Town of Fenwick Island

Community Sustainability Plan

September 2019

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A hard copy of the Community Sustainability Plan including the Appendix documents are available t to view at Town Hall. Based on the large size of the appendix documents, they can be found on the Town's website on the following link: https://fenwickisland.delaware.gov/

1 INTRODUCTION

ACKNOWLEDGEMENTS

The creation of this Plan involved the dedication of many people. Everyone listed below served in some capacity over time to help create the document during the input, drafting or final deliverables stage of the Plan.

Town Council
Gene Langan, Mayor
Richard Mais, Vice Mayor
Gardner Bunting, Treasurer
Bernie Merritt, Secretary
Vicki Carmean, Council Member
William Weistling, Council Member
Mike Houser, Council Member

Environmental Committee
Mary Ellen Langan, Chair
Sally Craig
Alex Daly
Virginia Childers-Davidson
Betsy Henifin
Buzz Henifin
Amy Kyle (non-voting)
Roy Williams
Colleen Wilson
Colleen Sanford

Dredging Committee
Bernie Merritt (Chair)
Gardner Bunting
Vicki Carmean
Alex Daly
Charlie Hastings
Karin Lakin
Bud Tingle
Mark Tingle
William Weistling

Town Staff
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Dean Gary, Finance Manager

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KCI TECHNOLOGIES
KCI ENGINEERS | PLANNERS | SCIENTISTS | CONSTRUCTION MANAGERS
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State of Delaware
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DNREC, Division of Climate, Coastal & Energy:
Susan Love, Climate & Sustainability Section Manager
Michael Tholstrup, Sustainable Communities Planner

Grant Application Support Partners
Emergency Management & Infrastructure Committee
Bethany-Fenwick Area Chamber of Commerce
Fenwick Lions Club
State Representative Ronald E. Gray (38th District)
Senator Gerald Hocker (20th District)

PURPOSE OF THE PLAN

Communities today face a wide variety of challenges that affect their ability to move toward a vibrant future, including natural resource availability, pollution, social isolation, public health concerns, and climate change. Local governments are uniquely suited to address these complex challenges through sustainability planning, which incorporates strategic assessments of challenges, development of creative solutions, and tracking progress toward community goals. Successful implementation of sustainability plans support the long-term resilience of communities.

The Fenwick Island Community Sustainability Plan was developed to assist with improving the social, environmental, and economic conditions of the Town through multiple chapters that address topics identified through community outreach and best practices from sustainability leaders and organizations around the country. It seeks to increase the sustainability of the Town and to allow the Town to contribute to larger efforts to increase sustainability and contribute to the sustainability of larger systems.

The Community Sustainability Plan is intended to be an interactive and living document that Town leadership, staff, and the community can use to launch and expand sustainability initiatives. It can be applied in several ways:

- Readers can use it to better understand sustainability topics through introductions and supplemental information provided throughout the document and to identify the actions they can take.
- Town leadership can use it better understand how sustainability touches many of their responsibilities and to prioritize implementation and resource allocation by reviewing strategies and their associated costs and benefits.
- Town staff can use it to prioritize and guide implementation by referring to strategy details.

WHAT IS SUSTAINABILITY?

Sustainability means creating balance among the environment, the economy, and society to ensure that practices and decisions do not compromise the quality of life for future generations. Sustainability is not an end goal, but an approach that recognizes the interplay between natural, economic, and social interests. As our population and economy continue to grow, we depend on the resources and services that our surrounding ecosystems provide. Sustainable development requires an understanding of these systems and how we can survive and thrive within the patterns and cycles of the natural world.

A popular method of considering the sustainability state of mind is the triple bottom line approach. The three bottom lines, or pillars, are:

1) Environmental Sustainability

Our most basic requirements: unpolluted air, clean water and fresh food, all come from our environment, as does the energy and raw materials we need for construction and transportation. Environmental sustainability is essential if we wish to have and continue to have the resources to meet our needs. In the broadest sense of the definition, environmental sustainability involves the entire global ecosystem (oceans, freshwater systems, land and atmosphere). However, environmental sustainability principles can equally be applied to ecosystems of any size, even down to the scale of a small home garden.

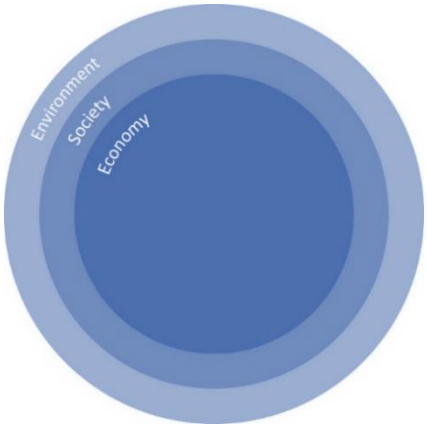
2) Social Sustainability

A socially sustainable society is one in which all members have equal rights, all share equitably in societal benefits, and all participate equally in the decision-making process. Additionally, a society is unsustainable if it consumes resources faster than they can be renewed naturally, discharges more waste than natural systems can assimilate without degrading, or depends upon distant sources for its most basic requirements. As with environmental sustainability, social sustainability principles can be applied to societies of any size. For example, one of sustainability's grand challenges is to simultaneously reduce consumption in the developed world while raising the standard of living of the developing world – we need to be responsible global citizens by making informed choices every day within our homes and communities.

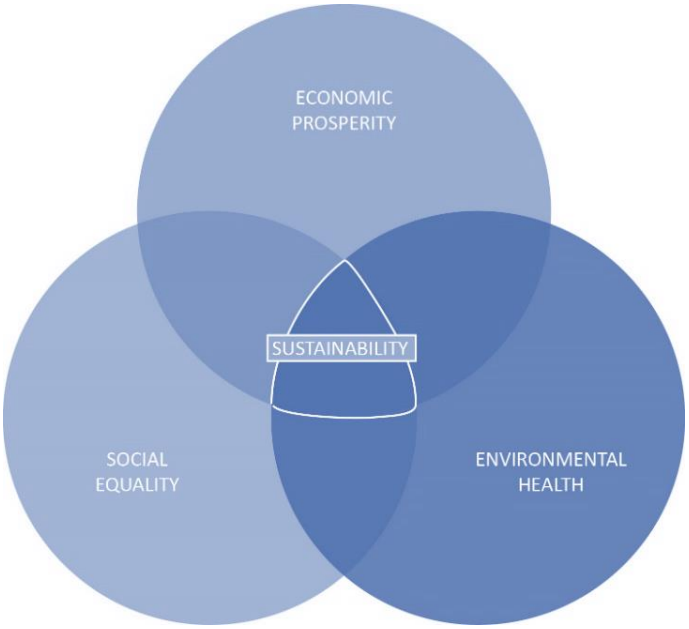
3) Economic Sustainability

Economic sustainability is about much more than the sustained growth of resources and profit margins. Economic sustainability takes into account the social and ecological consequences of economic activity. We need to carefully consider the full life-cycle of our goods, from extraction of raw materials, through processing, manufacture, distribution, use, maintenance, repair, and eventual recycling or disposal (the cradle-to-grave paradigm).

The concept of sustainability can be illustrated through two different models. First, the "nested model" illustrates our dependence on a healthy environment to support social well-being, which in turn enables us to sustain a robust economy. In other words, without a healthy environment, a community would be unable to achieve social well-being and economic success.



Second, the "overlapping-circles model" illustrates the importance of considering equally the environment, social, and economic impacts of our decisions and behaviors. It is the goal of sustainability to achieve balance between the natural environment, social values, and the economy.



2 PLAN FRAMEWORK

The framework for the Town's first Sustainable Plan involved multiple levels of input, research and collaboration in order to achieve a successful outcome as further described in this section. Prior to providing the framework, it is important to acknowledge the awarded grant funding source for the project, and this was the first critical path in the moving forward.

FUNDING

Sustainable communities are vibrant, healthy, and prepared communities that balance demands for environmental protection, resiliency, economic growth, and social objectives. Communities that are sustainable keep their residents safe from unexpected events (referred to as resiliency), while also providing economic stability and a high quality of life. Planning is central to resiliency and sustainability in communities.

The State of Delaware's Department of Natural Resources and Environmental Control, Division of Energy and Climate promoted a Sustain Communities Planning Grant to local Municipalities to assist with the local planning and initiatives. This program is funded from the Regional Greenhouse Gas Initiative (RGGI) Administrative expenditure plan. It is an important component of the Division's efforts to build support and local capacity for sustainable actions and greenhouse gas reduction projects.

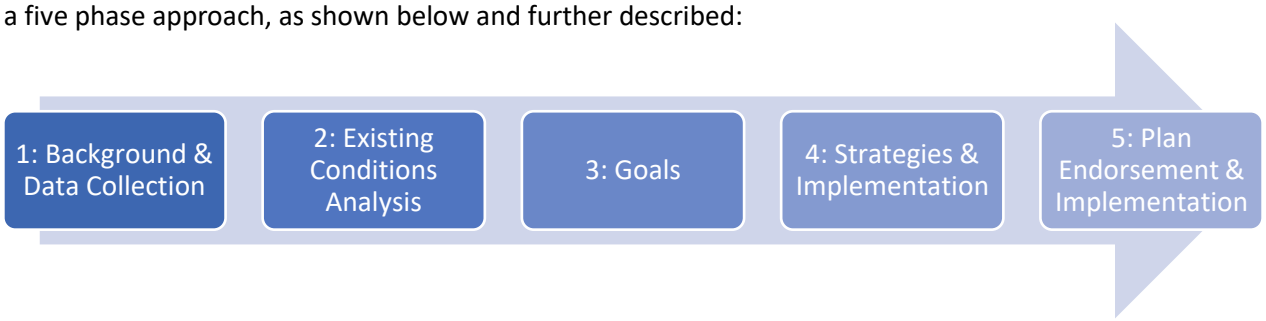
This competitive grant program was solicited for Request for Proposals in February 2017. The purpose of the grant is to help communities assess and plan for local sustainability practices and to build local capacity to implement sustainability and resiliency practices. KCI Technologies Inc. (KCI) coordinated with the Town Staff to obtain necessary information, create the itemized budget and prepare a project scope that would meet the grant objectives. Potential project partners were identified and letters of support were obtained to accompany the grant application. KCI finalized the grant application and presented it to the Environmental Committee for review and recommendation followed by approval from the Mayor and Town Council of Fenwick Island to submit the application to the State for consideration. The grant application was submitted to the State of Delaware in May of 2017.

Upon receipt of the submitted grant applications, the State of Delaware reviewed and selected the projects with the assistance of a multi-agency, multi-disciplinary review team. The Division received nine very competitive proposals requesting over $480,000 in project funding. The Town of Fenwick was awarded a Sustainable Communities Planning (SCP) grant in the amount of $40,000 for a two year project duration. The overall project cost is $52,000 with a required $12,000 Municipal cash match. The Town received a letter notification of the awarded project funding on August 28, 2017 and receive a fully executed and signed grant agreement on September 20, 2017. The Town further received a State purchase order on September 22, 2017.

The grant requires routine progress reports and ongoing coordination with the Division of Energy and Climate staff for the duration of the project, all of which were met and coordinated along the project duration. Due to additional outreach survey initiatives, a grant extension request was submitted on July 17, 2019 and granted by the State of Delaware until September 27, 2019.

PROJECT APPROACH

The Environmental Committee was assigned the responsibility of creating the Plan along with the Town staff, Project Consultants and local community input. The approved grant application and project scope involved a five phase approach, as shown below and further described:



BACKGROUND & DATA COLLECTION – The first phase focused on data collection from the Town staff, meeting minutes, current planning documents and budgetary information. Additional data was collected from applicable State and Federal resources to include U.S. Census data. Mapping resources were further identified based on the recent Comprehensive Plan update and several new maps were created to reflect updated and applicable information. Included in the data collection phase, the Town was asked to promote the Committees, Council, and staff members to take the S.W.O.T. (Strengths, Weaknesses, Opportunities, & Threats) Analysis. Data collection further included obtaining input from a community survey and outreach events as well as multiple Committee and public meetings throughout the project.

EXISTING CONDITIONS ANALYSIS – The second phase involved creating and reviewing the latest GIS mapping data available from First Map, additional State and Federal resources. Research was conducted on climate change, flood resiliency, green infrastructure & building, land use, natural resources, renewable energy, waste generation, environmental health, and known problem areas.

GOALS – The third phase involved analyzing the collected data and reviewing the trends to further determine goals appropriate to the Town of Fenwick Island. The Environmental Committee worked on creating the Plan goals and it was further determined that Community outreach and education was one of the first steps identified for several topics. The intent of the initial creation of the first plan is to ensure this is a living document and reviewed as well as updated on an annual basis. The goals reflected in Chapter 14 are not in any specific order and will be considered for implementation based on available funding and resources as well as priority initiatives established by the local Municipal leaders.

STRATEGIES & IMPLEMENTATION – The fourth phase involved preparing strategies for each goal and identifying areas for implementation. While it is understood the majority of the larger implementation studies and tasks would require funding sources, several tasks can be accomplished with smaller funding sources and creative partnerships or existing services provided by Federal, State or nonprofit organizations.

PLAN CONSIDERATION & IMPLEMENTATION – The fifth phase involved presenting the Plan to the Town Council and Public for review and consideration. It is recommended an annual review of the implementation tasks be conducted by the Environmental Committee for consideration and execution, to include applicable grants and available funding sources.

PUBLIC MEETINGS

Several public meetings were advertised in advance and held with a variety of topics and tasks to achieve the creation of the Plan, as shown below:

- **February 2, 2018** – Outreach Meeting with the Environmental Committee to discuss the upcoming Earth Day Event and assigned tasks to execute.

- **March 3, 2018** – Outreach Meeting with the Environmental Committee to discuss the upcoming Earth Day Event and finalize the assigned tasks.

- **April 21, 2018** – Town of Fenwick Island's Earth Day Event (See Community Outreach Section)

- **October 10, 2018** – Internal project team meeting. The Project Manager and Town Manager held a coordination meeting to discuss the project's next steps, schedule, and meeting dates.

- **November 2, 2018** – Joint project kick off meeting with the Environmental Committee and the Dredging Committee. Members were provided with an overview of the project scope and grant, a tentative meeting schedule, and an overview of data collection completed to date. Discussion was held regarding a community survey. There was a brief overview of the Town's 2018 Earth Day event and discussion of project outreach to be held at the 2019 Earth Day event. For homework, members were asked to respond to a SWOT Analysis and to review a bank of survey questions to provide input.

- **December 14, 2018** – Joint project meeting with the Environmental Committee and the Dredging Committee. Held in more of a workshop setting, groups discussed responses to the SWOT analysis that had already been received and were asked to determine whether they thought they were applicable to the Sustainability Plan. Groups were then asked to provide additional input on the survey questions in preparation for a draft survey to be devised for review. The final task was for each group to identify areas of concern on maps of the Town, including descriptions of concerns (e.g., bayside flooding, shoaling). Each group reported back on responses. There were discussions about what "environment" should mean and how narrowly or broadly the definition should apply.

- **April 20, 2019** – Town of Fenwick Island's Earth Day Event (See Community Outreach Section)

- **May 29, 2019** – Survey Reveal meeting with the Environmental Committee. The survey results were reviewed, compiled and presented along with a project update regarding the next steps of the project. The survey highlights were discussed amongst the Committee as well as areas of concern and the need for additional educational opportunities with partners. For detailed survey information, see the Community Survey.

- **June 27, 2019** – Vision and Goals meeting with the Environmental Committee. Town staff provided known initiatives and committee descriptions for consideration into the Plan. Discussions were held regarding any known goals and objectives from the Committee for consideration into the plan prior to reading the initial draft of the document.

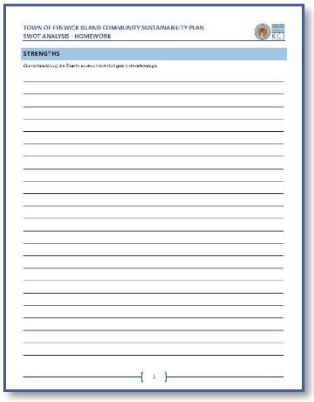
- **August 8, 2019** – Draft document presentation with the Environmental Committee. The Town consultant presented the rough draft document and identified areas needing attention. Discussion was held with recommendations from the Committee for consideration into the next draft.

- **August 28, 2019** – The second draft document was discussed with the Environmental Committee. The Town consultant presented the draft document after receiving several supportive documents and Committee input recommendations. Discussion was held to further determine the goals and objectives for consideration in the final draft of the plan and adoption schedule.

- **September 18, 2019** – A draft final Plan was released for final review with the Environmental Committee in advance of the meeting. This allowed the Plan to be reviewed in advance and comments collected for discussion and consideration during the meeting.

- **September 27, 2019** – The Environmental Committee and the Town consultant presented the "Town of Fenwick Island's Community Sustainability Plan" to the Town Council for review and consideration.

