan assumes over time FEMA will continually update its base flood elevation and while the 2 -foot FPE should continue to be adequate generally, all properties mapped as 10% Annual Chance Flood Area, will need to adhere to this new higher standard for freeboard: 2-foot FPE plus at least 2.5 feet.

3. Amend the Zoning Ordinance (Chapter 290 of Town Code) to require that all site plans for any development or redevelopment on properties mapped on the 2100 Maps as Flood Area include certification by a Professional Engineer that all principal buildings have a demonstrated capability to withstand the storm surge associated with the Town's projected sea level rise. Specifically, for the next decade, the certification will need to demonstrate that flood tolerant construction methods would be used appropriate to the projected storm surge assumed with the 2.4-foot rise. This is the "Isabel plus 2.4-foot test". It takes the Town's experience with the last recorded Hurricane and assumes it arrives on a tide level 2.4 feet higher.

4. Amend the Zoning Ordinance (including Critical Area regulations) to require that all required stormwater management practices and techniques for development or

redevelopment projects in areas on the 2100 Maps as Flood Area be proven effective with the 2.4-foot rise in sea level assumed as a base condition. This includes stormwater management evaluations required for development activities within the Critical Area. The Town will need to coordinate with Calvert County Department of Public Works to incorporate this standard, or a comparable standard, into the Department's administration of Maryland stormwater management regulations.

Amend the Zoning Ordinance to prohibit from areas mapped as 2100 Flood Area, all group homes, convalescent centers, nursing homes, and hospitals. These uses would be especially vulnerable to coastal hazards and would present difficulties for emergency evacuation. These Zoning Ordinance amendments can be re-evaluated as mitigation measures are implemented and the projected 2100 Flood areas are adjusted.

5. Thoughtfully evaluate the Zoning Ordinance to determine what regulatory obstacles may impede property owners from raising buildings and improving their properties in ways that would protect public health and safety and advance the resiliency goal of this Plan. Examples of obstacles might include structure height, where the structure height is measured from, permitted hardscape elements, alternate entrances to a lot, etc.

## Tactical Retrofitting

This section is organized into three parts. The first describes the spatial tactics and the techniques which may be applicable within the Town generally. The second and third part describe the tactics and techniques specially recommended as applicable to Area A, B, and C respectively. Recall areas A, B, and C are described and mapped in Chapter 3.

The tactics and techniques are summarized in the framework set forth in Figure 26 below. Some of the tactics can work in coordination with each other and in fact may be codependent. All of them can be used to ensure the most effective and comprehensive approach.

| Spatial Tactic | Techniques | Description |
|---|---|---|
| **Attenuate** | General open space protection.<br>Forest preservation and tree planting.<br>Steep slope -- preservation in wooded condition.<br>Shoreline, rip rap or naturalizing shoreline. | Reduce the velocity of flood waters and increase the time water takes to move along a pathway |
| **Alleviate** | Allowing marsh migration.<br>Re-establishing wetlands.<br>Spill-overs and retention zones. | Increase the capacity to withstand floods, provide safe areas that can be flooded to limit vulnerability |

| | | |
|---|---|---|
| | Building new landforms to contain water.<br>Sustainable drainage.<br>Best Management Practices. | elsewhere, manage stormwater in all forms of development, retro-fit existing neighborhoods. Absorb. |
| **Restrict** | Building, rebuilding revetments and bulkheads.<br>Building, rebuilding floodgates and seawalls.<br>Building new landforms to block water. | Restrict the entry of water. Hold the line against flooding. |
| **Realign** | Elevating streets, sidewalks, parking lots.<br>Redeveloping neighborhoods.<br>Elevating individual buildings.<br>Managed retreat, relocating buildings and community assets.<br>Bringing about land use changes. | Reposition and thus reduce exposure by moving infrastructure and buildings, either vertically or horizontally. |

*Figure 17 Spatial Tactics and Techniques*

Attenuate. Attenuation is the foundation for the Town's coastal resilient approach. While sea level rise is a coastal phenomenon, good land use and stormwater management further inland, (in the drainage basins of South and Fishing Creeks) can reduce the Town's vulnerability to flooding. Healthy forests, especially on steeply sloped terrain and along streams, and healthy wetlands work to reduce the velocity of floodwater and increase the time it takes to flow into the lower lying areas of coastal Chesapeake Beach.

Alleviate. Alleviation is also foundational to coastal resiliency in Chesapeake Beach. The local context described in Chapter 2 of this report indicates the potential latent in the Town's natural resources to help cushion sea level rise and withstand floods. This tactic is in part about allowing natural or nature-like processes, like the migration of wetlands and sustainable drainage, to absorb floodwater so that overall vulnerabilities are lowered.

Restrict. Restricting the entry of water into critical zones through floodgates, sea walls, bulkheads, and other structures is a must in certain locations but it's viability within the unique environmental context of Chesapeake Beach is limited. Because the Town has been built on and among two estuaries, flood waters comes from the Bay while stormwater flows to the shoreline. The structures that would be required to hold back the water along the shorelines of the Bay and Fishing Creek would displace much of the Town and the drainage pipes and pumps necessary to convey floodwaters over and through those structures back to the Bay would be monumental.

Realign. Realignment is about moving things like roads, houses, business, and community assets so they can withstand flooding or avoid it altogether. Some buildings, and infrastructure can be raised so water passes under or around and some can be relocated to

safer locations. The Realign and Alleviate tactics can be especially complementary. For example, allowing tidal marshes to expand (alleviate) may depend on relocating buildings and infrastructure (realign).

Many of the recommendations assume multi-disciplinary engineering studies and design work. Teams of experts in coastal engineering, structural engineering, hydrology, infrastructure, land planning, landscape architecture, and town planning would be called upon. These studies would be conducted under the guidance of this Plan, and they would in turn help refine and detail this Plan as they are completed and accepted. Detailed engineering, particularly at the scale of small areas or even individual properties, may reveal actual elevations of some locations that differ from the geo-spatial assessments shown in this Plan. These findings will, of necessity, inform how the recommendations of this Plan are refined and detailed.

# Area A

## Overview

As described elsewhere in this report, Area A is dominated by the confluence of South Creek and the Bay and home to essential community assets and residential communities. The prominent scenic and environmental feature in Area A is the South Creek tidal marsh which now extends along the west side of MD Route 261 roughly from the entrance to the Volunteer Fire Company north to 31st Street. On the east side of the roadway, the marsh is hemmed in by Seagate to the north and Horizon's on the Bay to the south. The blue lines on Figure 27 show the approximate limits of land projected to become mostly open water through this century. This is an area of heightened concern.


*Figure 26: Defining the limits of the South Creek Estuary for planning.*

The sea level rise mapping in Chapter 3 shows that relative sea level rise is projected to render much of the area between the blue lines in the figure above permanently inundated in still water conditions. Even by 2050, the marsh that exists today is projected to be open water and the edges of that marsh are likely to have migrated further north and south in response to expanding high water tables. Future storm surges (on par with the hurricanes of the past) would be far more devasting to any structures not substantially elevated or capable of floating. For context, Hurricane Isabel is reported to have soaked the insulated undersides of the elevated first floors in the Seagate community when its storm surge passed under the townhouses in 2003.

The optimal long-term approach to coastal resiliency in this area is to allow, to the greatest extent possible, the natural functions of the estuary to be re-established and to prevent the introduction of any residential population. How that might optimally be achieved over the decades ahead will depend on considerable consultation with all parties including residents, property owners, and the Maryland Department of Transportation, State Highway Administration. Holding back the water in this area with structures along the Bay or along the marsh is not practical for every situation and maintaining essential community services and infrastructure to the limited population over the long term could prove exceedingly challenging.

As this area continues to flood and transform, the potential for property damage and risk will rise. This subarea within Area A is subject to flooding from both the Chesapeake Bay to the east and South Creek to the west. Consequently, the existing development (especially residential uses) within this subarea of Area A will require much study and consultation with property owners in the decades ahead. Some of the potential responses that flow from the realization that this estuary may become open water are:

- Access to the North Beach Volunteer Fire Company would need to be modified in conjunction with realignments to MD Route 261 to ensure the entire service area could be supported.