TOWN S.W.O.T. ANALYSIS



Each member of a Town Board, Committee, Council and Staff were asked to complete an anonymous S.W.O.T. (Strengths, Weaknesses, Opportunities, & Threats) Analysis. The purpose of this exercise is to assist the project consultants in obtaining localized individual input that is released collectively from more of an internal perspective. The *Strengths* are characteristics of the Town's environment that give it an advantage, *Weaknesses* are characteristics of the Town's environment that place it at a disadvantage, *Opportunities* are elements of Fenwick Island's environment that the Town could use to its advantage and *Threats* are elements of the Town's environment that could cause trouble for Fenwick Island.

The complete responses verbatim are attached in the Appendix Section of this document; however, listed below are some of the response highlights:

1. *STRENGTHS* –
    - Picturesque, small Town
    - Good staff & Town Council
    - Small businesses and supportive Chamber
    - Best wide beach and surf
    - Nice canals
    - Low building height
    - Low crime
    - Yearly clean ups and initiatives
    - Clean & good stewardship
    - Multi-generational

2. *WEAKNESSES* –
    - Narrow strip between the Ocean and Bay
    - Bay pollution, need for dredging and flooding
    - Derelict properties
    - Beach replenishment and dune fencing/signage
    - Above ground utility poles
    - Lack of parking
    - Lack of sidewalks creating a safety issue
    - Littering
    - Commercial district appearance
    - Uncontrolled County growth impacts
    - Water quality & flooding
    - Seismic testing & off-shore drilling
    - Aging population
    - Code Updates
    - Transportation

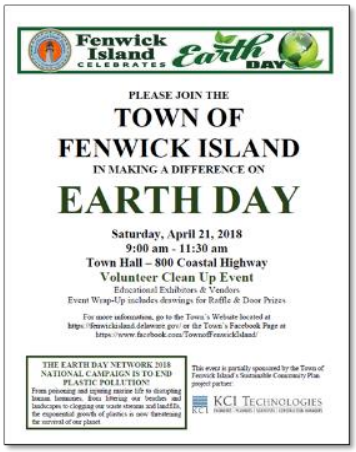
3. *OPPORTUNITIES –*
    - Interest level/commitment of residents
    - Encourage continuation of small, locally owned businesses
    - Partnerships with neighboring towns and organizations for similar initiatives and issues
    - Continue communication in the Community
    - Increase parking
    - Education and promotion of initiatives (environmental concentration)
    - Reduce speed
    - Private/Public transportation partnership

4. *THREATS*
    - Overdevelopment
    - Dying trees
    - State park expansion/parking
    - Flooding (beach side and bay side) & flood insurance
    - Water pollution
    - Sea Level Rise
    - Preventative maintenance of beaches, dunes, etc.

COMMUNITY OUTREACH

The Town held a successful event each year that celebrated Earth Day and this was determined the event to promote the project and collect input for the Plan. Since this was a multi-year project, the project team was able to attend two Earth Day events. Two planning meetings were held with the Project Consultant, Town staff and the Environmental Committee to create outreach materials and increase the event's awareness throughout the community.

The Committee solicited local sponsors for the event and created a new branding theme to be used throughout the event, starting with the new event banner along with the outreach flyers. The new branding theme is shown in the following outreach materials used annually for the event:



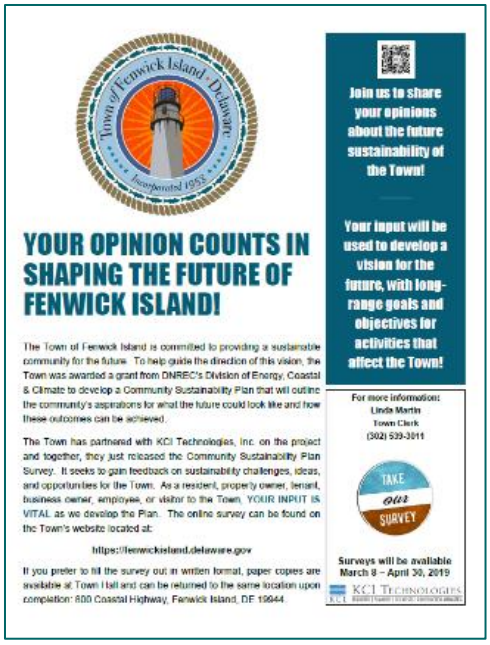
Several competing Earth Day events and other activities take place in neighboring Communities; however, this event draws support of those that want to make a difference locally in their Community. This event is coordinated by the Town Environmental Committee along with support from the Mayor and Council as well as many Town staff employees and local sponsors. Each year several volunteers pick trash up along the roadways in and around the Town. The Town further hosts educational exhibitors and vendors for the event. Attendees are able to discuss current initiatives and interact with other organization representatives. The event always wraps up with a raffle drawing and door prizes. Additional information and photographs are shown below for each year:

- **Earth Day 2018:** The Town held its annual Earth Day celebration on Saturday, April 21, 2018 from 9:00 am – 11:30 am at Town Hall. All participants were given a bag and a pack of native seeds to plant. Several local newspapers and businesses promoted the event as well.

- **Earth Day 2019:** The Town held its annual Earth Day celebration on Saturday, April 20, 2019 from 9:00 am – 11:30 am at Town Hall. All participants were given a bag and a pack of native seeds to plant. Several local newspapers and businesses promoted the event as well.

COMMUNITY SURVEY

The Town values and understand the importance of local input and feedback with any initiatives and projects. A community survey was created to obtain anonymous feedback from those who are willing to take the time to complete the survey. It was noted that it was not the most ideal time to launch a Community survey in early March then close the survey in mid-May as it is considered off season; however, this was determined by the project timeline for completion.



The survey was created with input from the Town staff and Environmental Committee. They were available online and in paper format (located at Town Hall) for completion as well as continually promoted by the Town staff and Committee members. Each anonymous participant was asked twenty-three questions and given an opportunity to provide additional written comments. The Town received forty completed surveys.

The survey results and write in comments are attached in the Appendix Section of this document; however, listed below are some of the response highlights from the 40 respondents:

- 67.50% were 60 plus years of age
- 60% were retired
- 50% are a permanent resident of the Town
- 57.50% live, work or visit the Town all year
- 40% have lived, worked or visited the Town between 10-30 years
- 76.92% indicated Bayside Flooding as the strongest level of concern for hazards
- 67.57% stated bayside Flooding hazards have directly impacted them or their business
- 68.42% stated More Frequent Bay Flooding as the highest level of concern for risk
- 65.79% agreed that “Efforts to slow erosions should be made and beach and dune nourishment used to replace lost land” for future shoreline change
- 60% agreed that “Efforts to minimize flooding should be made while at-risk assets are relocated” for future flooding
- 52.63% are very concerned about sea level rise and/or severe weather events
- 44.12% are mostly concerned about their house
- 92.11% feel that the flooding climate impacts are the most important concern

3 BACKGROUND & DEMOGRAPHICS

HISTORY

The first traces of settlement on the land now known as Fenwick Island can be traced to colonial times. On March 23, 1680, Lord Baltimore granted an area of land known as "Fishing Harbor" to Col. William Stevens, who later conveyed the land to Thomas Fenwick in 1692. Though Thomas Fenwick lived in Sussex County for quite some time, he never actually resided on the island. It is believed that Fenwick Island's name actually hails from William Fasset, the husband of Thomas Fenwick's daughter, Mary, who claimed Fenwick Island for himself.

Between 1750 and 1751, the Trans-Peninsular line was laid out by surveyors to denote the boundary between land claimed by the Penn family to the north and land claimed by the Calvert family of Maryland to the south. The first survey stone was set on a tract of land later purchased for the Fenwick Island Lighthouse and is considered the oldest standing manmade object on the coast between the Indian River and Ocean City.

With the exception of tales of pirates patrolling waters of Assawoman Bay throughout the late 1600s into the mid-1700s, human habitation on Fenwick Island appears to have been quite limited. By the mid-1800s, increasing numbers of shipwrecks near the shoals to the east of Fenwick Island garnered the attention of the U.S. Lighthouse Board. The U.S. Congress authorized the construction of a new lighthouse on Fenwick Island in 1856, and in 1858, the government purchased a ten acre-tract of land to build the 87-foot-tall lighthouse and a two-story keeper's dwelling.

Two families lived in the keeper's house in relative isolation throughout the late 1800s. Improvements on the island were mostly limited to a bridge to the mainland constructed in 1880 and a new keeper's house in 1881. The first bridge was destroyed by the strong ocean currents. A second bridge to the mainland was built in 1892, a third built in 1934, and eventually the current bridge was constructed in 1958.

The first cottages began to dot Fenwick Island in the early 1930s. These first cottages were of simple construction, with no running water or electricity, and many were built on State land. The State of Delaware recognized the "squatting" and, in 1941, offered cottage owners the opportunity to buy the lots at a price of $200 for beachfront lots or $100 for street lots.

With increasing development surrounding Fenwick Island, residents sought to incorporate the land to protect it from surrounding development pressures. The Act to Incorporate the Town was passed in July of 1953.

Fenwick Island has become a year-round town that prides itself on its reputation as being one of "The Quiet Resorts" that, along with Bethany Beach and South Bethany to the north, remain quieter and less populated than other nearby resort communities.

POPULATION, HOUSING & ECONOMIC CHARACTERISTICS

Unless noted otherwise, the data and statistics in this section were derived from the 2010 U.S. Census, 2012-2016 American Community Survey 5-Year Estimates, the Delaware Population Consortium, and verified with the Town of Fenwick Island. Information has also been obtained from the Town's recent 2017 Comprehensive Plan Update. It is important to note that Fenwick Island is a unique resort destination comprised of full-time residents, seasonal residents, and seasonal visitors; thus, population numbers vary throughout the year. Similarly, with a small full-time resident population base, any change in population numbers has a potentially large effect on trend predictions due to the small sample sizes and potentially increased margins of error.

Given the popularity of coastal Sussex County and Fenwick Island, the Town's population is projected to continue its increase; however, it is expected that population increases will be limited to seasonal residents that transition to full-time residents and residents that move to new houses built on currently vacant lots. Demographics indicate that Fenwick Island is predominantly white, upper-middle class, and over the age of 55, point to the Town's desirable living conditions among retirees. These same desirable living conditions attract large numbers of seasonal residents and visitors to the Town as well.

With little inventory of developable, new construction is more than likely occurring on vacant lots or redevelopment of lots with existing, older structures. The Town is now seeing a shift as people are buying homes to use as investment rental properties or as vacation properties. Because of these factors, it is difficult to say when Fenwick Island could reach full build out, but nearing full build out will continue to slow population growth and fuel an increase in property values and housing demand as the market dictates.

TOTAL POPULATION

The 2000 U.S. Census reported a total population of 342 full-time residents in Fenwick Island. According to Census information, the Town's population increased 84% from 186 residents to 342 residents from 1990 to 2000. In contrast, Sussex County grew from 113,229 people in 1990 to 156,638 in 2000, an increase of 38%. The State of Delaware also saw a much smaller population increase, growing from a population of 666,168 in 1990 to 783,600 in 2000, an increase of 18%.

Those figures can be compared to the 2010 U.S. Census, which reported a total population of 379 full-time residents. Since 2000, the Town's population has increased 11%, far less than the growth rate experienced in the previous 10 years. In Sussex County, the population grew by 26% and the State's population grew by 15% in that same time frame.

In the period from 1990 to 2000, Fenwick's growth rate was more than double the County's and more than four times the State's growth rate. While the entire region continues to grow, Fenwick Island Island's remarkable growth rate during that time period exhibited the desirable living conditions of the coastal Sussex County area. While the growth rate has since declined, Fenwick is still a very popular retirement and tourist destination. As growth continues in the region, housing, cultural, and environmental resources will face mounting pressure.

The Town estimates its primary resident population as 270 residents in 2016 according to tax records. This number is significantly lower than the count provided by the Census in 2010. It is not believed that Fenwick Island lost residents over this time period. The 2017 Comprehensive Plan posits that the 2010 U.S. Census information may have included populations outside of the Town's municipal boundaries.

It should be noted that population counts and estimates provided by the U.S. Census are based on counts or estimates of people at their place of residence on April 1 of the census year; therefore, population numbers do not include all seasonal residents.

Table 1. Population History

Year	Population		
	Fenwick Island	Sussex County	Delaware
1960	48	73,195	446,292
1970	56	80,356	548,104
1980	114	98,004	594,338
1990	186	113,229	666,168
2000	342	156,638	783,600
2010	379	197,145	897,934
2016	398	211,224	934,695

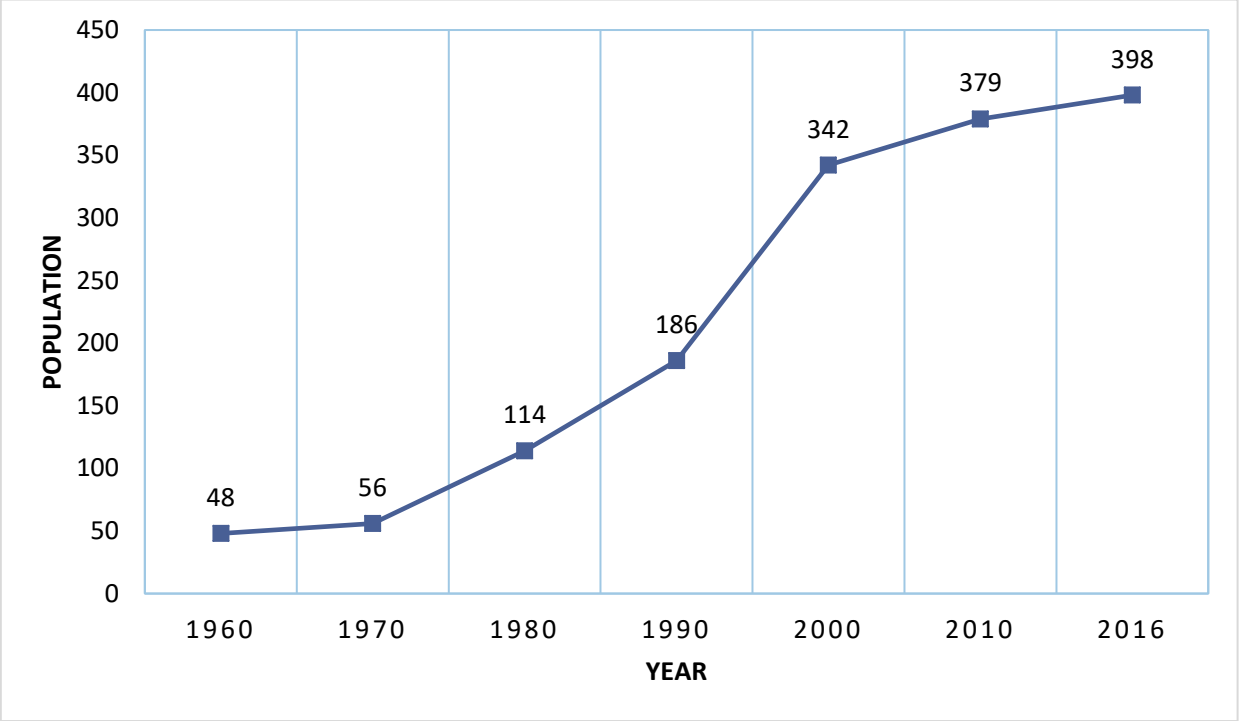
Source: U.S. Census Bureau Decennial Census (1960-2010); 2012-2016 American Community Survey

Table 2. Population Growth

Jurisdiction	Year				% Change		
	1990	2000	2010	2016	1990-2000	2000-2010	2010-2016
Fenwick Island	186	342	379	398	+83.9%	+10.8%	+5.0%
Bethany Beach	326	903	1,060	871	+177.0%	+ 17.4%	- 17.8%
South Bethany	148	492	449	424	+ 232.4%	- 8.7%	- 5.6%
Sussex County	113,229	156,638	197,145	211,224	+ 38.3%	+ 25.9%	+ 7.1%
Delaware	666,168	783,600	897,934	934,695	+ 17.6%	+ 14.6%	+ 4.1%

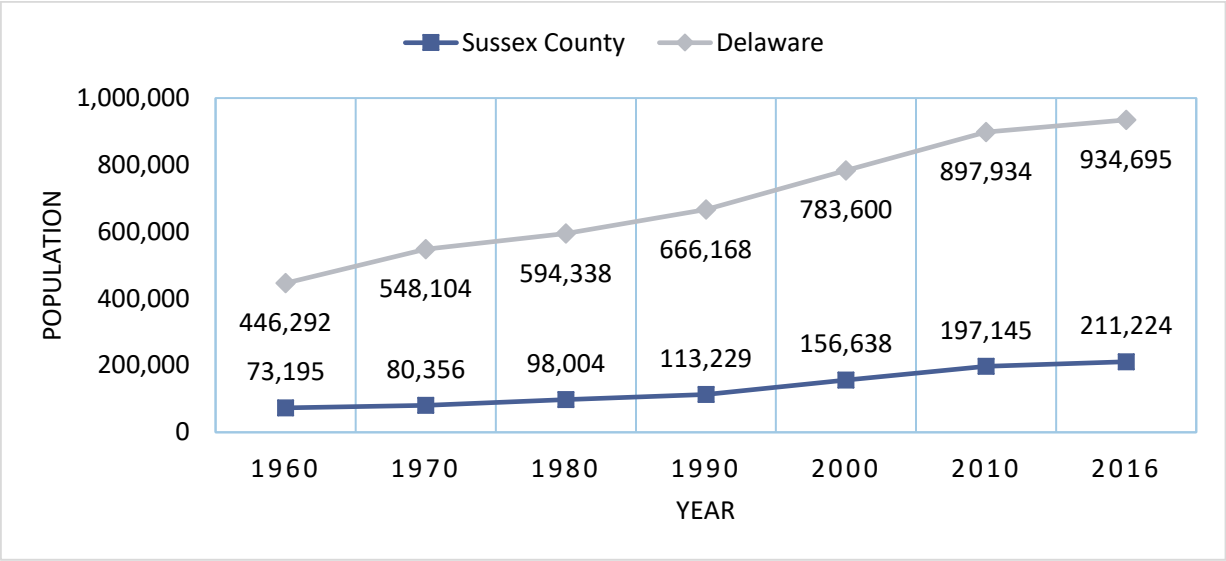
Source: U.S. Census Bureau – 1990, 2000, 2010 U.S. Census; 2012-2016 American Community Survey 5-Year Estimates

Figure 1. Fenwick Island Population Trends, 1960 – 2016



Source: U.S. Census Bureau Decennial Census (1960-2010); 2012-2016 American Community Survey

Figure 2. Sussex County & State of Delaware Population Trends, 1960 - 2016



Source: U.S. Census Bureau Decennial Census (1960-2010); 2012-2016 American Community Survey

VARYING SEASONAL POPULATIONS

The Town is similar to other Atlantic resort communities in that it is heavily influenced by its role as a resort community. Seasonal population fluctuates greatly and many residences are vacation homes with property owners living elsewhere; therefore, these residents are not counted Fenwick Island's year-round permanent population.

The 2017 Comprehensive Plan notes that the number of people residing in or staying in Fenwick Island at a given time can be estimated, based on information provided by the Town. The Town lists its full-time population in 2006 at 270 residents, a number that forms a base population for "off-season" months. During the peak summer season, the number of people staying in Town is significantly higher and is often dictated by the Town's "bed base" or the number of beds that can accommodate overnight guests or residents, with each bed equivalent to one person. The Comprehensive Plan indicates that there are 697 residential units, 46 of which are condominiums, with an average of 3.5 bedrooms per home. If two adults stay in each bedroom during peak summer periods, the Town is accommodating up to 4,879 people in residential units. In addition, the three motels within Town limits have an estimated 187 rooms with an average of two double beds per room. With four people per room, it is estimated that an additional 748 people may be able to stay in overnight accommodations, bringing Fenwick Island's total peak season bed base to over 5,627 people.

POPULATION PROJECTIONS

The 2017 Comprehensive Plan utilized three methods to demonstrate potential population projection scenarios over the next several decades. It also noted that, when dealing with small permanent populations, projections are potentially unreliable due to their margins for error.

The first method (Scenario 1 – Trend Projection of Decadal Growth) used an average percentage of population increase specifically for Fenwick Island, based on actual percentages for the past three decades starting in 1980 according to the U.S. Census, but using the Town's current population estimate as a baseline. The second method (Scenario 2 – Portion of Projected Sussex County Growth) uses Fenwick Island's portion of Sussex County's overall population increase over the past three decades according to the U.S. Census, while using the Town's current population estimate as a baseline.

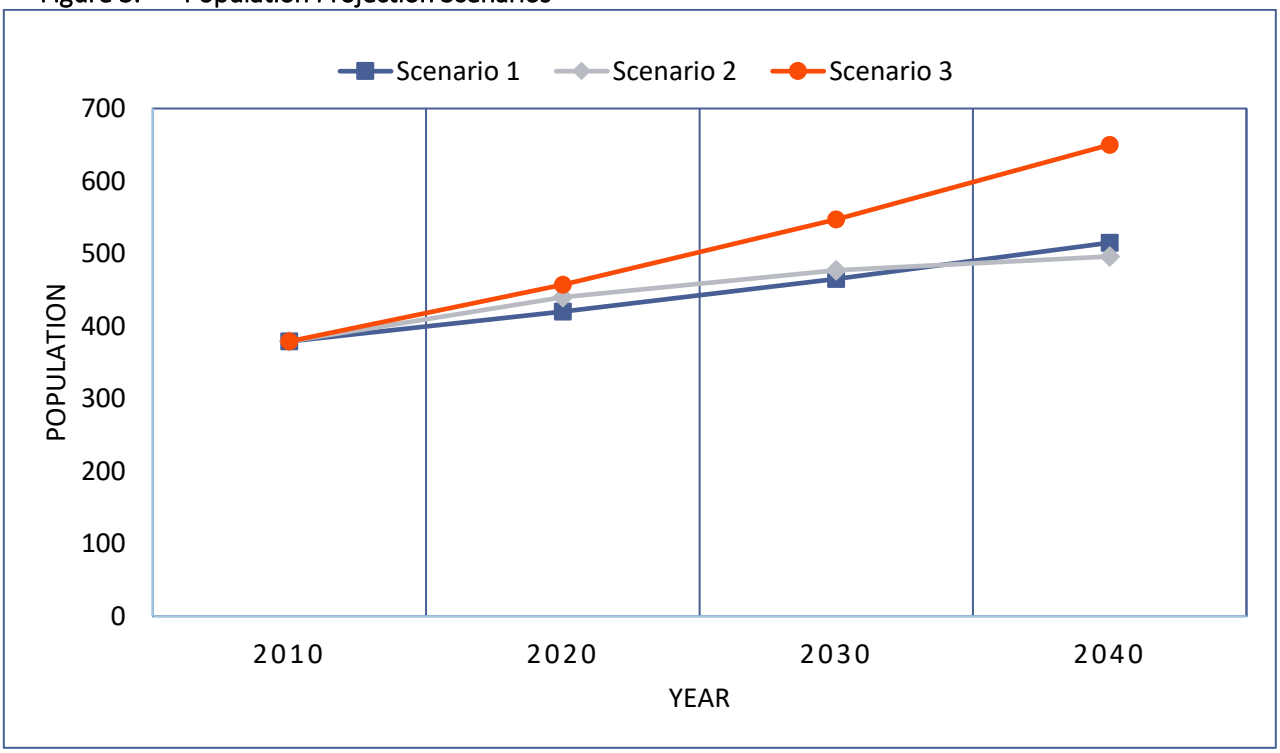
This number generates a more conservative population projection than Scenario 1. Finally, the third method (Scenario 3 – Transition from Seasonal to Full-Time Residents & Vacant Lands Buildout) demonstrates the population increase based on the transition of seasonal to full-time residents plus the increase in additional residential units through full build out of the existing municipal area. There were approximately 636 occupied residential lots in Fenwick Island and approximately 63 vacant buildable lots. It was estimated that Scenario 3 represented the most likely growth scenario.

Table 3. Population Projection Scenarios

Scenario	2010	2020	2030	2040
Scenario 1: Trend Projection of Decadal Growth	379	420 +10.8%	465 +10.8%	515 +10.8%
Scenario 2: Portion of Projected Sussex Co. Population	379	440 +16.0%	477 +8.4%	496 +4.0%
Scenario 3: Transition of Seasonal to Full-Time Residents & Vacant Lands Buildout	379	457 +20.6%	547 +19.7%	650 +18.8%

Source: 2017 Comprehensive Plan Update (U.S. Census 2010, Delaware Population Consortium)

Figure 3. Population Projection Scenarios

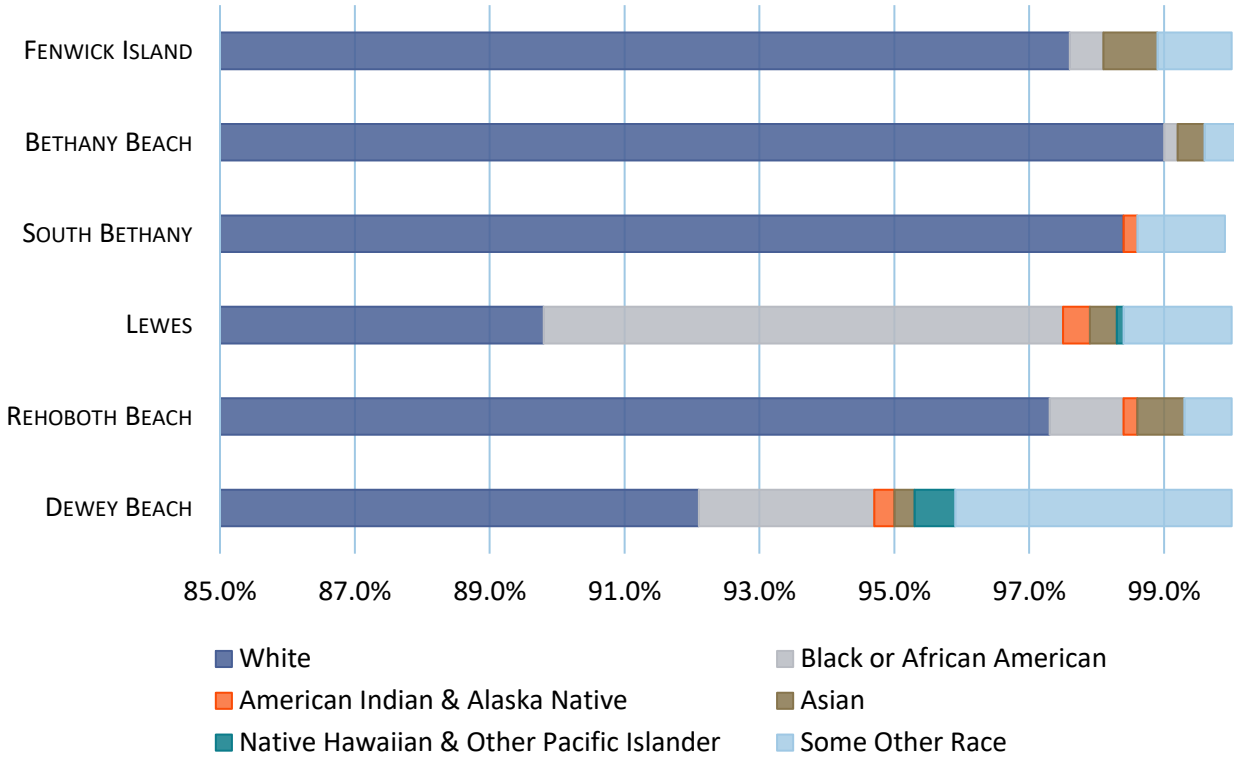


Source: 2017 Comprehensive Plan Update (U.S. Census 2010, Delaware Population Consortium)

RACIAL AND ETHNIC COMPOSTION

Figure 4 provides the racial composition of Fenwick Island, compared to Sussex County and the State of Delaware, according to the 2010 U.S. Census. Similar to many of Delaware's other coastal resort towns, Fenwick Island's racial composition is primarily white and ethnic composition is non-Latino.

Figure 4. Racial Composition of Delaware Coastal Resort Towns, County & State (2010)



Source: 2010 U.S. Census

Table 4. Change in Fenwick Island's Racial Composition, 2000 – 2016

Race	2000		2010		2016		% Change	
	No.	Percent	No.	Percent	No.	Percent	'00–'10	'10-'16
One Race	340	99.4%	378	99.7%	395	99.2%	+11.2%	+4.5%
White	340	99.4%	370	97.6%	384	96.5%	+8.8%	+3.4%
Black or African American	0	0.0%	2	0.5%	0	0.0%	-	-100.0%
American Indian /Alaska Native	0	0.0%	0	0.0%	0	0.0%	-	-
Asian	0	0.0%	3	0.8%	6	1.5%	-	+100.0%
Native Hawaiian & Other Pacific Islander	0	0.0%	0	0.0%	0	0.0%	-	-
Some Other Race	0	0.0%	3	0.8%	5	1.3%	-	-
Two or More Races	2	0.6%	1	0.3%	3	0.8%	-50.0%	+200.0%
Totals	**342**	**100.0%**	**379**	**100.0%**	**398**	**100.0%**	**+10.8%**	**+5.0%**

Source: 2000 & 2010 U.S. Census; 2012-2016 American Community Survey

Table 5. Fenwick Island Population Reporting Hispanic or Latino Origin, 2000 - 2016

Origin	2000		2010		2016		% Change	
	No.	Percent	No.	Percent	No.	Percent	'00–'10	'10-'16
Hispanic or Latino (of any race)	9	2.6%	4	1.1%	0	0.0%	-55.6%	-100.0%
Not Hispanic or Latino	333	97.4%	375	98.9%	398	100.0%	+12.6%	+6.1+
Total Population	**342**	**100.0%**	**379**	**100.0%**	**398**	**100.0%**	**+10.8%**	**+5.0%**

Source: 2000 & 2010 U.S. Census; 2012-2016 American Community Survey

AGE

The population of Fenwick Island tends to be older than the relative populations of Sussex County and the State. Approximately 46% of the Town's residents are over the age of 65, a percentage that is more than triple and double that of the State and County percentages, respectively. The statistics point to the belief that Fenwick Island is a popular destination for retirees.

Table 6. Age Distribution, 2000 - 2016

	Age	2000		2010		2016		% Change	
		No.	Percent	No.	Percent	No.	Percent	'00–'10	'10-'16
Fenwick Island	Under 5 Years	4	1.2%	4	1.1%	6	1.6%	0%	+50.0%
	5 to 19 Years	19	5.6%	28	7.4%	8	2.0%	+47.4%	-71.4%
	20 to 64 Years	184	53.8%	172	45.4%	161	40.5%	-6.5%	-6.4%
	65 Years & Over	135	39.5%	175	46.2%	223	56.0%	+29.6%	+27.4%
	Total	**342**	**100.0%**	**379**	**100.0%**	**398**	**100.0%**	**+10.8%**	**+5.0%**
	Median Age	60.9		63.9		67.8			
Sussex County	Under 5 Years	9,009	5.8%	11,487	5.8%	11,600	5.5%	+27.5%	+1.0%
	5 to 19 Years	29,690	19.0%	33,013	16.7%	33,538	15.9%	+11.2%	+1.6%
	20 to 64 Years	88,917	56.8%	111,572	56.7%	114,939	54.4%	+25.5%	+3.0%
	65 Years & Over	29,022	18.5%	41,073	20.8%	51,147	24.2%	+41.5%	+24.5%
	Total	**156,638**	**100.0%**	**197,145**	**100.0%**	**211,224**	**100.0%**	**+25.9%**	**+7.1%**
	Median Age	41.1		45.4		47.6			
Delaware	Under 5 Years	51,531	6.6%	55,886	6.2%	55,611	5.9%	+8.5%	-0.5%
	5 to 19 Years	166,719	21.3%	177,917	19.8%	174,420	18.7%	+6.7%	-2.0%
	20 to 64 Years	463,624	59.2%	534,854	59.6%	550,831	58.9%	+15.4%	+3.0%
	65 Years & Over	101,726	13.0%	129,277	14.4%	153,833	16.5%	+27.1%	+19.0%
	Total	**783,600**	**100.0%**	**897,937**	**100.0%**	**934,695**	**100.0%**	**+14.6%**	**+4.1%**
	Median Age	36.0		38.8		39.6			

Source: 2000 & 2010 U.S. Census; 2012-2016 American Community Survey

EDUCATION

Table 7 provides information comparing the educational attainment of Fenwick Island's population over the age of 25 to that of Sussex County and the State of Delaware in 2016. Over 97% of the Town's population have at least a high school diploma, a number that is 8-10% higher than the State and County percentages, respectively. Similarly, over 56% of the Town's population hold a college degree of some level, a number that is 33-38% higher than the County and State percentages, respectively.