- MD Route 261 would need to be reconstructed as a bridge over the marsh/open water, allowing for safe travel over the marsh and the freer movement of waters to and from the Bay while protecting the vital transportation needs between North Beach and Chesapeake Beach. The question of costs and feasibility would need to be studied.

- The access route to the Water Reclamation Plant would need to be elevated significantly in combination with MD Route 261, or if that is not practical, a new access route would need to be developed likely to the south side of the facility from a point north of 30th Street. The ground of the treatment plant itself, while at increased risk of flooding, is elevated above projected inundated levels even in 2100.

- Many of the residences on C Street would be surrounded by water on both their Bay and street sides and subjected to hazardous conditions. At minimum, C and 31st Street and the infrastructure and utilities within their rights-of-way would need to be reconstructed and raised to considerably higher elevations, which would affect driveway access to adjoining properties.

- The residences along the north side of the marsh would be flooded and a wide band of homes extending from the marsh would be subjected to hazardous conditions. The southern ends of E Street, David Street, and D Street are projected to be inundated making vehicular access to the houses closest to the marsh impractical. The ends of these streets collect the drainage flowing southward from First Street and they encounter the northern overflow from the marsh. Mitigation techniques such as berms and/or a functional flood gate might be possible to direct increased flooding away from these areas.

- Engineering studies that are conducted to evaluate solutions related to MD Route 261 should also consider the effects on the townhouses in the Sea Gate community and the surrounding area. This area is projected to be surrounded by water with the private streets and grounds fully inundated. The October 2022 tidal events foreshadow this condition (see Figure 15 in Chapter 2 under the heading Drainage).

## Recommendations for Area A

The following recommendations are intended for the next 10 years.

### *Attenuate Recommendations*

Land preservation in the South Creek watershed is essential. The adopted 2040 Comprehensive Plan designated most of the remaining stands of forest within Town boundaries for resource conservation. Following the adoption of the Comprehensive Plan in 2022, the Town Council adopted zoning ordinance amendments and a new map which largely removed development potential from these areas and rezoned them "Resource Conservation".

Moving forward, the Town should seek to minimize any further forest removal through adjustment to its zoning regulations, implement recommendation for an urban forest program to increase forest cover within the watershed, and coordinate with Calvert County and North Beach to ensure continued preservation and appropriate land use strategies in the parts of the watershed that extend beyond town limits.

### *Alleviate Recommendations*

1. Through 2050, facilitate outward migration of the South Creek tidal marsh. To the north, allow the growth toward E, David, and D Streets. This can be optimally accomplished by coordinating with the most impacted property owners to buy out impacted owners and convert the land to open space. On the south side of the marsh, wetlands are migrating into the Volunteer Fire Company and its parking areas. Identifying near-term and long-term solutions for preserving emergency services to the Twin Beaches via the North Beach Volunteer Fire Company should be prioritized and evaluated for financial feasibility. Application of State and federal regulations preventing the disturbance of tidal wetlands and wetland buffers must continue to be enforced along the edges of the marsh. Development activities in this area are further restricted by the Town's Critical Area regulations.

2. Assert rightful public ownership and maintenance of the 20-foot-wide historic trolley right-of-way that runs along the east side of MD Route 261. The section from First Street in North Beach to 31st Street is shown in Figure 15 . This area may be used for flood management as conditions and opportunities warrant and/or to provide space needed by the State Highway Administration to elevate MD Route 261. Prevent the

encroachment of any further private development activities within this area and coordinate with adjoining property owners to eliminate the several private structures (sheds, fences, and similar structures) that have been constructed on this public land.

3. Incentivize or require the retrofitting of parking lots in Area A and to the extent possible convert unneeded parking area to open space for flood management. Figure 28 shows an example.

*Figure 27: Image of parking lot providing stormwater management.*

4. Address the drainage issue at Seagate and the storm drainage pump at 31st and C Streets, which is described in Chapter 2 of this report. The design should align with the long-term objective of allowing natural processes to work in this area and be designed in combination with other sustainable methods to absorb stormwater while protecting public safety. Any option that makes public health and safety dependent on a mechanical solution must also have built-in redundant systems which are preferably nature based and include substantial physical space for the alleviation of flood risk.

*Restrict Recommendations*

1. Elevating the revetment along the bayfront in Area A over the next decade is recommended between 30th Street and 27th Street (see Figure 29). This area is presently subject to coastal flooding, is projected to have a 10% annual chance of flooding by 2050 and have a much higher likelihood of being open water by 2100 absent a solution.

   The area of Town is not directly connected hydrologically to the South Creek tidal marsh which is just north so a higher revetement along the Bay stands as a viable option. In other words, a physical barrier at this location will not impede the discharge of water from South Creek to the Bay.

   
   
   *Figure 28: Flood Zone from 30th Street to 27th Street.*

   However, any elevation of the revetment in this area should be evaluated against any planned changes to the land, structures, and infrastructure immediately behind the revetment. Any master planning efforts for this area should specify a recommended elevation of the land, the minimum elevation of structures, the location and vertical alignment of drainage facilities, standards for sustainable development and building construction, the assignment of private and public costs, the allotment of land for public and private open spaces, and broad public access to and along the Bay front. Elevating the revetment is best performed in conjunction with a plan for raising the land and/or structures, creating open spaces, and enhancing public access to the water. This Plan does recognize that the revetment could be raised, especially in the short term to dissipate projected wave energy, prior to the implementation of the aforementioned plan.

2. Conduct an engineering study in coordination with the State of Maryland to determine how much longer the floodgate in its current configuration can remain viable and investigate the optimal solutions for flood control in the area. This Plan foresees the gradual transformation of the South Creek estuary into open water and marsh and that a combination of natural and manmade solutions will be necessary.

*Realign Recommendations*

1. Evaluate a spectrum of solutions for preserving facilities and transportation to the current North Beach Volunteer Fire Department location and prioritize preserving emergency services to the Twin Beaches for funding.

2. Reconstruct MD 261 through Area A. The optimal design for reconstruction would emerge after significant engineering studies, but this Plan recommends that the elevated roadway or bridge be constructed as the top priority of this plan, acknowledging that this vital transportation link has a low tolerance for flood risk. The optimal design will incorporate pedestrian and bicycle facilities.

3. Use voluntary purchase and removal plans to remove houses located along the north side of the marsh and return the land to open space use allowing the marsh to expand.

   While the ultimate location of retreat lines may differ based on more precise elevation surveys, Figure 30 shows planned "managed retreat lines" signifying roughly the properties that could be eligible for a purchase and relocation option over time. The Town should consider making the first purchase offers to those properties between the marsh and the 2050 Managed Retreat line shown.


*Figure 29: Managed Retreat Lines*

4. Ensure any future development on the open parcels in Area A, especially within the subarea between the two blue lines in Figure 27, occurs in concert with any planned mitigation efforts in the surrounding area, this could potentially require revisions or caveats to the Town's Zoning Map and Zoning Ordinance.

Alternatively, or in combination with the above, the Town and/or State could acquire the land for parkland and flood management. In the meantime, the Town should adopt the recommendations in the prior section of this Chapter under the heading Strategic Flood Management and Sustainable Drainage and strictly minimize the risk to future residents and the impact to local flooding conditions in light of the sea level rise projected in this Plan.

5. Conduct a study to determine the practical and financial feasibility of elevating the Sea Gate community and the neighboring residences. As recommended in the Chesapeake Comprehensive Plan, the Town should also be open to modern construction techniques that allow housing to be flexibly designed to adapt to floodwaters. For example, modern flood adapted houses can be anchored to the land but made capable of rising and falling with the tides and flood waters. Flood resilient houses, as diagrammed below, are already constructed throughout the world and may be viable in this location.

# Area B

## Overview

As described elsewhere in this report, Area B is where Fishing Creek meets the Bay, the mixed-use town center. It is home to assets including the Town Hall and the Northeast Community Center, emergency command and control and evacuation centers, respectively. The following recreational assets are located here too: Chesapeake Beach Waterpark, Kellam's Recreational Complex, the Public Boat Landing, and the Chesapeake Beach Railway Trail. The area is also home to maritime and other commercial activities including a hotel and restaurants, two large residential communities, and a standalone apartment building at the end of Harbor Road.