Table 7. Educational Attainment, 2016

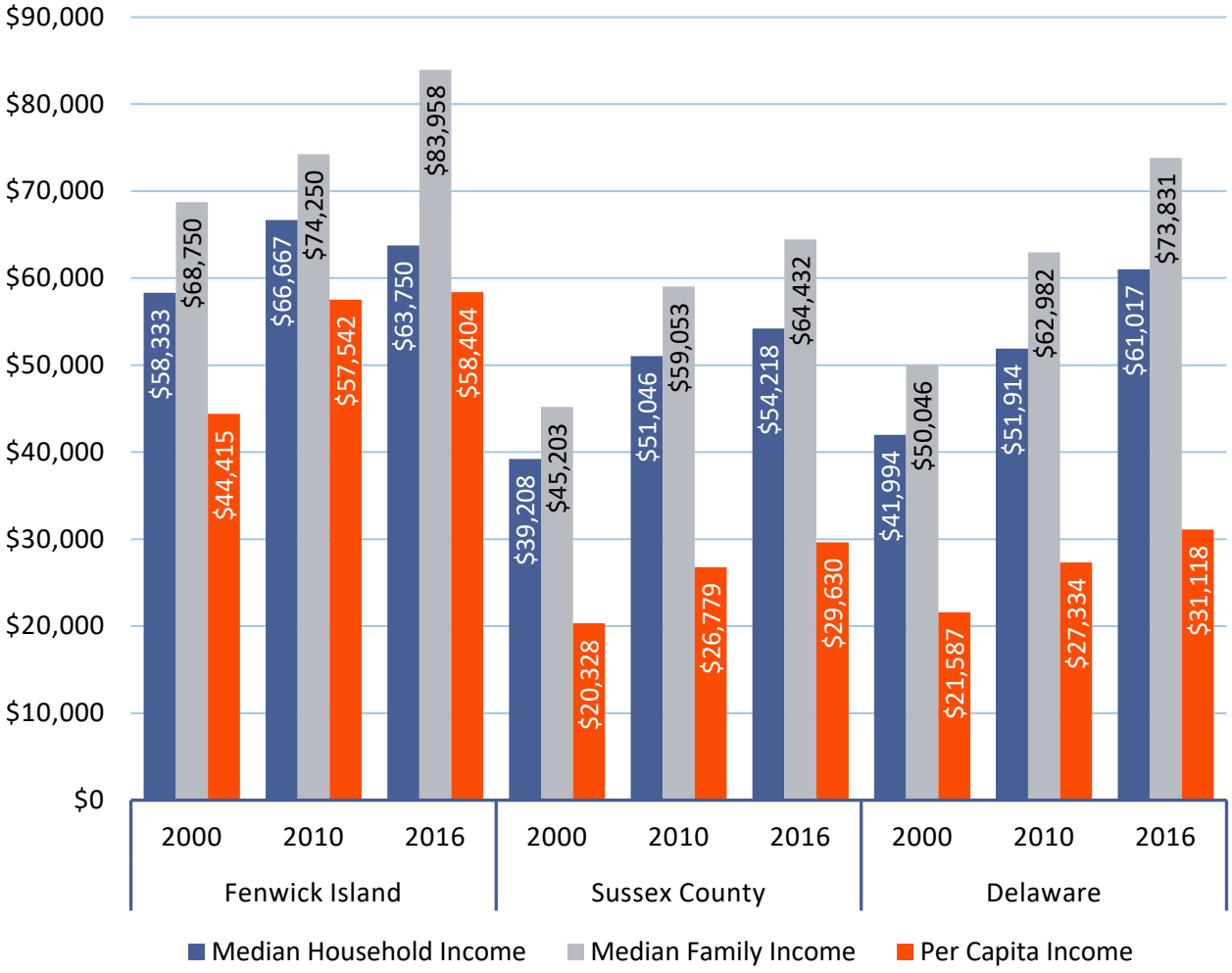
	Fenwick Island		Sussex County		Delaware	
Educational Level	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Not HS Graduate	10	2.6%	21,408	13.8%	71,746	11.2%
High School Graduate	84	21.9%	53,843	34.7%	199,461	31.1%
Some College, No Degree	73	19.0%	28,768	18.5%	124,796	19.5%
Associate's Degree	14	3.6%	14,123	9.1%	49,591	7.7%
Bachelor's Degree or Greater	203	52.9%	37,073	23.9%	195,321	30.5%
Total Population 25 Years or Older	**384**	**100.0%**	**155,215**	**100.0%**	**640,915**	**100.0%**

Source: 2012-2016 American Community Survey

INCOME & POVERTY

The higher levels of educational attainment in Fenwick Island correlates with the tendency of the Town's residents to maintain a higher median income, as compared with the State and County.

Figure 5. Household, Family & Per Capita Income, 2000-2016



Source: 2000 U.S. Census; 2006-2010 & 2012-2016 American Community Survey

Table 8. Resident Income Sources, 2016

Households	No.	%
With Earnings	109	48.2%
Mean Earnings (dollars)	*$85,761*	
With Social Security	147	65.0%
Mean Social Security Income (dollars)	*$25,455*	
With Retirement Income	105	46.5%
Mean Retirement Income (dollars)	*$41,775*	
With Supplemental Security Income	4	1.8%
Mean Supplemental Security Income (dollars)	*Not Reported*	
With Cash Public Assistance Income (dollars)	0	0.0%
Mean Cash Public Assistance Income (dollars)	-	
With Food Stamp/SNAP Benefits	5	2.2%

Source: 2012-2016 American Community Survey

Table 9. Poverty Status of Age Group, 2000 – 2016

Age Group	Fenwick Island			Sussex County			Delaware		
	2000	2010	2016	2000	2010	2016	2000	2010	2016
All Ages	8.5%	3.6%	5.0%	10.3%	11.7%	12.9%	8.9%	11.0%	12.0%
Age 0-17	0.0%	0.0%	0.0%	14.9%	20.4%	22.6%	12.0%	16.3%	17.6%
Age 18-64	9.0%	6.8%	3.7%	9.2%	10.4%	12.4%	8.0%	9.8%	11.4%
Age 65+	6.7%	1.1%	6.3%	8.0%	6.5%	6.2%	7.5%	7.3%	7.0%

Source: 2000 U.S. Census; 2006-2010 & 2012-2012 American Community Survey

In general, the Town's poverty status has decreased since the year 2000. As shown in Table X, the under 18 age group has reported a 0% poverty status during the 2000-2016 time period. Percentages of the population in poverty are higher in the 18-64 and over 65 age groups; however, these percentages are less than percentages compared to the County and State. A high percentage of residents receive Social Security and retirement incomes, but this is to be expected when compared to the Town's age groups and assumptions regarding retirement age.

HOUSING

The 2010 U.S. Census indicated that Fenwick Island had a total of 764 residential housing units, up 72 units from the 2000 U.S. Census figure of 692, an increase of approximately 10.4%. Interestingly, during this same time period, the Town's population increased by 10.8%.

Town records, in addition to the 2012-2016 American Community Survey, indicate slightly different numbers. As of 2016, the Town estimates that there were 697 residential housing units in Town, up 21 units from 2006. This number is lower than the U.S. Census count. The 2017 Comprehensive Plan Update posits that this is due to the Census counting mobile home units, located outside of the Town's municipal boundaries, in its unit count. The Town did note that between 2001 and 2006, housing unit growth increased by 46%, half the pace of the increasing population. The 2012-2016 American Community Survey estimated that there were 760 total housing units in Fenwick Island. This number is slightly less than the 2010 U.S. Census count, but still higher than the number estimated by the Town.

The Town's residential units are comprised primarily of single-family units. This percentage is significantly higher than that of Sussex County and the State. The dominance of single-family units speaks to the Town's overall character as a low-density, primarily residential community, similarly seen in neighboring coastal communities.

Table 1. Type of Housing Units, 2016

Housing Type	Fenwick Island		Sussex County		Delaware	
	Number	Percent	Number	Percent	Number	Percent
Single-Family, Detached	663	87.2%	80,468	62.2%	244,866	58.6%
Single-Family, Attached	35	4.6%	11,027	8.5%	62,003	14.8%
Multi-Family*	62	8.2%	15,122	11.7%	74,298	17.8%
Mobile Home	0	0.0%	22,694	17.5%	36,608	8.8%
Other**	0	0.0%	51	0.0%	152	0.0%
Total	**760**	**100.0%**	**129,362**	**100.0%**	**417,927**	**100.0%**

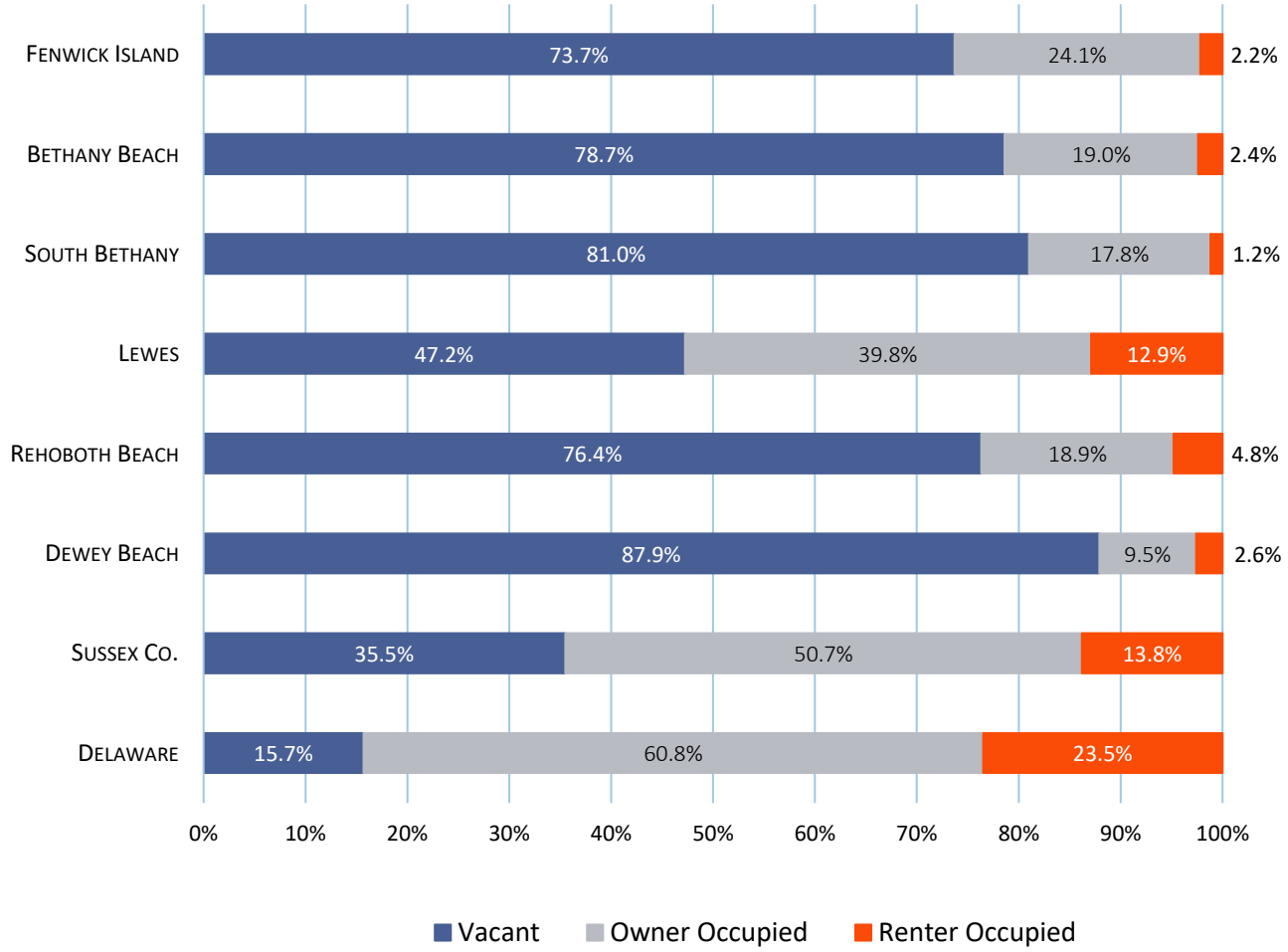
*Source: 2012-2016 American Community Survey. Notes: *For the purpose of this table, multi-family housing units are defined by the U.S. Census Bureau data as any structure comprised of 2 or more housing units. **Other includes boat, RV, van, etc.*

OWNERSHIP & VACANCY RATES

Figures 6 and 7 show that there is an uneven balance of vacant homes and vacant homes that are seasonally occupied, respectively. At nearly 74%, Fenwick Island had a significantly higher percentage of vacant housing units than the County or the State, but was relatively consistent when compared to other coastal resort communities. With population increasing at a faster rate than the construction of new housing units, it can be assumed that some seasonal homes are becoming permanent residences from 1990 to 2000. It can also be assumed that, with the decrease in growth rate and increase of new housing units from 2000 to 2010, people are now investing in additional homes either as second homes or as investment properties.

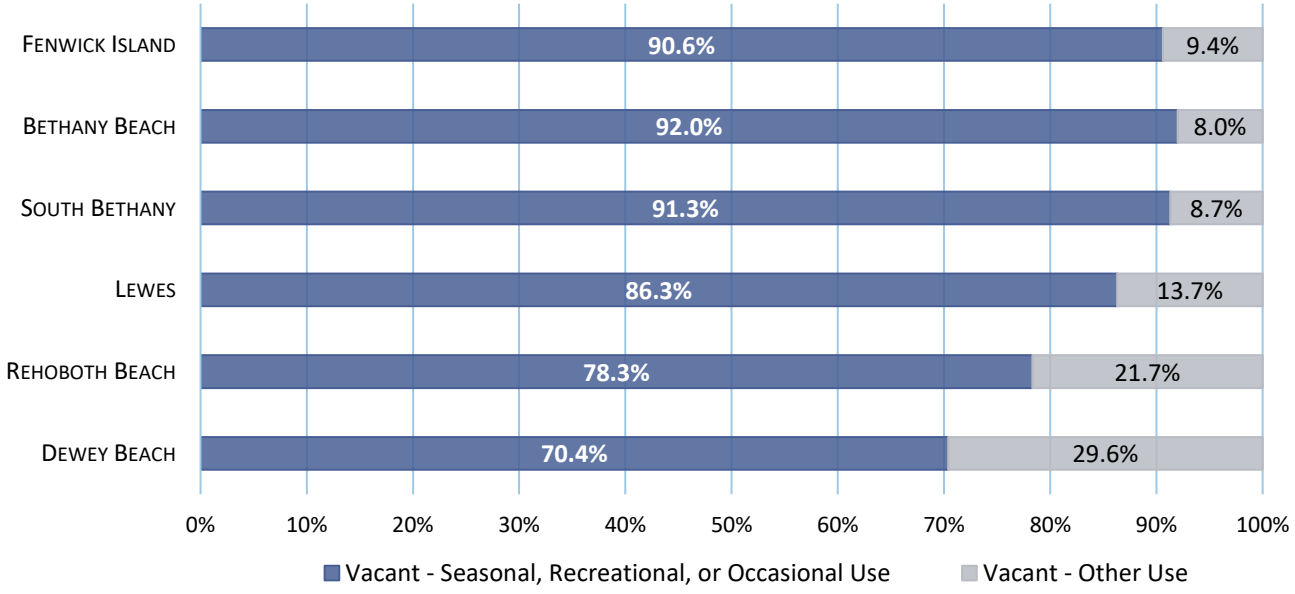
While full-time residents contribute to a more active year-round economy, there are side effects of a disproportionate population to housing growth. An increase in full-time residents will create increased demand on public utilities, schools, health care, and services provided by the Town and others. The housing demand compared to housing supply will also tend to increase both real estate values and rental costs, making housing harder to find, especially for young families and the workforce populations.

Figure 6. Ownership & Vacancy Rates of Delaware Coastal Resort Towns, County & State (2010)



Source: 2010 U.S. Census

Figure 7. Seasonal, Recreational, or Occasional Use Vacancies for Delaware Coastal Resort Towns, 2010

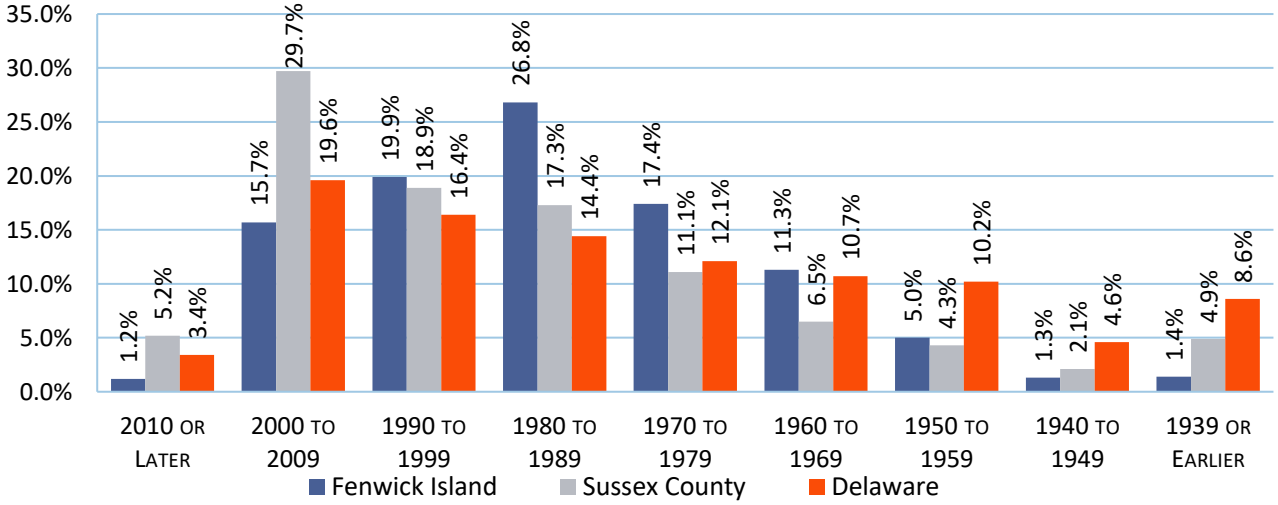


Source: 2010 U.S. Census

AGE OF HOUSING STOCK

Figure X provides a comparison of the age of Fenwick Island's housing stock to that of both Sussex County and the State of Delaware. The 2017 Comprehensive Plan Update assumes that, because of difficult living conditions and lack of access and infrastructure, Fenwick Island remained largely undeveloped into the early 1900s and experienced a significantly lower construction rate than both the County and State through the 1930s. As the Town's popularity increased into the 1940s, the percentage of new home construction began to match or exceed State and County percentages and continued to do so through the late 1980s. At that time, Fenwick Island was essentially built out within its existing boundaries. Since 2000, new home construction has slowed to 16.9%, less than both the State and County percentages according to the 2012-2016 U.S. Census. It is assumed that the slowdown is attributed to a lack of buildable area remaining within Town boundaries. It can also be anticipated that a slower building rate than earlier decades will prevail into the future unless the Town decides to annex additional non-developed land.

Figure 8. Age of Regional Housing Stock, 2016



Source: 2012-2016 American Community Survey

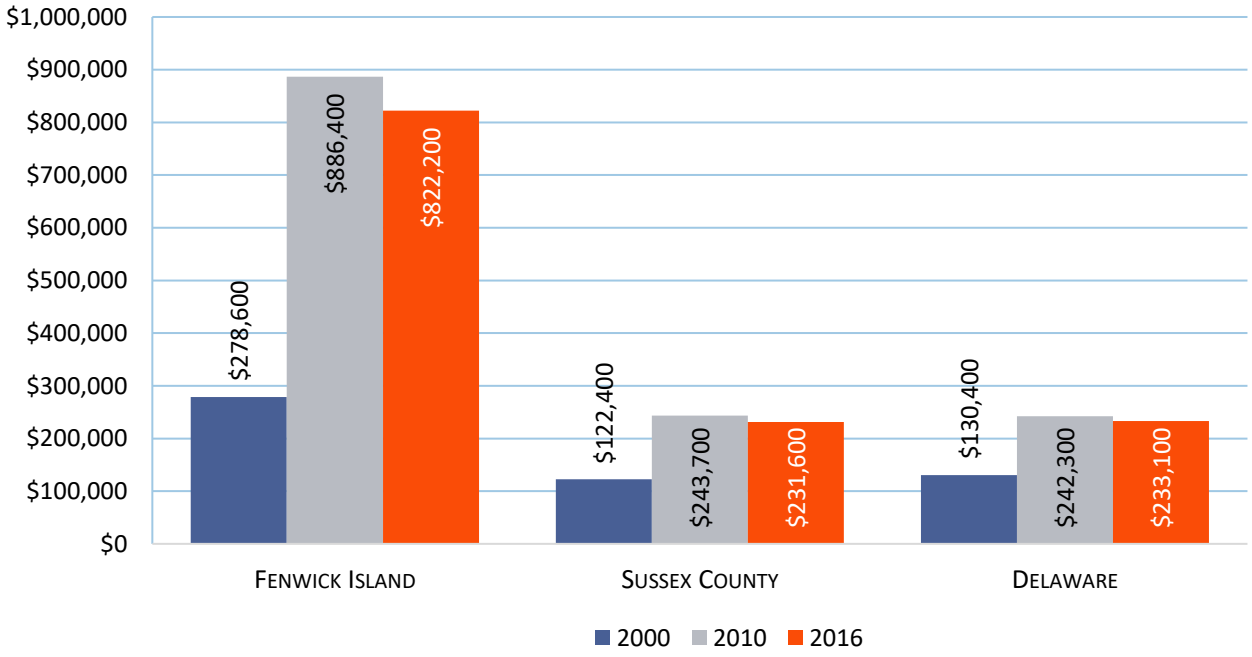
Another scenario posited by the 2017 Comprehensive Plan Update is that developers will be looking to acquire older, low-density properties in order to redevelop them with larger structures and higher density configurations, maximizing value and return on investment. Examples of this practice can already be seen in Town in the form of large structures built to the maximum size allowed under Zoning Regulations. While this practice does raise home values and contributes to the economy, it changes the scale of Fenwick's development patterns while also changing the community's character. The 2012-2016 American Community Survey also shows that almost 8% of the Town's housing was constructed prior to 1960, making these housing units eligible for consideration as historic structures. A historic structure inventory has not yet been completed for the Town.

HOUSING VALUE

The value of Fenwick Island's housing stock speaks to its residents' relatively higher income, upper-middle to upper-class residents. The 2012-2016 American Community Survey estimated the Town's owner-occupied median housing value at $822,200, more than triple the median value for both the County and State. Property values have continued to increase dramatically in the past several years.

The 2017 Comprehensive Plan Update notes that, based on homes sold in the past two years, the Town estimates that prices varied from $300,000 for Bayside houses to more than $2 million for Oceanfront houses. The Town also estimates that interior Bayside homes were selling for no less than $300,000; Bayside canal frontage homes were selling for between $450,000 to $975,000; and Bay frontage homes were selling for approximately $1 million. It was also estimated that Oceanside homes were selling for almost $1 million; however, some homes were listed for much higher. Oceanfront homes were selling for upwards of $2 million.

Figure 1. Median Housing Values (Owner-Occupied Units)



Source: 2000 U.S. Census; 2006-2010 & 2012-2016 American Community Survey

4 TOWN STRUCTURE & INITIATIVES

The Town of Fenwick Island is a small incorporated community located in Sussex County. At its closest point, it is approximately one-quarter mile from the Delaware-Maryland border at Delaware's southeastern edge. Fenwick Island is the State's southernmost incorporated community, located on the Assawoman Bay barrier island. The Town is bounded by the Fenwick Island State Park to the north, the Atlantic Ocean to the east, unincorporated Sussex County to the south, and the Assawoman Bay to the west.

Aerial view of Fenwick Island. Ocean City, Maryland is at the bottom of the photograph, Fenwick Island, Delaware is in the middle, and Fenwick Island State Park can be seen toward the top. Image provided by Tex Jobe, U.S. Army Corps of Engineers - U.S. Army Corps of Engineers Digital Visual Library

The Town encompasses an area of approximately one-third of a square mile. Bisected by State Route 1 (Delaware's primary north-south arterial) and located approximately one-quarter mile from State Route 54 (a key east-west arterial connecting the coastal communities with Delaware's inland areas), Fenwick Island is very accessible.

The Town's Charter states that all powers are vested in a seven-member Town Council with one member also serving as President and Mayor. The Town Council meets on the fourth Friday of each month and elections are held annually. The Charter and Municipal Code, including the Subdivision Regulations and Zoning and Building Ordinances, contain the rules that direct land use planning and development activities. Every person who owns property in Town is eligible to vote in elections.

The Town offices, as well as the police and public works departments are located in the Town Hall building complex. The Town benefits from a dedicated staff. Most Town employees have been with the Town for a

long period of time. This institutional knowledge and commitment is invaluable to a small organization. The Town also hired its first Town Manager in March 2007.

BOARD AND COMMITTEES

The Town has several Board and Committees, each with separate roles and responsibilities as defined by the Mayor and Council. Recently, a Planning Commission was created with appointed positions by Town Council. This seven citizen Commission charged with developing and recommending adoption of the Comprehensive Plan. The Commission reviews and makes suggestions in regards to land development applications, zoning, and land use. In addition to the Planning Commission, a Board of Adjustment, and a Board of Elections, the Town has also established a number of committees to address specific assigned tasks, implement initiatives, provide continual education, develop programs and continue to promote the greater good of the Community. The Town Committees are appointed annually by the Mayor at the October Council Meeting and are further described below:

AD HOC COMMERCIAL DISTRICT PLANNING COMMITTEE | A five member committee that, in conjunction with an architect/planner, are exploring potential design guidelines for the commercial district, reviewing conceptual and schematic design studies of possible model building and site planning in commercial areas, and developing possible changes to the ordinances to achieve more desirable outcomes.

AUDIT COMMITTEE | A three member committee that reviews the annual audit of the books and accounts of the Town.

BEACH COMMITTEE | A four member committee who oversees the events to support the Fenwick Island Beach Patrol. The annual fundraisers are the Fenwick Freeze (January) and Town Bonfire (July). All proceeds support activities of the Beach Patrol.

BUDGET COMMITTEE | A fourteen member committee that reviews the annual budget and capital plan and makes revision recommendations.

BUSINESS DEVELOPMENT | A nine member committee that addresses concerns specific to the business community. The Committee includes two representatives from the Chamber of Commerce appointed as non-voting members.

CHARTER & ORDINANCE COMMITTEE | A seven member committee that reviews and proposes ordinance and Charter amendments.

DREDGING COMMITTEE | A nine member committee charged with advocating for the dredging of the Little Assawoman Bay. The committee has been successful with having studies conducted on the Bay to include environmental recommendations to remove the dredge materials.

EMERGENCY MANAGEMENT & INFRASTRUCTURE COMMITTEE | A seven member committee charged with developing a processes, policies and procedures for the Emergency Operations Plan. The plan includes communication, resources, safety and security.

ENVIRONMENTAL COMMITTEE | A ten member committee charged with initiatives relating to the environment. Areas of discussion and concern are: pine wilt disease and the removal of dead trees, sea level rise, seismic testing and offshore drilling; plastic usage and elimination of single use plastic. The committee also participates in the yearly removal / count of cigarettes on the beach, hosts the Annual Earth Day Clean-Up, and holds public educational workshops.

FINANCE COMMITTEE | An eight member committee charged with developing and recommending changes to the procedures in regards to the Town's finances, including fees charged and accounts.

PEDESTRIAN SAFETY COMMITTEE | An eleven member committee currently advocating for the sidewalks along Route 1 in Fenwick Island working in conjunction with DelDOT.

TECHNOLOGY COMMITTEE| A fourteen member committee that reviews the Town's current technology situation and makes suggestions on where the Town might be technology-wise in the future.

COMMUNITY SERVICES

The Town provides and partners with multiple agencies and private companies to provide services to the Fenwick Community. Listed below are several of these services:

EMERGENCY OPERATIONS | The Town participates in the regional system for emergency services. The Emergency Operations Center, or EOC, is located in Georgetown and is the headquarters for natural and technical disasters. The EOC is a member of the Delmarva Emergency Task Force that meets quarterly to address the needs of the entire Delmarva Peninsula. As of October 2006, communities are required to be in compliance with the National Incident Management System (NIMS) to receive funding through the Department of Homeland Security. Fenwick Island meets NIMS requirements, allowing the Town to be a part of a unified approach to incident management and better work with other jurisdictions to respond to natural disasters and other emergencies. The 2017 Comprehensive Plan notes a need to evaluate Town personnel, training, and equipment to ensure the Town is able to respond to emergencies.

ANIMAL CONTROL | The State of Delaware currently provides animal control services to Fenwick Island. The Marine Education, Research, and Rehabilitation Institute (MERR) based in Nassau, DE responds to stranded marine mammals and sea turtles throughout the State. MERR also conducts research on marine species and provides education and outreach programs for schools and other groups.

PARKS & RECREATION | Historically, park and recreation needs in Fenwick Island were overseen by two different committees: Parks & Recreation and Beautification. The Parks & Recreation Committee was originally charged with the task of developing a small community park for gathering and activities. The results of this effort can be seen in the Town park to the north of Town Hall. The two committees were combined in August 2006 to form an eleven-member Beautification, Parks & Recreation Committee.

PUBLIC WORKS | Fenwick Island operates its own Public Works Department. The Department has a full-time staff and is responsible for a number of services including landscape maintenance, sign

maintenance, beach maintenance, road maintenance, town vehicle and facility maintenance, and drainage system maintenance and repair. A five-year road improvement plan is in place, which is mostly paid for with Town funds. The remainder is funded by the State.

TRASH & RECYCLING | Solid waste, recycling and yard water pick-up is a contracted service, provided by Waste Industries. Once provided by the Town's Public Works Department, limited manpower and equipment led to the need to outsource this service. The Public Works Department does handle recycling at beach dune crossing locations. Other recycling bins throughout Town are owned and collected by the Delaware Solid Waste Authority. The Town provides an annual calendar for these services to the Community.

STORMWATER | Fenwick's Oceanside drains via a surface open watercourse system with approximately 5 feet of fall between the oceanfront and SR1. The drainage system for SR1 is the only primarily closed drainage system in Town. This system picks up most of the stormwater from the Oceanside and outfalls within drainage easements to the canals at Virginia/West Virginia Avenue and South Carolina, Essex, Farmington, James, and Georgetown Streets.

Fenwick Island operates a primarily surface open watercourse drainage system throughout Town, with the exception of underground pipe to facilitate road and driveway crossings and minimal piping within private easements. Of the 40,000 linear feet of drainage in Town, only 6,500 linear feet are piped. The Public Works staff is trained in best management practices for drainage based on Total Maximum Daily Load strategies to reduce point source drainage in favor of open watercourses that allow infiltration and purification before returning to ground sources and the Little Assawoman Bay.

WATER | Potable water in Fenwick Island is provided either by Artesian Water or by a few remaining private wells. Artesian Water operates a water main on the eastern shoulder of SR1 from the northern Town boundary south to Maryland Avenue where the main is routed west. A second main has also been installed west of SR1 between James and Lewes Streets. Artesian Water has the capacity to serve densities higher than what currently exists in Town, as well as all properties along and accessed by SR 54 under the County's current and future land use plan. Capacity also exists to supply water for two-hour fire protection for Fenwick Island at its buildout. For redundancy, an emergency backup agreement exists with the Town of Bethany Beach.

WASTEWATER | Wastewater service is provided by Sussex County's South Coastal Regional Wastewater Facility. The facility was recently upgraded. Fenwick Island, unincorporated Fenwick Island, and the areas adjacent to SR 54 are included in the Fenwick Island Sewer District. Sanitary waste is conveyed by gravity lines along both sides of the right-of-way for most of SR1. The gravity lines start at the Maryland line to the south and Lewes Street to the north, both flowing to a pump station on Cannon Street. While the Sussex County wastewater facility has adequate capacity for projected growth, several line upgrades were identified as part of a recent study.

TOWN PLANS

Town documents were provided and reviewed specific to sustainability and environmental areas. These plans are important and each identify overlapping concerns or initiatives for the Town to consider and implement. These documents are further identified with specific extracted information:

COMPREHENSIVE PLAN UPDATE 2017

The Town underwent a Comprehensive Plan update in 2017 and received certification from the Governor in October 2017. The Plan's development was guided by a mission statement: "To be a quiet, family-oriented and walkable community that protects its natural beach and bay environment while including a desirable and sustainable primary residential area as well as a mixed residential and commercial use area per zoning."

As part of the Plan, it was confirmed that aspects of the Major Influence Physical Plan created as part of a series of public meetings during the 2007 Comprehensive Plan's development still reflect how Fenwick Island envisions the future. This preferred scenario includes the following "ideal visions" that can help to info this Community Sustainability Plan:

INFRASTRUCTURE | Additional improvements to State Route 1 were included for pedestrian and bicycle safety, through an updated Fenwick Island Pedestrian Plan. Eliminating curb cuts along SR 1, improving parking efficiencies, reducing vehicle miles traveled for local trips, and locating new buildings closer to SR 1 effectively calmed traffic. This created a more comfortable and enjoyable pedestrian and bicycle experience.

Additional parks located within Town ensured that one is always located within a reasonable walking distance. The existing Town Park was expanded to include additional amenities. Town Hall was also expanded in its current location to include additional space for staff and community purposes. The details of these community facilities will be determined during the Comprehensive Plan's implementation.

The DART stops remained in their existing locations near Essex Street but were improved to include seating and shelter. Shuttles from several inland developments continue to stop at the State Park facilities north and south of Town. Traffic and parking improvements have been made to ease previous design and operational issues.

BUILT ENVIRONMENT | The compact and clearly identifiable traditional form of Town was maintained. The street grid and system of blocks and lots was a valuable asset that was reinforced in the preferred plan. Some development patterns that comprised this pattern, such as combined lots, and other improvements, such as widening of streets over time, were mitigated. The role of SR 1 was changed from a barrier between the east and west portions of Town to an important civic space with a boulevard design.

Residential design guidelines affected the design of new homes to help them fit into the Town's traditional form and reinforce the block and lot rhythm. This historic pattern of cottages located a consistent distance from the street was re-established. The size and height of homes continued to be regulated but with more detail to encourage creative and diverse designs. Site improvements and landscapes were also influenced by the design guidelines. Pervious materials were still encouraged, as well as other sustainable or green practices, such as minimizing the use of exterior lighting, irrigation, fertilizers, and pesticides.

The character of the commercial area was greatly improved by the pedestrian plan. A sustainable and diverse mix of commercial uses existed and was supported by Town residents and visitors. Additional retail businesses were added to the mix, improving the entertainment and shopping opportunities. As more property owners became full-time residents, more businesses tended to stay open year-round. Incentives and physical improvements resulted from the overlay district and the pedestrian plan encouraged property owners to reinvest in their properties.