Fishing Creek has been channelized and much of the once extensive marsh was filled and is now the Kellam's' Recreational Complex, Fishing Creek Marina, and Courtyards at Fishing Creek Apartments and Townhouses. The Fishing Creek channel is routinely dredged, and the spoils are deposited at the dredge disposal site located in the marsh along the western edge of the Courtyards at Fishing Creek complex. The Town has documented surface subsidence of up to 16 inches over 15 years at Kellam's, the Northeast Community Center, and along the right-of-way of Gordon Stinnett Avenue.

The optimal long-term approach to coastal resiliency in Area B is to allow the natural functions of the estuary to become re-established, where appropriate, while sustaining the maritime mixed-use center. Through zoning changes adopted by the Town Council in 2022, the development of new residential uses is no longer permitted in Area B. The existing residential communities are at risk and considerable consultation with all parties will be needed in the decades ahead to address the effects of flooding.

In Area B Fishing Creek has been channelized and the land along its edge has been developed intensively. In these locations, property owners have found it necessary in recent years to raise bulkheads and elevate land. For this reason, even with a 2.4-foot sea level rise, open water is projected to mostly be contained within the channelized Fishing Creek, the boat inlets, and the boundaries of the marsh. As shown on Figure 32 below, the marsh itself is projected to be almost entirely open water by 2050.

While the extent of open water coverage would be limited through 2050, the areal extent of recurring flooding is projected to be substantial by 2050. All the aforementioned community assets, Gordon Stinnett Avenue, and the private streets and grounds of the Courtyards at Fishing Creek and Windward Key, are projected to have a 10% annual chance of flooding. Through 2050, The Kellam's Recreational Complex is projected to flood from both the north and the south leaving a 250-foot-wide strip of slightly higher elevated ground just above the floodplain. The 2100 Maps in Chapter 3 show that open water would extend quite far into the Recreational Complex with the projected 5.6-foot rise. The depth of the 10% annual chance flood on the remaining land area at Kellam's would exceed 2.5 feet in 2100.

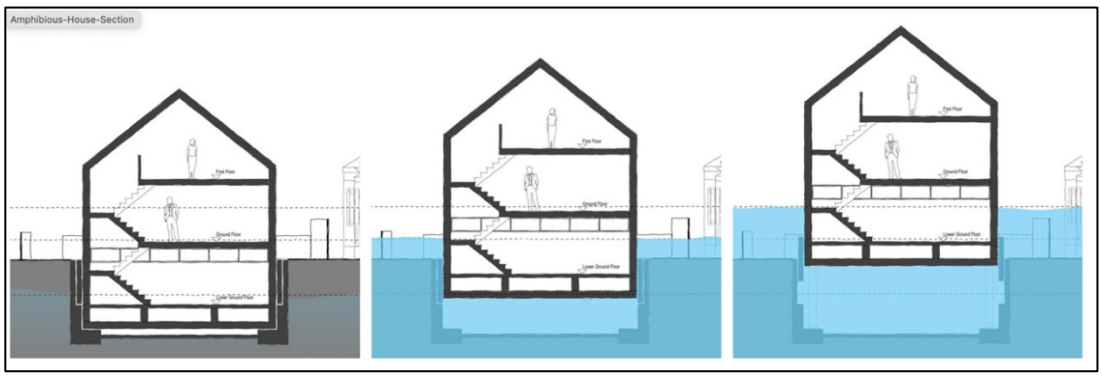



*Figure 30: Source of illustration is Bacca Architects London, Amphibious House.*

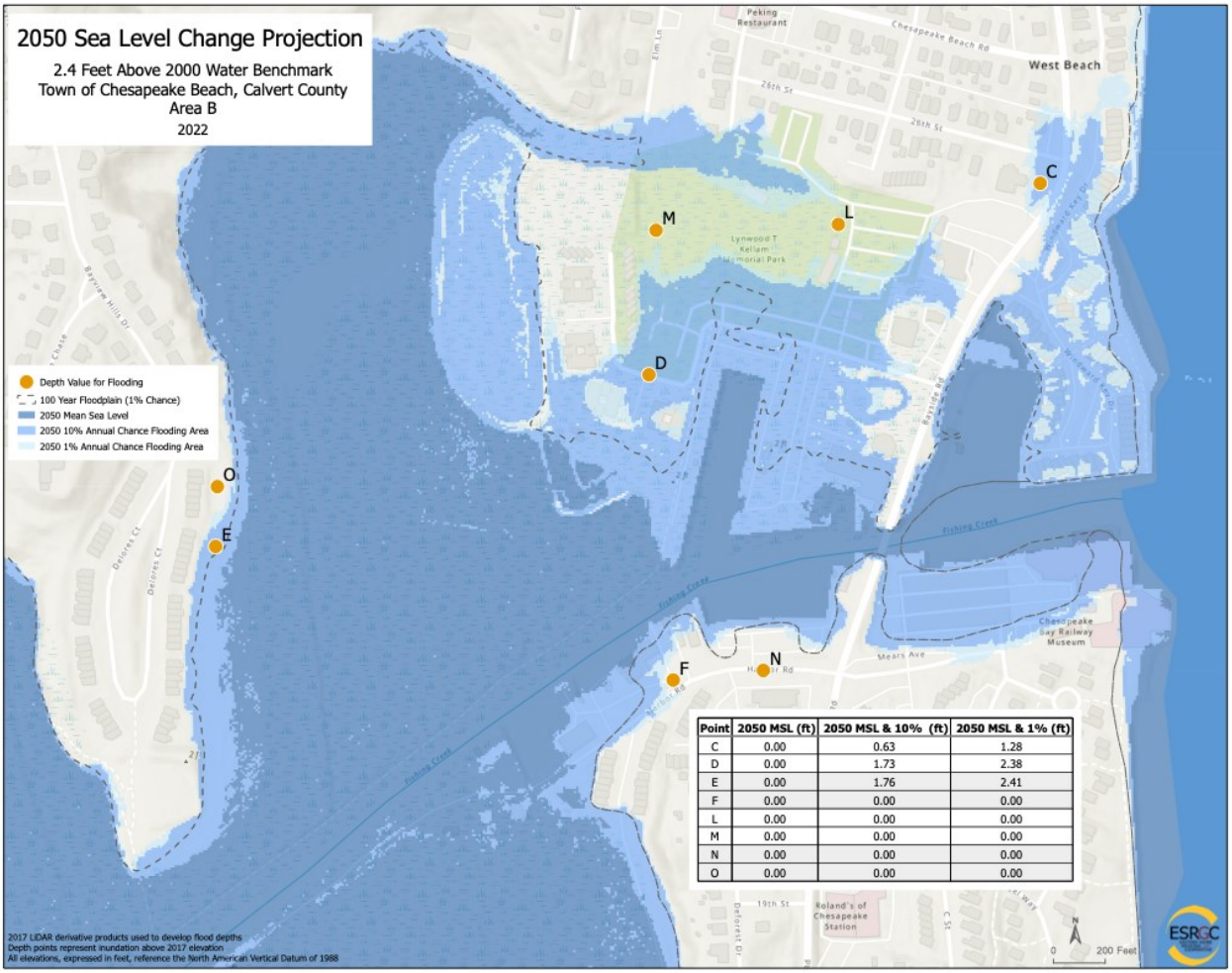



*Figure 31: 2050 Sea Level Change Projection Map*

The entire shoreline of Fishing Creek and its boat inlets is structurally supported until the shoreline merges with the natural marsh west of Fishing Creek Marina. All of it is owned privately except for the Public Boat Landing which is owned by the Town of Chesapeake Beach. The boat landing is a break in what is otherwise a solid structure currently containing the water. The October 2022 tidal events demonstrated how far water can enter through the boat landing and it foreshadows permeant conditions if no changes are made.

The private structures along the north side of Fishing Creek and the Fishing Creek Marina help protect Kellam's Complex. There are no structures along the western edge of the marsh and flood protection afforded to the Courtyard's housing project is partly a function of the elevated dredge spoils site. Elevating the existing structures and building new structures and/or landforms would be needed to secure Courtyards at Fishing Creek and the Kellam's Complex against projected sea level rise.

As this area continues to flood and to transform, the potential for property damage and risk will rise. Whether the existing residential development within this Area B can be sustained, and in what form, will require much study and consultation with property owners in the decades ahead.

## Recommendations for Area B

The following recommendations are intended for the next 10 years.


*Figure 32: View of Area B.*

### *Attenuate Recommendations*

Land preservation in the Fishing Creek watershed is essential. The adopted 2040 Comprehensive Plan designated most of the remaining stands of forest within Town boundaries for resource conservation. Following the adoption of the Comprehensive Plan in 2022, the Town Council adopted zoning ordinance amendments and a new map which largely removed development potential from these areas and rezoned them "Resource Conservation". Additionally, the Comprehensive Plan recognizes the importance of protecting the forested lands identified as the FIDS Protective Area.
Moving forward, the Town should minimize any further forest removal through adjustment to its zoning regulations, implement recommendation for an urban forest program to increase forest cover within the watershed, and coordinate with Calvert County to ensure continued preservation and appropriate land use strategies in the part of the watershed that extends beyond town limits.

### *Alleviate Recommendations*

Beginning now and carrying through 2050, use landscape design and civil engineering to gradually adapt to rising water and flooding conditions in and around the Kellam's Recreational Complex. Wetlands would be allowed to migrate and gradually evolve from newly planned spillover areas (flood retention zones) to

*Figure 33: An imagined blue-green park excerpted from the Comprehensive Plan.*

*Figure 34: Blue - Green Approach at Kellam's Recreational Complex.*

open water, contained by berms and other landforms.

The goal would be to merge both flood management and recreation into what would be a large blue – green park as generally imagined in the image in Figure 34. This Plan recommends beginning a master plan process within the next couple of years to establish the feasibility and engineering parameters and then to begin phasing the work by the end of this decade.

The basic idea is conceptually rendered for Kellam's in Figure 35. Areas shaded blue are projected to be open water in the decades ahead which would be contained by berms and

other landforms (the green lines)[13]. The dredge spoil site has potential to be incorporated into this design approach. The new landforms (along with drainage solutions) could then sustain an open area for ballfields and other activities, which itself could safely accommodate periodic flooding.

The created landforms could become part of the park experience. Figure 36 below shows a recreational cycle track which could become an integral element of a blue - green park and the adjoining Chesapeake Beach Railway Trail.

*Figure 35: Source, American Ramp Company. A potential recreational use for the landforms that would be established to help protect Kellam's Recreational Complex.*

### *Restrict Recommendations*

1. This Plan assumes private property owners will continue to maintain and as needed elevate the bulkheads which line Fishing Creek and secure their marinas and commercial properties. The Plan supports these efforts, but as noted in Chapter 5, this Plan endorses the Town's Comprehensive Plan recommendation that the Town Council re-establish the Chesapeake Beach Board of Port Wardens to provide oversight to these projects in conjunction with the Planning Commission approval processes. (See Chapter 290 of the Town Code, Article IX).

2. This Plan also assumes that the Windward Key Homeowners Association will secure its property against coastal flooding which may be expected in future decades to come over and through its current revetment and bulkheads. Since the property is not

[13] As drawn, this approach might possibly help sustain the Courtyards at Fishing Creek Apartments and Townhouses, which would also require the elevation of Gordon Stinnett Avenue and supporting infrastructure. However, the low-lying conditions and the fact that the property was developed on wetlands raises questions about the viability of this property as a residential community over the long term. A recommendation for considering relocating the housing to a safer location in Town is discussed later.

directly threatened by upland flooding, overflow of the marsh (at least for the foreseeable future), or wetland soils, these efforts should secure the neighborhood against major flood hazard. These efforts could also have the ancillary benefit of protecting the Town Hall (at MD Route 261 and 26th Street), which receives coastal inundation in large tidal events that passes through the Windward Key property. The HOA should initiate and plan for these upgrades.

### *Realign Recommendations*

1. Evaluate a spectrum of solutions for preserving the Northeast Community Center, the Chesapeake Beach Water Park and continued transportation access to each.

2. Study the range of options to mitigate potential flooding of Gordon Stinnett Avenue as part of a Master Planning effort in Area B and/or the development of a replacement access route. The full length of the current road is the only means of vehicular access to the western side of the Fishing Creek Marina and Courtyards at Fishing Creek Apartments and Townhouses. Maintaining public street access to these two properties will require substantial costs for reconstruction and maintenance. The Town needs to decide the feasibility of elevating the road and its infrastructure, or of building an alternative road, and how such a project might be incorporated into a long term approach to flood management.

3. The Courtyards at Fishing Creek Apartments and Townhouses was established in 1989 under the federal Low Income Housing Tax Credit program (LIHTC). The 76 units in the development are set aside for households making less than 60% of the area median household income and rents are generally capped at 30% of a household's income. The development thus meets an important housing need in Town, but it was constructed on filled marsh and at an elevation that puts the residents at risk over the long term. Evaluate a spectrum of solutions for preserving this critical housing and the associated infrastructure supporting it.

4. Redesign the Public Boat Landing. The net effect of subsidence and sea level rise is already compromising the functionality of the landing. During high tides and storms, the Landing allows water to enter the southeast side of the Fishing Creek Marina and flood the parking lot and access drive.

5. Study and evaluate the infrastructure needs that support vital assets in this area, inclusive of water distribution, sewer services, roads, and electric transmission.

## Area C

As shown in Chapter 3, Area C includes the southwestern extent of the Fishing Creek marsh within the Town. The area of concern encompasses the residential properties north of Old Bayside Road at the ends of E, H, I, and J Street.

Figure 37 shows that the open water is projected to be contained largely within the exiting FEMA 1% Annual Chance Floodplain with the projected 2.4-foot rise. However, the encroachment of ground water and periodic flooding may potentially degrade the on-site septic systems in the rear yards of these properties. The Town's long-term plan is to connect these residences to the public wastewater collection system. Sea level rise may hasten this. This Plan recommends that the Town and the Calvert County Department of Health coordinate with property owners through the next decade to track conditions.