REDEVELOPMENT | Commercial properties were redeveloped over time. As properties aged and owners considered redevelopment, the district offered an alternative to the current highest and best use of single-family detached homes. The district combined solutions to traffic, parking, and aesthetic concerns with incentives for commercial or mixed-use redevelopment. The redevelopment of older beach cottages was mitigated through new historic and cultural resource preservation measures and residential design guidelines. Incentives were created to preserve the cottages as part of residential developments. The design of new residences was also influenced to minimize their bulk and mass, along with other considerations.

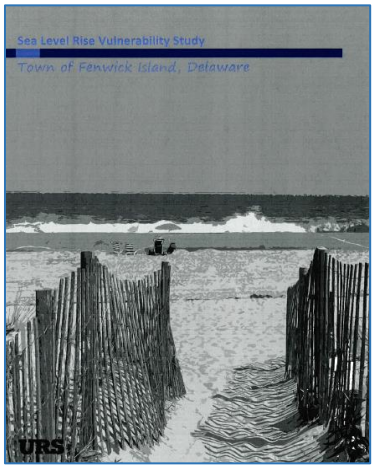
NATURAL ENVIRONMENT | The Town's most important assets – its beach and Bay – were preserved and enhanced through the community's leadership. Fenwick Island emerged as the leading environmental steward among the State's coastal communities. Beach replenishment continued as needed by using methods that were even more environmentally sensitive. The Tree Triage Program was fully implemented with street tree and other plantings installed throughout Town. On the Bay side, the additional vegetation cleansed stormwater before it reached the Bay. On the Ocean side, the additional vegetation created important wildlife habitat. Other new sustainable or "green" practices initiated by the Town gained wide acceptance by residents, visitors, businesses, and contractors. The community's actions created a model for establishing a green infrastructure network.

UTILITIES – POTABLE WATER | Potable water in Fenwick Island is provided either by the Artesian Water Company or by a few remaining private wells. Artesian Water Company currently operates a 16- inch HDPE main on the eastern shoulder of SR 1 from the northern town boundary south to Maryland Avenue where the main is routed west. The water main was installed with 36 inches of cover. Side streets and properties west of SR 1 are fed by 8-inch mains on the cross streets. A water main has also been installed west of SR 1 between James Street and Lewes Street. Artesian Water Company has the capacity to supply water for two-hour fire protection for the Town at its buildout. Water supply can be provided at 1500 gallons per minute for commercial properties and 500 gallons per minute for residential properties. Capacity also exists to serve densities higher than what exists currently in Town. Artesian Water Company can also serve all properties along and accessed by SR 54 under the County's current zoning and future land use plan. For redundancy, an emergency backup agreement exists with the Town of Bethany Beach. *Source: Artesian Water Company - 2007*

UTILITIES – WASTEWATER | Wastewater service for the Town of Fenwick Island, unincorporated Fenwick Island and the areas adjacent to SR 54 is provided by Sussex County under the Unified Sussex County Sewer District. The County's South Coastal Regional Wastewater Facility provides treatment services for the greater Fenwick Island area. The facility is permitted to handle a capacity of 9 million gallons per day. Regional sewer demand in the summer of 2017 reached a weekend peak flow of

almost 7 million gallons per day at the Facility with weather related demand reaching permit capacity. While the wastewater facility has adequate capacity for projected growth the County is currently undertaking an upgrade project to better deal with seasonal as well as weather related demand fluctuations. The sanitary sewer is conveyed by 8-inch mains on the side streets and 12-inch gravity interceptors along both sides of the right-of-way for most of SR 1. The gravity lines start at the Maryland line to the south and Lewes Street to the north, both flowing to a pump station located on Cannon Street. Flows from outside the town limits enter the system via 6-inch and 2.5-inch force mains along the northern limit of Town. Depths vary from about four feet at the terminal ends to 10-15 feet at Cannon Street. From Cannon Street, a 10-inch PVC force main conveys wastewater along the west side of SR 1 to Maryland Avenue. The County is closely monitoring collection capacity and has addressed two bottlenecks. Along SR 54 corridor, the County has identified transmission issues associated with a pump station and force main at the Ditch crossing and initiated corrective action slated for construction in 2018.

SEA LEVEL RISE VULNERABILITY STUDY 2015

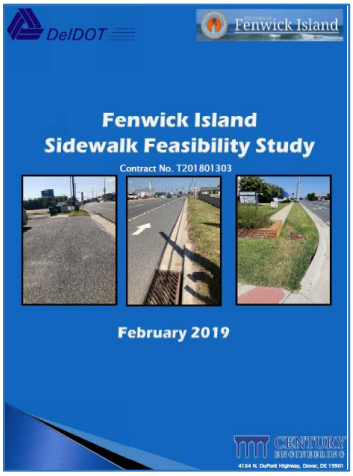


In 2015, the Town completed a sea level rise vulnerability study. This project through Delaware's Coastal Management Assistance Grant program in early 2014. Receiving funds from the DNREC Coastal Management Assistance Grant to complete a Sea Level Rise Vulnerability Study was the Town's first step in their resiliency planning. The overall goal of the Study was for the Town to better understand risks they may face in the future as sea level continues to rise and major coastal storms increase, as well as introduce possible solutions to mitigate those risks. That goal can be further broken down into three more specific goals. First, the Town wanted to document the extent of all possible sea level rise effects, which included impacts to structures, roads and utilities. Second, raising awareness among the residents and business owners was important so everyone can be cognizant of general information about sea level rise as well as the Town's specific vulnerabilities. Lastly, the Town wanted to research a number of possible mitigation tools and identify the best solutions that can be used to protect the residents, the built environment and nature. Three maps were created showing separate inundation scenarios at varying sea level rise increments. These are all potential conditions projected for the year 2100 based on the DNREC recommended estimates of rise in sea level; a description of each scenario appears below. The Study further recommended the following strategies:

- Develop intergovernmental coordination, County, State, Federal and local municipal governments
- Enforce Flood Damage Reduction Ordinance and adopt a freeboard standard
- Coordinate the building code and Town code with the Flood Damage Reduction Ordinance
- Require planning for elevation and drainage improvements of certain roads to anticipate more frequent flooding
- Raise streets and bulkheads
- Create living shoreline or conservation easements
- Encourage salt-tolerant rain gardens
- Designate high ground for non-emergency car parking
- Disaster Recovery Plan
- Public communication and outreach

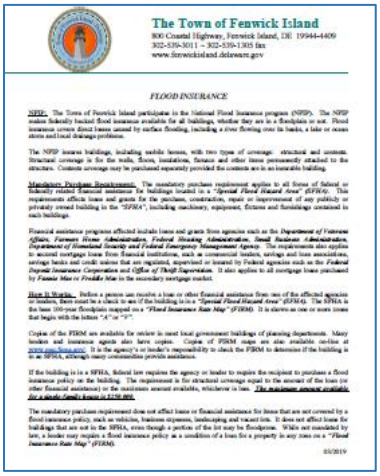
The complete study and associated maps can be found on the Town's website or by contacting Town Hall.

FENWICK ISLAND PEDESTRIAN PLAN



In the fall of 2018, the Town of Fenwick Island agreed to assist in funding ($14,000) a DelDOT Feasibility Study for State Route 1. DelDOT initiated a new study to determine the feasibility of formalizing a continuous traveling environment for all users in Fenwick Island along SR1, Coastal Highway, between Lighthouse Road and Bethany Fenwick Area Chamber of Commerce. The intent of the study was to determine if sidewalk facilities can be added or improved in a cost-conscious manner. Two previous studies prepared for the Town by other consultants provided solutions that were too costly to secure funding for design and construction. The study concluded that sidewalks along SR1 are feasible with relatively minor impacts to most properties. The Town sought funding for a five block portion of the project. They were awarded $250,000 in the 2020 State Bond Bill. Design plans are currently being completed.

NATIONAL FLOOD INSURANCE PROGRAM (NFIP)



The Town of Fenwick Island
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FLOOD INSURANCE

NFIP. The Town of Fenwick Island participates in the National Flood Insurance program (NFIP). The NFIP makes federally backed flood insurance available for all buildings, whether they are in a floodplain or not. Flood insurance covers direct losses caused by surface flooding, including a river flowing over its banks, a lake or ocean storm and local drainage problems.

The NFIP insures buildings, including mobile homes, with two types of coverage: structural and contents. Structural coverage is for the walls, floors, foundation, furnaces and other items permanently attached to the structure. Contents coverage may be purchased separately provided the contents are in an insurable building.

Mandatory Purchase Requirement. The mandatory purchase requirement applies to all forms of federal or federally related financial assistance for buildings located in a "*Special Flood Hazard Area*" (*SFHA*). This requirements affects loans and grants for the purchase, construction, repair or improvement of any publicly or privately owned building in the "*SFHA*", including machinery, equipment, fixtures and furnishings contained in such buildings.

Financial assistance programs affected include loans and grants from agencies such as the *Department of Veterans Affairs, Farmers Home Administration, Federal Housing Administration, Small Business Administration, Department of Homeland Security and Federal Emergency Management Agency*. The requirements also applies to secured mortgage loans from financial institutions, such as commercial lenders, savings and loan associations, savings banks and credit unions that are regulated, supervised or insured by Federal agencies such as the *Federal Deposit Insurance Corporation* and *Office of Thrift Supervision*. It also applies to all mortgage loans purchased by *Fannie Mae* or *Freddie Mac* in the secondary mortgage market.

How It Works. Before a person can receive a loan or other financial assistance from one of the affected agencies or lenders, there must be a check to see if the building is in a "*Special Flood Hazard Area*" (*SFHA*). The SFHA is the base 100-year floodplain mapped on a "*Flood Insurance Rate Map*" (*FIRM*). It is shown as one or more zones that begin with the letters "A" or "V".

Copies of the FIRM are available for review in most local government buildings of planning departments. Many lenders and insurance agents also have copies. Copies of FIRM maps are also available on-line at www.msc.fema.gov. It is the agency's or lender's responsibility to check the FIRM to determine if the building is in an SFHA, although many communities provide assistance.

If the building is in a SFHA, federal law requires the agency or lender to require the recipient to purchase a flood insurance policy on the building. The requirement is for structural coverage equal to the amount of the loan (or other financial assistance) or the maximum amount available, whichever is less. *The maximum amount available for a single-family home is $250,000.*

The mandatory purchase requirement does not affect loans or financial assistance for items that are not covered by a flood insurance policy, such as vehicles, business etcpenses, landscaping and vacant lots. It does not affect loans for buildings that are not in the SFHA, even though a portion of the lot may be floodprone. While not mandated by law, a lender may require a flood insurance policy as a condition of a loan for a property in any zone on a "*Flood Insurance Rate Map*" (*FIRM*).

03/2019

The Town of Fenwick Island has participated in the NFIP by adopting and enforcing floodplain management ordinances and construction standards to reduce future flood damage. In exchange, the NFIP makes federally-backed flood insurance available to homeowners, renters, and business owners in the community. Flood insurance is designed to provide an alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods. Buildings constructed in compliance with NFIP building standards suffer approximately 80% less damage annually than those not built in compliance. The NFIP also provides Flood Insurance Rate Maps (FIRMs) for the Town that depict the location of flood hazard zones, provide data needed for floodplain management programs, and provide a basis to actuarially rate new construction for flood insurance.

TOWN INITIATIVES

Several ongoing initiatives and events are held throughout the Community of Fenwick Island. The majority of the initiatives are led by the Town; however, several programs and events are organized by the volunteers in the Community along with several local partners. This level of local participation and initiatives clearly demonstrate the ongoing care and concern for the Town and Community.

ADOPT-A-HIGHWAY PROGRAM

Since 1990, DelDOT's Adopt-A-Highway (AAH) Program developed a partnership between the Department of Transportation and volunteers, working together to make Delaware better, two miles at a time. More than just a cleanup campaign, this innovative program works to educate citizens of all ages about the responsibilities of land stewardship-the care and repair of our environment. Local residents called the "Friends of Fenwick" formed a formal DelDOT Adopt-a-Highway program group. This group collects litter from Coastal Highway (RT1) in the Town of Fenwick Island and north of the town.

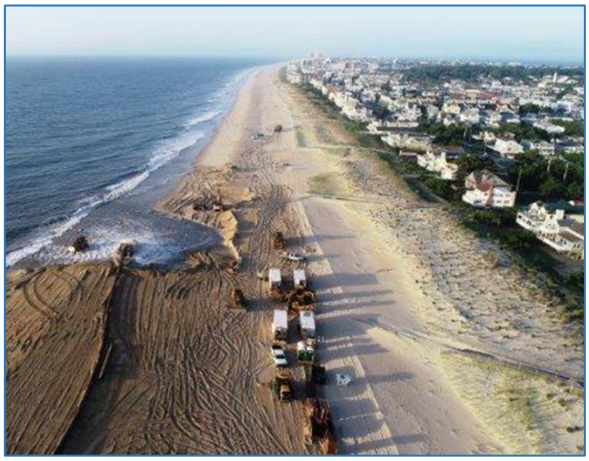
COASTAL CLEAN-UP

The annual coastal cleanup offers volunteers an opportunity to help make a difference in our shoreline. Trash on our beaches isn't just unsightly – it's also potentially dangerous to marine life and harmful to water quality. Listed below are the collection results from the Fenwick Island volunteers:

- 2011 & 2012 – 699 cigarette butts and 125 cigar tips
- 2013 – 1,675 butts from the cigarette receptacles at the beach entrances and in the parks
- 2014 – 1,557 cigarette butts
- 2015 & 2016 information not available
- 2017 135 cigarette butts
- 2018 – 163 cigarette butts and 44 cigar butts
- 2019 – The Barefoot Gardeners assisted with eleven volunteers and collected of 15.5 pounds of debris. The main items collected were - bottle caps (74), plastics (like bottles, string, bags, rope pieces, balloon pieces and wrappers) 22, straws 10, cigarette butts 12 and 2 personal hygiene items including a condom. Other misc. clothing, board signage, and sunglasses pieces. Additional Fenwick volunteers also collected 220 cigarette butts and 28 cigar butts in addition to the Barefoot Gardeners.

BEACH REPLENISHMENT

Beach replenishment helps keep the coastline accessible and accommodating for residents as well as visitors. Building up our dunes and beaches helps prepare for extreme weather events and helps protect homes and businesses from storms. The Town participated in the U.S. Army Corps of Engineers (USACE) project in 2011. Beach replenishment efforts took place after the damage to the Fenwick Beaches from Hurricane Sandy.



BEACH ACCESSIBILIITY IMPROVEMENTS

The Town installs Mobi-mats® for beach access over all the dunes at all of the beach ends (twelve in total) located within the Town's corporate limits. Mobility mats are purchased through using realty transfer tax reserves. They are systematically replaced on an annual basis. These mats make the beach accessible to everyone and the lifeguards provide transport services over the dunes to individuals with disabilities.

BEACH GRASS PLANTING PROGRAM

Every spring since 1990, many dedicated volunteers have stabilized Delaware's sand dunes by planting more than 5 million stems of Cape American beach grass on Delaware's Ocean and Delaware Bay beaches. Sand dunes provide protection against damaging coastal storms by absorbing wave energy. Sand dunes offer protection by acting as major sand storage areas which replenish sand to eroded beaches during storm events. Without sand dunes, storm waves rush inland and flood properties.

Beach grass helps build and stabilize dunes. Blades of grass help trap windblown sand which can create new dunes and expand existing dunes. DNREC organizes the statewide annual beach grass planting program throughout the State in different locations. The desired dune grass planting timeframe is between October and March for the optimal survival duration. Their efforts have been very successful in helping reestablish the vegetation along the coastline and help stabilize existing dunes. The Town has participated in this State program for multiple years.

DELAWARE HEALTH COALITION AWARD

On May 20, 2014, the Town of Fenwick Island was one of five towns to receive the 2014 Governor's Healthy Community Award. According to the Delaware Coalition on Health for Healthy Eating and Active Living (DE HEAL), the Governor's Council on Health Promotion and Disease Prevention and DE HEAL recognized the cities of Dover, Newark and Seaford and the towns of Fenwick Island and Smyrna.