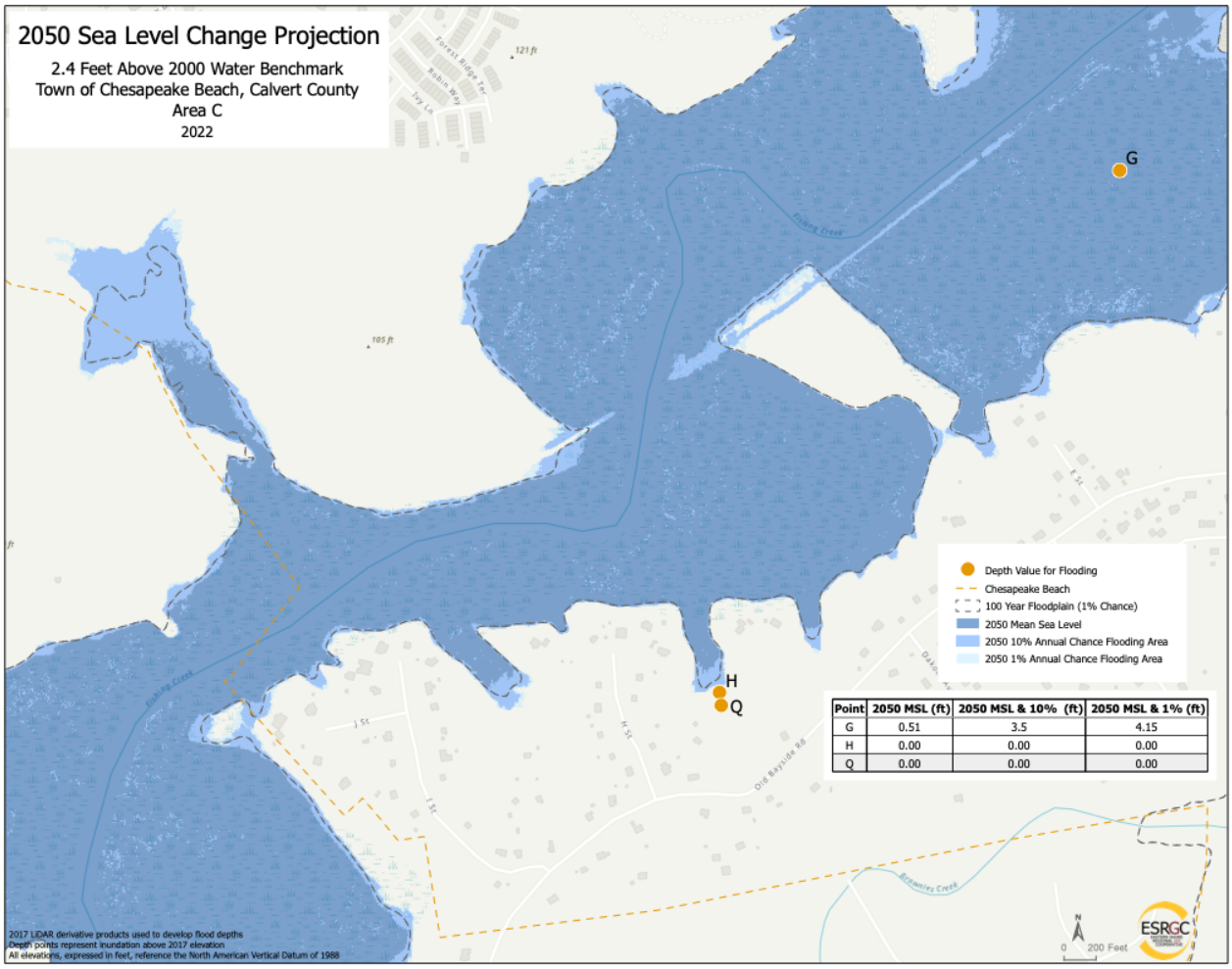



*Figure 36: 2050 Sea Level Change Projection*

# Chapter 5 Implementation and Conclusion

The previous chapter of this Plan described the most important recommendations over the next 10 years. Here are the critical steps necessary to facilitate the implementation of those recommendations.

1. Formally adopt this Plan by resolution of the Mayor and Town Council and transmit copies to the Town of North Beach and Calvert County. Transmit a copy to the Maryland Department of Natural Resources, Chesapeake, and Coastal Service.

2. Formalize the Coastal Resiliency Steering Committee into a standing committee or commission within Town government with the main task being to guide the implementation of this Plan and to regularly advise the Mayor and Council. A standing committee or commission, with funding to support professional analysis and studies, would allow development of the specialized local knowledge, institutional capacity, and community trust necessary to deal with the challenges this Plan has highlighted. The commission or committee should be staffed by town employees and/or consulting engineers and planners. This Plan and the Town's adopted Comprehensive Plan both recommended reconstituting the Board of Port Wardens.

3. Identify priorities for capital improvements related to this Plan and update this Plan every five years. Report on progress and refine and detail the recommendations as conditions warrant. Establish a process for tracking progress and providing updates to interested parties including the key Departments in State government. Further develop the Town's webpage devoted to the topic into a community outreach tool to residents and property owners.

4. Continue the work begun under this Plan to document in detail the condition and ownership of the drainage systems in Town and as part of that effect undertake a town-wide coastal survey to refine and detail the elevations of the land, streets, open drainage ways, buildings, revetments, and bulkheads. Much of this today is available but needs to be assembled and updated into a quickly deployable data set that can be used both in planning, preliminary engineering, and disaster recovery and/or rebuilding.

5. Coordinate with Calvert County and North Beach in the periodic update of the Calvert County All-Hazard Mitigation Plan and incorporate the findings and recommendations of this Plan.

6. Identification of Funding.

a. Assemble a package of federal and state grant and loan programs that the Town can be used to undertake the detailed engineering studies recommended in this report. Some sources will require a local match and over the next several years the Town will need to strategize about how to fund this work and the infrastructure upgrades and modernization that will flow from these studies. Examples include the federal Building Resilient Infrastructure and Communities (BRIC) program and the federal Flood Mitigation Assistance program.

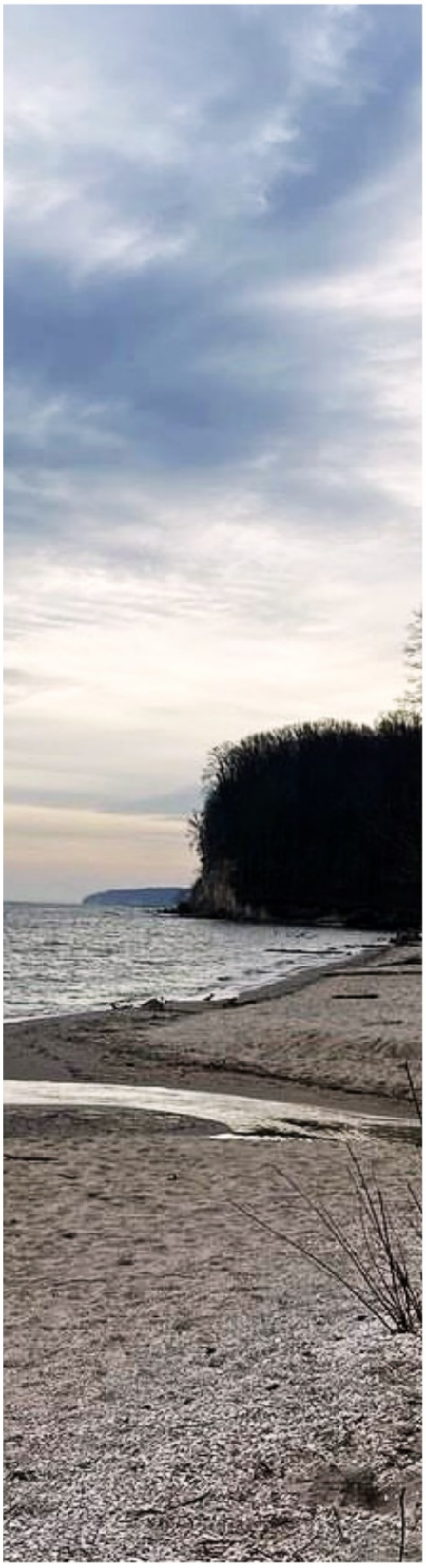
b. Assemble a package of federal and state and loan programs that the Town can use to assist property owners in making property more resilient to the effects of flooding and to facilitate the relocation of those buildings which lie within the hazard areas designated in this Plan and future studies for "managed retreat". The aforementioned BRIC program is also available for this purpose.