Municipal applications were scored based on self-reported assessments of efforts to enhance access to services, encourage positive behavioral changes and improve community health. Healthy efforts demonstrate effective planning and implementing best practices and/or creative and visionary programs to improve physical activity, nutrition/healthy eating, tobacco-free lifestyles, healthy environments and healthy lifestyles and to integrate the needs of individuals with limited mobility and disabilities in neighborhoods, schools and workplaces. The Town of Fenwick Island received Special Recognition for a Small Municipality based on the following actions:

- Before the 2013 summer season, Fenwick Island passed a no-smoking ordinance for its two parks and its one-mile public beach, which allows activities including swimming, body surfing, running, flying kites, and playing volleyball.
- The Environmental Committee meets every other month to discuss environmental policies that promote healthy lifestyles and reduce pollution.
- The Ad Hoc Parks Committee planned Cannon Street Park and secured the park grant for its development, which includes a basketball court and a kayak launch that is compliant with the Americans with Disabilities Act (ADA).
- As well as providing beach accessibility, the town approved the allocation of over $100,000 for ADA beach mats, called Mobimats, on every dune crossing. Walkability is an important town feature. The Town's Comprehensive Plan, Code and municipal ordinances encourage interconnectivity. The plan recommends the installation of sidewalks along Route 1 to increase pedestrian safety. A 2002 Pedestrian Plan assists the town and DelDOT to identify feasible Route 1 crossing solutions for pedestrians and bicyclists. The town is studying the feasibility of requiring commercial property owners to install sidewalks for new construction and major renovation projects.
- Additionally, town officials adopted a Parks Zone designed for parks and recreation.
- Local vendors sponsor tours and lessons for a variety of water sports, such as surfing, kayaking and paddle boarding. The Fenwick Island Fishing Club sponsors fishing expeditions for adults and children. Children can register for basic or advanced junior lifeguarding, sponsored by the Fenwick Island Beach Patrol. At a Bike Safety Day, the Sussex Cyclists, the Fenwick Island Police Department, town staff and community volunteers distributed bike helmets, lights and safety literature. Another volunteer-run activity is the Fenwick Island Turkey Trot, held every Thanksgiving morning.
- Mobi-mats® make the beach accessible to everyone and the lifeguards provide transport services over the dunes to individuals with disabilities.
- The town sponsors three Fenwick Flicks, which are movie nights on the beach, with the Bethany-Fenwick Chamber of Commerce, where tobacco-free information is given to movie-goers. Additionally, a Farmers Market along Route 1 is open during the summer season.

EARTH DAY CLEAN UP

Since 2016, the Town hosted an Earth Day Clean-Up event where volunteers clean the streets throughout the Town to improve the environment. The event is organized by the Environmental Committee and includes environmentally focused exhibits with educational information from a variety of organizations, government agencies as well as support from the local business community and event partners.

FLOATING WETLANDS

In 2015 the Town was awarded funding through the Department of Natural Resources and Environmental Control (DNREC) Surface Water Matching Planning Grant for drainage improvements and water quality design for West Dagsboro Street. The project included floating wetlands into the design, anchored to the existing stone revetment. The benefits of the floating wetlands are improving water quality, removing excess nutrients, reducing the occurrence of low dissolved oxygen and providing habitat for plants and animals within the canals as well as Little Assawoman Bay. Three economy floating wetlands were installed under this project.

HURRICANE AND STORM DAMAGE REDUCTION PROJECTS

The U.S. Army Corps of Engineers (USACE) Philadelphia District manages the Hurricane and Storm Damage Reduction Projects for Bethany Beach, South Bethany and Fenwick Island. The funding is provided through the Flood Control and Coastal Emergencies (FCCE) program, which enables USACE to repair project damaged by severe storm events at 100 percent Federal cost. These beaches and dunes were damaged by strong storms, including a Nor'easter in October of 2015 and Winter Storm Joaquin in January of 2016. This involved dredging and beach replenishment operations that were contracted the fall of 2017. The project involved dredging 1.2 million cubic yards of sand from approved offshore borrow areas. The sand was pumped through a series of pipes onto the beaches and then graded into a dune and berm template designed to reduce potential damages to infrastructure, businesses and homes. Fenwick Island design included 200 feet backed by dune at elevation 17.1. The project was delayed and construction was completed in August 2018. The Fenwick Island project was first constructed in 2005. The design template included a 200- foot berm backed by a dune at elevation 17.7 feet (North American Vertical Datum). The project in 2018 involved pumping 278,000 cubic yards of sand onto Fenwick Island. The work also included the construction or repair of pedestrian and ADA crossovers

OYSTER GARDENING PROGRAM

The Delaware Center for the Inland Bays promoted the participation of waterfront property owners in its Oyster Gardening Program. Participants volunteer to help raise and maintain juvenile oysters in cages hung from their docks or bulkheads. The goal of the Oyster Gardening Program is to improve water quality and to help restore a sustainable population of native oysters in the Inland Bays. The Center provides the oyster spat, all required gear, and training. Center staff collect the oysters from participants when they reach "seed" size after six months to a year, and they are then used in restoration projects such as living shorelines throughout the Inland Bays. The Oyster Gardening oysters are not grown for food and are not suitable for human consumption.

During the 2009 season more than 40 bushels (12,000) oysters were transplanted – (estimated to sequester the annual nitrogen output of about 5 individuals) in rip rap at 4 locations in the estuary. Controlled plantings were also established at each site to evaluate the methods being used and to estimate survival. Also during the 2009 season natural oyster recruitment (spatfall) attributed to spawning of adult oysters maintained at gardening sites in Fenwick Island residential lagoons was first observed. As of 2014 season, approximately

200 bushels of oysters (50,000) have been transplanted to Inland Bay locations to provide previously described ecological services and to serve as spawning stock in an effort to further promote increased natural recruitment.

The Delaware Center for the Inland Bays has finished building the first artificial oyster reef in the state. The reef is in Little Assawoman Bay near Fenwick Island. It's about 10x40 feet, is built out of used oyster shells and is seeded with oysters raised by the Center's volunteer oyster gardeners. It's the first of three planned pilot reefs in Delaware, representing the first stage of a larger plan to increase shellfish life in state waterways. The water monitoring project, ran by the state and the University of Delaware is also documenting changes to water quality over time to track the oysters' effect. They will further monitor the pilot reef over the next couple of years to be sure the oysters are successful.

PET WASTE DISPOSAL

Led by the Town Environmental Committee, this initiative focused on proper pick-up and disposal of pet waste in the Community. Pet waste carries disease causing organisms such as Giardia and Salmonella which can make water unsafe for drinking or swimming; to protect the public from illness, swimming beaches and shellfish beds can be shut down due to bacterial contamination, and pet waste can be a cause of that contamination. It was found that dogs are a significant contributor of bacteria in surface waters leading to the Little Assawoman Bay. As a result of this initiative, educational outreach materials were distributed and six dog waste disposal stations were installed at the following locations: Atlantic Street Beach-End, Bunting Avenue between Dagsboro Street & Essex Street, Bunting Avenue between Houston Street & Indian Street, Bunting Avenue and King Street (corner), Dagsboro Street – near Schulz Road, and Georgetown Street – near Bora Bora Street.

RECYCLING PROGRAM

The Town provides the recycling pick-up program service through a private contractor. This curbside service is currently provided every other week during the months of October – April and weekly during the months of May - September. The following item are eligible for recycling: newspaper, brown paper bags, magazines/catalogs, telephone & soft cover books, junk mail/envelopes, paper, paperboard (cereal/tissue boxes), cardboard, glass bottles/jars, metal cans, #1 PET plastic containers, #2 HDPE plastic containers, #4 LDPE plastic containers, #5 polypropylene containers, and #7 mixed plastic containers.

TOBACCO-FREE BEACHES AND PARKS

On January 25, 2013, the Town modified the Code of Fenwick Island, Chapter 116-Peace and Good Order adopting legislation that banned smoking in the Town parks and beach effective March 1, 2013. The non-smoking policy initiative revealed that it takes an average of 25 years for a cigarette to decompose. Educational Outreach materials were created working under the State of Delaware's with Delaware Division of Public Health's Tobacco Prevention Community Contract. Grant funding for the contract was provided by the Delaware Health Fund and managed by the American Lung Association in Delaware. As part of this funded initiative, cigarette receptacles were installed at the dune crossings.

STORMWATER IMPROVEMENTS

Improvements are made in an attempt to reduce the discharge of pollutants and sediment in surface and storm water runoff as well as to control erosion of the banks and waterways. Installation of grass, vegetation, stone, and drainage pipes help prevent any soil erosion.

Several initiatives have taken place regarding improvements to water quality and stormwater, listed below are some of those projects:

- SWMPG 13-05 Stormwater Infrastructure inventory: $3,000
  - Completed an inventory of the Town's stormwater infrastructure and open watercourse drainage system. The inventory consisted of the mapping of all storm drain systems within the Town Limits, including inlets, manholes, culverts, and open channel systems. These features were located utilizing Global Positioning System (GPS). The information, which was obtained from the GPS survey, was then translated into a Geographic Information System (GIS) inventory map which displays all existing drainage features within the Town. The GIS map became the basis for which detailed hydrologic studies can be performed which identify issues such as drainage deficiencies associated with undersized storm drains, inadequate open channel conveyance and possible water quality issues. The inventory serves as the basis from which all other corrective measures or possible stormwater enhancements are derived and will serve as an effective tool for long term capital planning.

- SWMPG 14 Dagsboro Street Drainage Improvements: $6.500
  - Phase I of two phase project to improve drainage issues and water quality on Dagsboro street. Storm drains were reconfigured to enhance drainage and provide a point of drainage relief for the north side of Dagsboro Street. Additionally, french drains were installed to promote infiltration and floating wetlands were installed in the canal.

- SWMPG 15-05 Dagsboro Street Drainage Improvements Phase II : $6,500
  - Phase II of a two phase project to improve drainage issues and water quality on Dagsboro street. This phase of the project raised the centerline of Dagsboro Street in conjunction with super elevating a section of the road to enhance sheet flow across the pavement section to vegetative filter strips installed in the previous phase.

- SWMPG 16-07 Multiple Street Drainage Improvements $15,000
  - West Indian, West Farmington and Delaware Avenue at Island
  - Created drainage relief design/plans and provided appropriate Best Management Practices (BMP) design elements necessary to improve water quality at various locations with the Town. Additional scope included field run topographic survey and subsurface storm drain assessment (video).

- SWMPG 17-08 Bayard, Bayard St. Extended Drainage Improvements: $6,500
    - Stormwater retrofit associated with drainage issues occurring along Bayard Street and Bayard Street Extension. Proposed project includes the installation of infiltration trenches along the north side of Bayard Street and Bayard Street Extension to an outfall in the canal. In addition, the storm drain outfall area near the head of the canal was evaluated to determine what improvements can be developed to improve the function of the outfall. Additional scope included field run topographic survey.

- SWMPG 18-06 Maryland Ave Drainage Improvements:
    - This grant was not completed. DelDOT took lead on creating a solution to the drainage issue.
    - Goal was to provide water quality treatment and nutrient reduction, as well as correct existing drainage issues by way of installation of multiple rain gardens and associated storm drain improvements along Delaware and Maryland Avenues, as well as a large rain garden behind Fenwick Center. Additional scope included field run topographic survey.

The Town has also installed rain gardens within the Town Hall parking lot and is planning several others to help cleanse parking lot and street runoff before drainage reaches the Town's canals and Bay.

TREE CITY USA COMMUNITY DESIGNATION

The Tree City USA program is sponsored by the Arbor Day Foundation in cooperation with the U.S. Forest Service and the National Association of State Foresters. They provide direction, technical assistance, public attention, and national recognition for urban and community forestry programs in thousands of towns and cities that more than 135 million Americans call home. To qualify as a Tree City USA community, a town or city must meet four standards established by The Arbor Day Foundation and the National Association of State Foresters. These standards were established to ensure that every qualifying community would have a viable tree management plan and program. The Town has received Delaware Forestry Grants for tree plantings, which include a match to the funds. The State of Delaware has 17 designated Tree City USA Communities, all of which received recertification in 2018. Sussex County has seven designation Communities and the Town of Fenwick Island has maintained the designation for thirteen years.

TREE TRIAGE PROGRAM

The Environmental Committee led the initiative to eradicate the Pine Wilt Disease in the black pine trees. Working with a representative from State of Delaware's Department of Agriculture Forest Service, it was determined that several dead and dying trees have evidence of Pine Wilt disease (pine wood nematode) and Ambrosia Beetles, a problematic disease in non-native pine trees. Pine Wilt is a dramatic disease as it usually kills the affected trees within a few weeks to a few months, and spreads from tree-to-tree in the Spring and Summer months.

Unfortunately, there is no treatment or insecticide that will stop the progression of the disease. The infected tree seldom survives more than a year and removal is the only method of preventing a spread throughout the town. Educational information was provided and highlighted in the winter and spring editions of the Town's newsletter for the Community. Notification letters were sent to property owners asking for assistance to removal the black pine trees with Pine Wilt Disease.

YARD WASTE PROGRAM

The Town's seasonal yard waste pick-up program is serviced by a private contractor and is provided monthly starting in April and ending in December of each year. Disposal of yard waste is strictly controlled and defined as plant material that comes from lawn maintenance and other gardening and landscaping activities including: grass, leaves, prunings, brush, shrubs, garden materials, and tree limbs up to 2" in diameter.

5 REGULATIONS

Listed below are applicable regulations from a variety of jurisdictional levels:

FEDERAL REGULATIONS

CLEAN AIR ACT

The Clean Air Act Amendments of 1990 give the EPA the authority to set national ambient air quality standards to protect people's health and the environment from air pollutants. Air pollution can come from stationary sources (e.g., factories, power plants, smelters) or from mobile sources (e.g., cars, buses, planes, trucks, trains).

Most provisions of the Clean Air Act Amendments will not affect smaller communities; however, the Act does contain requirements that pertain to small businesses, including the following:

- Lowering emissions from small industrial and service companies that contribute to ground-level ozone pollution (smog);
- Sharply curbing emissions of 188 toxic air pollutants from hundreds of industries;
- Preventing or minimizing the risks from the accidental release of very hazardous chemicals into the air;
- Recycling and eliminating the production and use of products and substances that destroy the upper ozone layer;
- Requiring many sources affected by the Act to have a permit listing their air pollution control methods.

Some typical small businesses or area sources that may be affected by one or more of the air pollution control programs under the 1990 Clean Air Act Amendments include auto body shops, bakeries, dry cleaners, gasoline service stations, and lawnmower repair shops, among others.

Regulations implementing the Clean Air Act Amendments can be found in the Code of Federal Regulations, Title 40, Parts 1-99.

INDOOR RADON ABATEMENT ACT

Radon is a radioactive gas that comes from the natural breakdown (radioactive decay) or uranium in soil, rocks, and water. The U.S. Surgeon General has warned that radon is the second leading cause of lung cancer in the United States today. Radon moves up through the ground and enters homes and other buildings through the basement or foundation. In almost 1 out of every 15 homes in the United States, indoor radon levels are estimated to exceed levels recommended by EPA to protect people's health. In light of this information, Congress enacted the Indoor Radon Abatement Act (IRAA) in 1988, with the goal of reducing indoor radon levels to those found in outside air

Communities may have homes or commercial buildings with indoor radon levels higher than the federal guidelines; however, most radon-related policies are not federal laws. EPA and state and local governments have focused their energies on educating the public about the health risk of radon and encouraging voluntary testing of homes and buildings.

SAFE DRINKING WATER ACT

Congress passed the Safe Drinking Water Act in 1974 to make sure that the drinking water supplied to the public is safe. In 1986, Congress strengthened the Act because of concerns about the growing number of threats to the safety of the nation's drinking water. This Act applies to communities with public water systems with at least 15 service connections or systems that regularly serve at least 25 people. The 1996 Amendments mandated that States develop a Source Water Assessment and Protection Program (SWAPP) to better protect public drinking water. More information on Delaware's program can be found under State Regulations.

The Safe Drinking Water Act also applies to privately-owned public water systems such as mobile home parks, water companies, and non-community systems such as factories, schools, and campgrounds with their own water supply. Compliance is the responsibility of the owner/operator of these non-municipal systems, but people often turn to local officials if something is wrong with their water systems.

EPA has established maximum contaminant levels (MCLs) based on estimated health risks that many contaminants might cause. More than 100 substances are regulated by the Safe Drinking Water Act and that list is growing. Most of these substances fall into one of the following categories: coliform bacteria, disinfection byproducts, inorganic chemicals, synthetic and volatile organic chemicals, fluorides, lead and copper, radionuclides, nitrates/nitrites, and asbestos. The Act also requires that all owners or operators of public drinking water systems notify their customers when drinking water standards are violated. The purpose of public notification is to inform customers of any potential adverse health effects and to tell them what steps they can take to minimize their impact.

The regulations implementing the Safe Drinking Water Act can be found in the Code of Federal Regulations, Title 40, Parts 141-143.

PRETREATMENT OF INDUSTRIAL WASTEWATER

Pretreatment of industrial wastewater refers to the steps that industries take to remove pollutants from wastewater before they discharge it into the public sewer system. Pretreatment must remove toxic and hazardous pollutants that could either pass through or interfere with the community treatment plant. The Clean Water Act of 1977 set National Pretreatment Standards to control pollutants that cannot be removed by or might interfere with wastewater treatment processes.

The National Pretreatment Standards specify quantities or concentrations of pollutants that may be discharged to a treatment plant by industrial users. In addition, the National Pretreatment Standards prohibit everyone, including the public, from putting the following pollutants in their wastewater:

- Flammable, corrosive, solid, or viscous pollutants;
- Any pollutant released at a high concentration that can interfere with the sewage collection and treatment process;
- Petroleum oil, non-biodegradable cutting oil, and products of mineral oil origin;
- Pollutants that result in toxic gases or vapors; and
- Any trucked or hauled wastes, except at discharge points designated by the publicly owned treatment works.