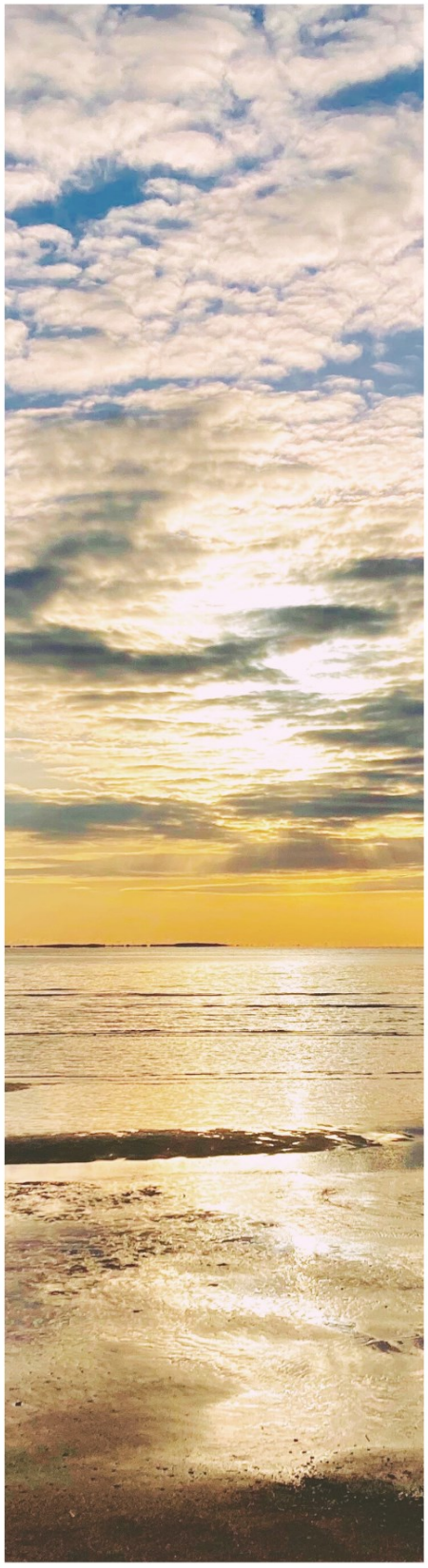
***

# Appendices

**Intended Use and Limitations**: The datasets represent projected still water depths (ft) in a forecast sea level change scenario. The layers are an aid for researchers seeking to identify potential vulnerabilities along Chesapeake Beach's shoreline. The data supports Chesapeake Beach's leadership and planners as they endeavor to mitigate or prevent the impacts of sea level change resulting from land surface subsidence and rising sea levels. The product uses sea-level projections to forecasts areas of inundation for a given scenario. The data may be used and redistributed for free but is not intended for legal use, since it likely contains inaccuracies. The User assumes the entire risk associated with its use of these data and bears all responsibility in determining whether these data are fit for the User's intended use. The information contained in these data is dynamic and will change over time. The data are not better than the original sources from which they were derived, and both scale and accuracy may vary across the data set. These data may not have the accuracy, resolution, completeness, timeliness, or other characteristics appropriate for applications that potential users of the data may contemplate. The User is encouraged to carefully consider the content of the metadata file associated with these data. These data are neither legal documents nor land surveys, and must not be used as such. Eastern Shore Regional GIS Cooperative should be cited as the data source in any products derived from these data. Any Users wishing to modify the data should describe the types of modifications they have performed. The User should not misrepresent the data, nor imply that changes made were approved or endorsed by the Eastern Shore Regional GIS Cooperative. The Eastern Shore Regional GIS Cooperative, nor any of its employees or contractors, makes any warranty, express or implied, including warranties of merchantability and fitness for a particular purpose, or assumes any legal liability for the accuracy, completeness, or usefulness, of this information.


THE TOWN OF
CHESAPEAKE BEACH
Welcomes You





**OFFICE OF THE PLANNING COMMISSION**

**TO:** Mayor and Town Council

**FROM:** Kathleen Berault, Chair, Planning and Zoning Commission

**DATE:** December 21, 2023

**RE:** Planning and Zoning Meeting Report

The Commission was provided with a final draft of the Critical Area ordinance dated November 15, 2023. The Town Planner stated all Commission changes have been incorporated and the Critical Area Commission eagerly anticipates receiving the document for its review.

Six (6) motions were then integrated into the document pertaining to: the Buffer, the Modified Buffer Area, and Other Habitat Protection Areas. The Commission then moved that the Town Planner transmit the Critical Area draft ordinance to the Chesapeake Bay Critical Area Commission (CBCAC) for their review and comments. Upon the CBCAC's review and return of the document, the Commission will have another occasion to make any necessary modifications. It will then be submitted to the Town Council for review.

It was requested of the Town Planner to provide information addressing the Fees in Lieu program. What are the Program's procedures for collection by the Town, the history of the initiative as well as comparative costs by other local jurisdictions in the Critical Area.

A draft of Rules and Procedures were discussed by the Commission as currently it doesn't have operating procedures in place. Amendments previously offered by Commissioner Brown were reviewed for consideration and inclusion. Nine (9) modifications were determined to the draft. They addressed items such as: Rules of Procedures: Organization of the Commission, What determines a Quorum, Obtaining Advisory Opinions, Order of Business, and an Annual Report.

# Chesapeake Beach Oyster Cultivation Society Report
## November 2023
## Chesapeake Beach Town Council Meeting

- CBOCS sponsored a table at the Light Up The Town event for attendees of all ages to decorate oyster shells for Christmas and Holiday celebrations. Over 50 shells were painted by children and their families to decorate their homes for the holidays.

- CBOCS members Sue Alexander and Melanie Crowder met with the Twin Beach library Director and Assistant Director along with local artist Parran Collery to begin planning for an exterior tile mural for the new North Beach Library. An Oyster Celebration Day is being planned to involve the community in arts and informational events to celebrate this mural, the bay and our Calvert County environment, with a tentative date in early 2025.

**Green Team Committee Meeting Minutes**

**December 7, 2023**

The meeting was called to order at 6:30 at Calvert Library

Attendees:

Valerie Beaudin

Linda Draper

Joanne Mattingly

Joanie Martin

Bernard Devlin

Sue Alexander

## Upcoming Events

- Osprey Talk with Greg Kerns – February 24th . Online registration will be encouraged when Parks and Rec issues the link so that NECC can get statistical credit for our participants.
- Earth Day – Spring Cleanup – April 20th
- Arbor Day – Tree Plantings – April 27th

## Tree City

- The application for Tree City Designation has been submitted. Tentative Dates are being considered for the first meeting of the town Tree Committee as required by this designation.

## Osprey Talk – Febr 24th

- Joanne's friend will donate 3 osprey books to be raffled off.
- A registration desk will be set up to collect contact info and headcount of attendees.
- A discussion was held regarding additional display tables for the event. CBOCS and Baywise will have tables. Possible other groups were considered but need to be finalized (Parks and Rec, Jeff Pat Park,etc)
- Raffle tickets and possible giveaway products will be provided by Town Hall; CBOCS will donate reusable tote bags.

**Other Items**

- Valerie will contact Holly regarding the installation of an additional bridge rail and garden on the south side of the Bayfront Park entrance.
- Plans for Arbor Day – discussion of planting trees at Pocket Parks as event.
- Valerie will have Town Hall order  water bottles with Green Team logo for event giveaways.
-

**The meeting was adjourned at 7;30 pm. The next meeting will be at 6;30 pm on January 25th at the Twin Beaches Library.**

To: The Honorable Mayor and Town Council From: Holly Wahl, Town Administrator

Subject: Appointment of the Board of Port Wardens
**Date: December 14, 2023**

---

## I. BACKGROUND:

During the November 2023 Town Council meeting the Town Council reviewed the importance of establishing the Board of Port Wardens also as noted in importance in the Town's Coastal Resiliency Plan.

The Town Code of the Town of Chesapeake Beach Article IX Section 290-33 defines that the Town **shall establish a Board of Port Wardens** for the orderly development, control and management of the placement, erection, and construction of structures and to provide for safe harbors, free of congestion and navigational hazards within or on the waters, within the municipal corporate limits of the Town of Chesapeake Beach. The Board of Port Wardens shall consist of three members with a term of office of the members being three years. Members shall be appointed by the Mayor and confirmed by a favorable vote of 5/6 of the entire Town Council, and removable for cause upon written charges and after public hearing. The Mayor shall designate one alternate member for the Board of Port Wardens, who may be empowered to sit on the Board of Port Wardens in the absence of any member of the Board of Port Wardens.

The Board of Port Wardens is an appointed body of the Town that regulates construction on the waterways of the Town. Without the board in place the Town has no jurisdiction over this type of construction activity, which impacts the coastal resiliency of the Town and the sensitive ecology of the Town's waterways.

**The Town's Planning Commission's responsibilities differ from the Board of Port Wardens**. The responsibilities of the Planning Commission per the Town code Article IV Section 235-14 are to **review, evaluate, and approve or disapprove plans for subdivisions** in accordance with these Subdivision Regulations, and to review and make recommendations to the Town Council regarding:

- Proposed amendments to the Town Critical Area Protection Program and Critical Area District Map.
- Proposed changes or amendments to the Town Comprehensive Plan.
- Proposed changes or amendments to the Town Zoning Ordinance.
- Proposed changes or amendments to the Town Subdivision Regulations.
- Proposed changes or amendments to the Town Road Ordinance.
- Proposed changes or amendments to the Town Water and Sewer Policy Manual.
- Proposed changes or amendments to the Town Stormwater Management Ordinance.
- Proposed changes or amendments to the Town Soil Erosion Control Ordinance.
- Proposed acquisition and development of lands for open space or recreational purposes.
- Proposed designation of historic sites or districts.
- Proposed changes in land use management classifications or development arising from state or federal programs or policies.

## II. PROCESS:

By establishing the Board of Port Wardens applicants that desire constructing within the Town's waterways will be required to submit a permit application to the Town in addition to submitting applications to state and federal regulating agencies. Per Article IX 290-33 the Town Council has approval authority of the Boards fee structure and the established rules and procedures. Rules and procedures will include how the Board conducts its meetings and receives public comments.

## III. APPOINTMENT:

It is recommended that the Town Council consider confirming Wayne Newton (Town Engineer), Jay Berry (Public Works Administrator) and Kathleen Berault (Town Resident and Chair of the Planning and Zoning Commission) to officially form the Town of Chesapeake Beach Board of Port Wardens. Forming the Board of Port Wardens establishes the Town's regulatory authority of the Town's waterways as defined that the Town shall have in the Town code.

To: The Honorable Mayor and Town Council From: Holly Wahl, Town Administrator

Subject: Town Planning and Zoning Administrator
**Date: December 8, 2023**

---

## I. BACKGROUND:

Per section § 290-26 of the Town Code. “Administration of permitting process”.

The ***Zoning Administrator (the “Administrator”)*** shall administer and enforce the provisions of the administration of the permitted process and implement violations as necessary. This role per the Town code it to be appointed by the mayor and confirmed by the Town Council.

B. The Administrator shall have the following duties and powers:

(1) Receive and examine all applications for zoning permits and other applications required by this chapter.

(2) Refer all zoning permits and applications to construct or change the use of a building or structure in RPC Districts to the Planning Commission for review and approval. The Planning and Zoning Commission ("the Commission") shall make its recommendations within 45 days after submission to it.

(3) Refer zoning permit applications for the following purposes to the Commission for approval: (a) To alter, extend, or change any nonconforming use. (b) To construct or expand off-street parking areas of three or more vehicles.

(4) Issue permits only where there is compliance with the provisions of this chapter and with other Town ordinances. Permits for construction or uses requiring a special exception or variance shall be issued only upon order of the Board of Appeals.

(5) Receive applications for special exceptions and forward these applications to the Board of Appeals for action thereon.

(6) Following refusal of a permit, receive applications for interpretation, appeal, and variance and forward these applications to the Board of Appeals for action thereon.

(7) Conduct inspections and surveys to determine compliance or noncompliance with the terms of this chapter.

(8) Issue stops, cease, and desist orders, and orders in writing for correction of all conditions found to be in violation of the provisions of this chapter. Such written orders shall be served personally or by certified mail upon persons, firms, or corporations deemed by the Administrator to be violating the terms of this chapter. It shall be unlawful for any person to violate any such order lawfully issued by the Administrator, and any person violating any such order shall be guilty of a violation of this chapter.

(9) Institute in the name of the Town any appropriate action or proceedings to prevent the unlawful erection, construction, reconstruction, alteration, repair, conversion, maintenance, or use; restrain, correct, or abate such violation so as to prevent the occupancy or use of any building, structure or land; or to prevent any illegal act, conduct, business, or use in or about such premises.

(10) Revoke, by order, a permit issued under a misstatement of fact or contrary to the law or the provisions of this chapter.
(11) Record and file all applications for zoning permits or other permits with accompanying plans and documents. All applications, plans, and documents shall be a public record.

(12) Maintain a map or maps showing the current zoning classification of all land in the Town, including the Zoning Map and the Critical Area District Map, and maintain records of growth allocation acres awarded and the amount remaining.

(13) Upon the request of the Mayor or Town Council, the Commission, or the Board of Appeals, present to such bodies facts, records, or reports which they may request to assist them in making decisions, or in any other matter.

(14) Refer any zoning permit to the Commission for review and comment as the Administrator deems necessary and appropriate.

(15) Review for completeness all applications for Category 1 site plans and submit completed applications to the Planning Commission for review and approval as provided for in Article VI of this chapter.

(16) Review and take action on all Category 2 site plans as provided for in Article VI of this chapter.

Further, per § 290-31 **Violations and penalties.**

All citations for violations subject to this section shall be issued by the Zoning Administrator, in accordance with the provisions of Article 23A, § 3, of the Annotated Code of Maryland.

## II. APPOINTMENT:

Under the current roles and responsibilities, the Town Administrator is serving in the capacity of the Zoning Administrator as appointed by the Mayor. The Town Administrator serves as the Zoning Administrator with input and guidance from the Town Planner, Town Public Works Administrator and Town Engineer facilitating the processes necessary to conduct Zoning Administration for the Town.

## III. RECOMMENDATION:

It is recommended that the Town Council consider confirming the Mayors appointment of the Town Administrator to serve as the Zoning Administrator for the Town of Chesapeake Beach.

To: The Honorable Mayor and Town Council From: Holly Wahl, Town Administrator

Subject: CBWRTP Capital Improvements purchase of seals on two press feed pumps
**Date: December 15, 2023**

---

## I. BACKGROUND:

The Town Council approved a FY24 budget for the CBWRTP that includes the cost of seals on two press feed pumps at the plant. The approved cost was estimated at $20,000 for this project.

The current seals require seal water which provides lubrication and flushing action for the mechanical seals of the press feed pumps. The current mechanical seals are of a type that far exceeds the requirements of these pumps and are of such a nature that repairs to the seals are excessively expensive. For example, one of the seals was replaced in 2021, after only 4-5 years of service, at a cost of ~ $10,000. The intent is to replace these seals with a more typical packing-style seal. This will reduce the water usage to 0 and provide a more easily maintained seal for these pumps that are used at most two times a week.

## II. ESTIMATES:

The Town received updated estimates for the two press feed pump seals that are attached as Exhibit A. With labor the costs will exceed the expected cost; however, the project remains vital to the operation at the CBWRTP.

## III. RECOMMENDATION:

It is recommended that the Town Council consider authorizing the Town Administrator to expend funds not to exceed $35,000 for the purchase and installation of two press feed pumps at the Chesapeake Beach Water Reclamation Treatment Plant (CBWRTP) from the FY24 CBWRTP Capital Improvement line item.

MOTORS • PUMPS • CONTROLS • POWER TRANSMISSION
410-228-4447
3901 Vincent Road - Linkwood, MD 21835
Phone: (410)-228-4447 / Fax: (410)-228-2517
Email: sales@hillsindustrial.com

# Job Estimate

| | |
|---|---|
| **Job No:** | 066391 |
| **Date:** | 12/13/2023 |
| **Page:** | 1 of 2 |

| | | | |
|---|---|---|---|
| **Sold To:** | Customer Number: 000641<br>**CHESAPEAKE BEACH WWTP**<br>8200 BAYSIDE ROAD<br>P.O. BOX 400<br>CHESAPEAKE BEACH, MD 20732<br><br>Phone: 410-257-2230 Fax: 410-257-1463 | **Ship To:** | Ship To Number: 000001<br>**CHESAPEAKE BEACH WWTP**<br>8550 BAYSIDE ROAD<br>CHESAPEAKE BEACH, MD 20732<br><br>Phone: 410-257-9334 |

| Job Number | Estimate Date | Sales Code | Job Type | Ship Via | Terms |
|---|---|---|---|---|---|
| 066391 | 12/04/23 | 014 | Pump Three Phase | | NET 30 DAYS |
| **Purchase Order:** | PENDING | **PO Release:** | | **Misc Number:** | |

| QTY | Item Number | Description/Notes | Unit Price | Extended |
|---|---|---|---|---|
| | | Nameplate Data: | | |
| | | Pump brand:SEEPEX, Pump mod:BN 70-6L, | | |
| | | Pump Ser:835760.1 | | |
| | | | | |
| | | Special Instructions: | | |
| | | CONVERT TO PACKING | | |
| | | | | |
| | STGA126203500AXXXX | GLAND HOUSING | | |
| | PKRK126203500OH0K8 | PACKING SET | | |
| | STBA626203500NXXXX | GLAND | | |
| | SHAL0M120060000186 | GLAND BOLT | | |
| | STWC126203500DLEBX | PLUG IN SHAFT | | |
| | DSGM006003500AQ5M6 | CASING GASKET | | |
| | MSKM4M120000000934 | NUT | | |
| | SGTF006003500XN612 | SINGLE SET JOINT PARTS | | |
| | MPSP1 | SHOP SUPPLIES | | |
| | | SHOP LABOR | | |
| | | | | |
| | | ADDITIONAL WORK AND/OR LABOR WILL BE | | |
| | | QUOTED AS NEEDED. | | |
| | | | | |
| | | THE LABOR QUOTED ON THIS JOB IS STRICTLY | | |
| | | AND ESTIMATE AND YOU WILL BE BILLED FOR | | |
| | | THE ACTUAL TIME REQUIRED. | | |
| | CRANE.1 | CRANE SERVICE FOR REMOVAL | | |
| | | FIELD SERVICE LABOR 2 TECHS | | |
| | | | | |
| | CRANE.1 | CRANE SERVICE FOR INSTALL | | |

Repair estimate valid for 30 calendar days from the above date.
Total is plus sales tax if applicable. Based Upon Our Standard Terms And Conditions.

| | |
|---|---|
| **Est. Total:** | Continued... |

**Estimated By:** _____ **Date:** _____

***Based on our Terms and Conditions.***

Customer Copy

MOTORS • PUMPS • CONTROLS • POWER TRANSMISSION
410-228-4447
3901 Vincent Road - Linkwood, MD 21835
Phone: (410)-228-4447 / Fax: (410)-228-2517
Email: sales@hillselectric.com

# Job Estimate

| | |
|---|---|
| **Job No:** | 066391 |
| **Receipt Date:** | 12/13/2023 |
| **Page:** | 2 of 2 |

| | | | |
|---|---|---|---|
| **Sold To:** | Customer Number: 000641<br>**CHESAPEAKE BEACH WWTP**<br>8200 BAYSIDE ROAD<br>P.O. BOX 400<br>CHESAPEAKE BEACH, MD 20732<br><br>Phone: 410-257-2230 Fax: 410-257-1463 | **Ship To:** | Ship To Number: 000001<br>**CHESAPEAKE BEACH WWTP**<br>8550 BAYSIDE ROAD<br>CHESAPEAKE BEACH, MD 20732 |

| Job Number | Estimate Date | Sales Code | Job Type | Ship Via | Terms |
|---|---|---|---|---|---|
| 066391 | 12/04/23 | 014 | Pump Three Phase | | NET 30 DAYS |
| **Purchase Order:** | PENDING | **PO Release:** | | **Misc Number:** | |

| QTY | Item Number | Description/Notes | Unit Price | Extended |
|---|---|---|---|---|
| | 9472K643 | 6" GASKET 1/16" | | |
| | 9472K642 | 5" GASKET 1/16" | | |
| | | FIELD SERVICE LABOR 2 TECHS | | |

Repair estimate valid for 30 calendar days from the above date.
Total is plus sales tax if applicable. Based Upon Our Standard Terms And Conditions.

| | |
|---|---|
| **Est. Total:** | 16706.09 |

**Estimated By:** _____ **Date:** _____

***Based on our Terms and Conditions.***

Customer Copy

MOTORS • PUMPS • CONTROLS • POWER TRANSMISSION
410-228-4447
3901 Vincent Road - Linkwood, MD 21835
Phone: (410)-228-4447 / Fax: (410)-228-2517
Email: sales@hillsindustrial.com

# Job Estimate

| | |
|---|---|
| **Job No:** | 066392 |
| **Date:** | 12/13/2023 |
| **Page:** | 1 of 2 |

| | | | |
|---|---|---|---|
| **Sold To:** | Customer Number: 000641<br>**CHESAPEAKE BEACH WWTP**<br>8200 BAYSIDE ROAD<br>P.O. BOX 400<br>CHESAPEAKE BEACH, MD 20732<br><br>Phone: 410-257-2230 Fax: 410-257-1463 | **Ship To:** | Ship To Number: 000001<br>**CHESAPEAKE BEACH WWTP**<br>8550 BAYSIDE ROAD<br>CHESAPEAKE BEACH, MD 20732<br><br>Phone: 410-257-9334 |

| Job Number | Estimate Date | Sales Code | Job Type | Ship Via | Terms |
|---|---|---|---|---|---|
| 066392 | 12/04/23 | 014 | Pump Three Phase | | NET 30 DAYS |
| **Purchase Order:** | PENDING | **PO Release:** | | **Misc Number:** | |

| QTY | Item Number | Description/Notes | Unit Price | Extended |
|---|---|---|---|---|
| | | Nameplate Data: | | |
| | | Pump brand:SEEPEX, Pump mod:BN 70-6L, | | |
| | | Pump Ser:835760.1 | | |
| | | | | |
| | | Special Instructions: | | |
| | | CONVERT TO PACKING | | |
| | | | | |
| | STGA126203500AXXXX | GLAND HOUSING | | |
| | PKRK126203500OH0K8 | PACKING SET | | |
| | STBA626203500NXXXX | GLAND | | |
| | SHAL0M120060000186 | GLAND BOLT | | |
| | STWC126203500DLEBX | PLUG IN SHAFT | | |
| | DSGM006003500AQ5M6 | CASING GASKET | | |
| | MSKM4M120000000934 | NUT | | |
| | SGTF006003500XN612 | SINGLE SET JOINT PARTS | | |
| | MPSP1 | SHOP SUPPLIES | | |
| | | SHOP LABOR | | |
| | | | | |
| | | ADDITIONAL WORK AND/OR LABOR WILL BE | | |
| | | QUOTED AS NEEDED. | | |
| | | | | |
| | | THE LABOR QUOTED ON THIS JOB IS STRICTLY | | |
| | | AND ESTIMATE AND YOU WILL BE BILLED FOR | | |
| | | THE ACTUAL TIME REQUIRED. | | |
| | CRANE.1 | CRANE SERVICE FOR REMOVAL | | |
| | | FIELD SERVICE LABOR 2 TECHS | | |
| | | | | |
| | CRANE.1 | CRANE SERVICE FOR INSTALL | | |

Repair estimate valid for 30 calendar days from the above date.
Total is plus sales tax if applicable. Based Upon Our Standard Terms And Conditions.

| | |
|---|---|
| **Est. Total:** | Continued... |

**Estimated By:** _____ **Date:** _____

***Based on our Terms and Conditions.***

Customer Copy

MOTORS • PUMPS • CONTROLS • POWER TRANSMISSION
410-228-4447
3901 Vincent Road - Linkwood, MD 21835
Phone: (410)-228-4447 / Fax: (410)-228-2517
Email: sales@hillselectric.com

# Job Estimate

| | |
|---|---|
| **Job No:** | 066392 |
| **Receipt Date:** | 12/13/2023 |
| **Page:** | 2 of 2 |

| | | | |
|---|---|---|---|
| **Sold To:** | Customer Number: 000641<br>**CHESAPEAKE BEACH WWTP**<br>8200 BAYSIDE ROAD<br>P.O. BOX 400<br>CHESAPEAKE BEACH, MD 20732<br><br>Phone: 410-257-2230 Fax: 410-257-1463 | **Ship To:** | Ship To Number: 000001<br>**CHESAPEAKE BEACH WWTP**<br>8550 BAYSIDE ROAD<br>CHESAPEAKE BEACH, MD 20732 |

| Job Number | Estimate Date | Sales Code | Job Type | Ship Via | Terms |
|---|---|---|---|---|---|
| 066392 | 12/04/23 | 014 | Pump Three Phase | | NET 30 DAYS |
| **Purchase Order:** | PENDING | **PO Release:** | | **Misc Number:** | |

| QTY | Item Number | Description/Notes | Unit Price | Extended |
|---|---|---|---|---|
| | 9472K643 | 6" GASKET 1/16" | | |
| | 9472K642 | 5" GASKET 1/16" | | |
| | | FIELD SERVICE LABOR 2 TECHS | | |

Repair estimate valid for 30 calendar days from the above date.
Total is plus sales tax if applicable. Based Upon Our Standard Terms And Conditions.

| | |
|---|---|
| **Est. Total:** | 16706.09 |

**Estimated By:** _____ **Date:** _____

***Based on our Terms and Conditions.***

Customer Copy