The regulations for pretreatment of industrial wastewater are in the Code of Federal Regulations, Title 40, Part 403.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

In response to the nation's growing concern about water pollution, major federal laws were passed in the 1970s that required the restoration and maintenance of clean water for residential, commercial, recreational, and agricultural uses. The 1972 Amendments to the Water Pollution Control Act, which was later amended and renamed the Clean Water Act in 1977, set federal water quality standards and cleanup schedules for meeting pollution control requirements. One way that the goals of these acts are achieved is through NPDES permits, which set limits on the level of pollutants allowed to be discharged. These permits are issued to operators that discharge any pollutant from point sources to "navigable waters" (also known as "waters of the United States"), such as lakes, rivers, streams, wetlands, or oceans.

Under the Clean Water Act, states must determine how each body of navigable water is to be classified. This classification system designates the water body for one or more of the following uses: drinking, fishing, swimming, or deep water ports. The water quality standards used to develop NPDES permits are intended to maintain the designated use or uses of the water body. For example, permits are likely to be less restrictive for a facility that is discharging wastewater into a recreational lake that is designated for fishing and swimming. These same regulations also govern the disposal of septic tank pumpings (septage) for un-sewered communities.

NPDES permits are also required for wastewater treatment plants that discharge into waterways. Most wastewater treatments plants' NPDES permits require that they must (at a minimum) meet secondary treatment standards. Secondary treatment means that the plant must install technologies that go beyond the settling of solids to remove 85% of the conventional pollutants (materials that deplete oxygen from the water) and control acidity.

Every community deals with the issue of wastewater; however, not all communities have to comply with the surface water quality standards established under the Clean Water Act. See State Regulations for information on Delaware's NPDES Permit requirements.

The regulations governing the NPDES permitting process are in the Code of Federal Regulations, Title 40, Parts 122-125.

STATE REGULATIONS

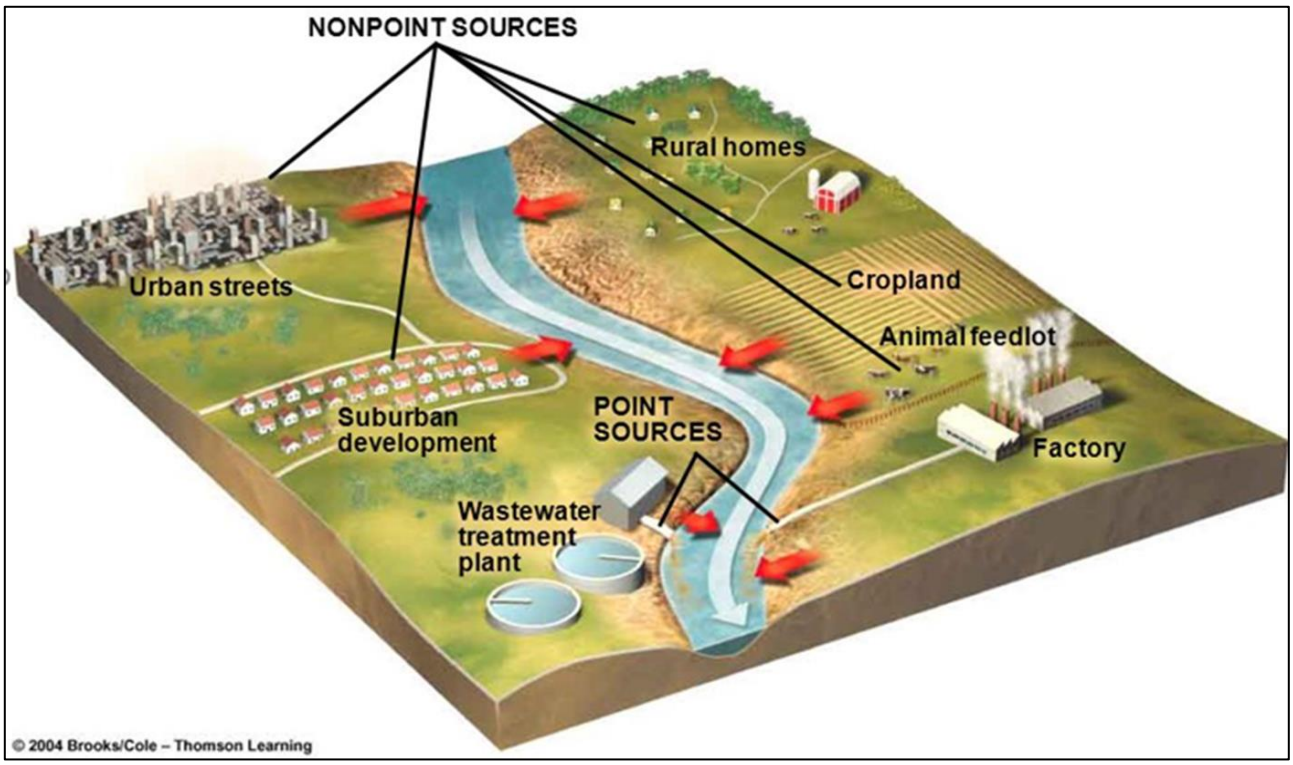
SOURCE WATER PROTECTION

The best way to avoid contamination and expensive cleanup of drinking water is to prevent the water supply from becoming polluted in the first place. The 1986 Amendments to the federal Safe Drinking Water Act asked each state to develop a source water protection program to protect public water supply wells and well fields from contamination. The law specified that all states were to participate; however, there were no penalties for states that didn't participate.

1996 Amendments mandated that the State develop a Source Water Assessment and Protection Program (SWAPP) to better protect public drinking water. This program is administered by DNREC and requires that areas most important to providing public water be delineated, potential sources of contamination identified, and the extent of threat from these sources be determined. While communities of fewer than 2,000 people are not required to implement Sourcewater protection measures, they are strongly encouraged to do so.

MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4)

The National Pollutant Discharge Elimination System (NPDES) regulates point sources that discharge pollutants into the waters of Delaware. It helps ensure that the state's water bodies can meet their designated uses, such as providing drinking water, being safe for swimming or fishing, or supporting aquatic life. A NPDES permit limits the discharge of pollutants to protect the waters that receive them. The health of a water body is measured by its attainment of designated uses. If potential pollutants in a NPDES discharge are reduced to levels that allow receiving waters to meet applicable designated uses then, in effect, the pollutant discharge has been eliminated. Below you will see a diagram prepared by Brooks/Cole form Thompson Learning that shows the nonpoint sources:



Polluted stormwater runoff is commonly transported through municipal separate storm sewer systems (MS4s), and then often discharged, untreated, into local water bodies. A municipal separate storm sewer system (MS4) is a conveyance or system of conveyances that is:

- owned by a State, city, town or other public entity that discharges to waters of the U.S.,
- Designed or used for collecting or convey stormwater (e.g., storm drains, pipes, ditches),
- Not a combined sewer, and
- Not part of a sewage treatment plan or publicly owned treatment works (POTW)

To prevent harmful pollutants from being washed or dumped into MS4s, certain operators are required to obtain NPDES permits and develop stormwater management programs (SWMPs). The SWMP describes the stormwater control practices that will be implemented consistent with permit requirements to minimize the discharge of pollutants from the sewer system. The MS4 Program has six Minimum Control Measures (MCM's):

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge, Detection and Elimination

4. Construction Site Stormwater Runoff Control
5. Post Construction Stormwater Management
6. Pollution Prevention and Good Housekeeping

The national program of MS4 General NPDES Permit was phased-in, over time, with the first phase covering larger municipal governments. The second phase covers smaller communities, in Census-designated Urbanized Areas, and some non-governmental stormwater systems. Current permit types are based on population:

- Phase I, issued in 1990, requires medium and large cities or certain counties with populations of 100,000 or more to obtain NPDES permit coverage for their stormwater discharges.
- Phase II, issued in 1999, requires regulated small MS4s in urbanized areas, as well as small MS4s outside the Urbanized Areas that are designated by the permitting authority, to obtain NPDES permit coverage for their stormwater discharges.

For Delaware, New Castle County/DelDOT currently hold Phase I Permits (with co-permittees Cities of New Castle, Wilmington, Delaware City, and Towns of Bellefonte, Newport, and Elsmere) and the City of Newark/University of Delaware, Town of Middletown, City of Dover, and Kent County DelDOT currently hold Phase II MS4 Permits.

The Phase II Final Rule established under the Clean Water Act required nationwide coverage of all small MS4s located within the boundaries of the Census-defined “Urbanized Areas” (UA) based on the latest decennial Census. The 2010 Census results expanded the UA area within Delaware, requiring DNREC to expand the municipalities requiring NPDES Phase II MS4 coverage to include 14 additional towns.

LOCAL REGULATIONS

ZONING CODE

- In 2016, the Town updated their Zoning Code to allow an increase in maximum roof height in new construction of 18”-24” if the construction includes the implementation of freeboard of 18”-24”

- Ordinance adopted July 2016 making it unlawful for any person to hunt within Town limits

6 LAND USE

The Town contains two primary land uses, residential and commercial. Residential land uses are organized around a commercial strip that fronts State Route 1. Other less prevalent land uses are institutional, office, utility/transportation, parks and open space, and vacant land. A parcel based map (Map No. 3 Existing Land Use) shows the existing land use categories used from the data and mapping found in Chapter 14 of the Town's Comprehensive Plan.

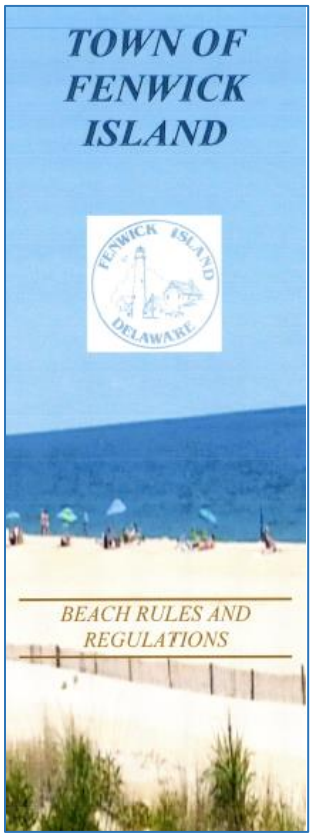
The Town anticipates vacant properties to be redeveloped along Route 1 in the near future as the economy improves. Redevelopment could include a mix of uses such as commercial on the first floor and residential on the second floor. The Town is nearly built out within its existing municipal boundary. The Town has less than 50 vacant lots available for development. Vacant commercial lots, which can also be developed with single-family detached residences, will most likely be developed with a mix of residential and commercial uses.

The Town created an Ad Hoc Commercial District Planning Committee and the first meeting was held on May of 2019. The Committee is working with a consultant to conduct a plan for the design of the commercial district. The draft Commercial District Design Guidelines from July of 2019 include the following goals:

- Safe and friendly environment for pedestrians, families, and kids
- Attractive buildings that respect traditions and are of good quality, well- designed and maintained
- Maintain commercial uses and basic services in the commercial districts
- Improve quality and image of rear yard and services areas

Residential land is Fenwick Island's predominant land use. Most residential uses are located on lots 50 feet wide by 100 feet long, organized into distinct, compact blocks 300 feet wide by 400 feet long. This strong organization of lots and blocks gives Fenwick Island a traditional community form whose resulting street grid makes the town highly walkable.

7 NATURAL RESOURCES



Since settlement began in Fenwick Island, residents and visitors have been attracted to its unique natural amenities. The Town markets itself as "the best beach in Southern Delaware". Unlike Ocean City, MD to the south and Rehoboth Beach to the north, Fenwick is known for its quiet atmosphere, unique location between Little Assawoman Bay and the Atlantic Ocean, and its abundance of recreational opportunities from bird watching and fishing to simply relaxing on the beach. Today, Fenwick Island remains a popular tourist destination, seasonal resident destination, and place of full-time residents.

At the same time, the same resources that draw people to Fenwick Island face enormous pressure and the threat of destruction from human and natural forces. Over time, development activity has filled natural inlets to create developable land, dredged riparian areas to create waterways, reduced beaches to a relatively narrow strip of land, and introduced non-native vegetation that has replaced natural habitats. Natural habitats have also been reduced by bulkheading and bank armoring efforts. These efforts, though required by the Town to protect property from erosion in Bay and riparian areas, have had unintended consequences by eliminating the natural flooding and erosion processes. Despite these conditions, there are ample opportunities to enhance, recreate, and protect the natural amenities that continue to draw people to the Town and support its economy.

In the winter of 2005, a significant beach replenishment project was completed to combat the natural beach erosion. The project included widening the beach, constructing a sizable dune system, and planting grasses to stabilize the dune line. The wider beach acts as a buffer to absorb wave energy during storm events and also provides a reservoir of sand that may be transported to an offshore bar. The offshore bar helps to reduce damage as the first line of defense. In addition to being a vital tourism amenity, the beach and dune network also helps to protect manmade structures during storm events. Pedestrian dune crossings were created at the ends of east-west streets nearest the beach, and roping was installed to protect the remainder of the dunes from destructive foot traffic.

On the Bay side of Town, several vacant, undevelopable lots still exist near the end of Schultz Road and near the end of Bay Street. These areas of land, though small, provide habitat similar to historic habitat patterns that would have been seen along the Bay side of town. Residents have taken efforts to protect these and similar areas and have formed the South Schultz Wetland Association and the Glenn Avenue Bird Sanctuary.

Most of the threats to the Fenwick Island ecosystem and its wildlife are caused by humans. Litter, especially plastic and cigarette butts, not only obstructs the natural beauty of the area, but also is harmful to wildlife. Similarly, curious people, even if well intentioned, can cause serious harm to birds by disturbing nests.

Clean water is essential not only to wildlife and the fragile ecosystems surrounding Fenwick Island, but it is also essential to the Town's residents and to the Towns tourism economy. Unfortunately, the Inland Bays area has suffered from past neglect. DNREC and the Center for the Inland Bays have studied the waters and ecosystems of the Inland Bays area extensively. Both have developed significant research and made the results available to the public to guide future land use decisions. A variety of funding resources and programs are available to encourage positive changes, educate the public, restore damaged resources, and protect undamaged resources for future generations.

As a result of decades of development, very little undisturbed native vegetation currently exists within Town limits. In beach and dune areas, ongoing restoration efforts have utilized native vegetation and beach grasses to restore and support the primary dunes. In areas throughout Town, native vegetation has been planted by home and business owners. Currently, less than 1% of the Town's land surface is covered by tree canopy.

The overall health of the Inland Bays ecosystem is an important issue to the residents of Fenwick Island. The community recognizes that submerged aquatic vegetation is the best living indicator of the nutrient conditions of the Little Assawoman Bay.

Much of the Bay side of Fenwick Island was constructed around a unique series of canals. Running east to west, these canals provide recreational boat access to residences bordering the waterways. The canals are an important part of the Town's character.

Protected lands in Town include the beach area, lands located on Glenn Avenue and Schulz Road, and the wetlands bordering the Bay. In all, these protected areas account for approximately 2% of Fenwick Islands total land area. Just off of the Bay side of Town is Seal Island, which is another unique natural resource area, owned by DNREC.

8 CLIMATE CHANGE & FLOOD RESILIENCY

Fenwick Island is susceptible to two types of storms capable of producing serious damage. These storms are either hurricanes that occur predominantly in the summer and fall months or nor'easters, most often with strong easterly or northeasterly winds, that occur most often throughout the late fall and winter months. In more recent years, the Town has been impacted by hurricanes and severe storms. It was the extensive damage from Hurricane Sandy in 2012 that led the Town to make resiliency planning a priority. The Town has completed a sea level rise vulnerability study that provides a path forward in long-term planning to protect the Town and its residents.

There are a number of natural hazards identified as potential threats for the Town of Fenwick Island including coastal storms, flooding (including bayside), severe thunderstorms, wind, winter storms, drought, extreme heat, erosion, tornadoes, and tsunamis. Some of these hazards are considered standalone events, while others can occur in combination. For example, a coastal storm can cause wind, flooding, and coastal erosion, while flooding is an impact that can be caused by many of the listed storm events. This section will include some of the more critical threats and will be built upon with future updates to the Plan.

COASTAL STORMS – TROPICAL SYSTEMS AND NOR'EASTERS

Coastal storms are the primary, significant hazard seen in the State and they play a major role in shaping the shoreline. Fenwick Island is susceptible to two types of coastal storm systems: tropical systems and nor'easters. Tropical systems, including tropical depressions, tropical storms, and hurricanes, have strong winds circulating around a well-defined center. The season for these storms typically runs from June 1 through November 30. They generally originate in the warm waters of the Atlantic Ocean, Caribbean Sea, or Gulf of Mexico. Nor'easters develop outside of the tropics and typically result from the development of one or more low pressure systems, with winds blowing from the northeast as the storm passes by the coast. Nor'easters are a year-round threat to coastal Delaware and Fenwick Island.

Tropical storms are characterized by sustained winds averaging from 39 mph to 74 mph. When sustained winds intensify to speeds greater than 74 mph, the resulting storm is called a hurricane. The State has never experienced a direct hit by a hurricane since records have been collected, but tropical systems have passed over and near Delaware yearly, usually accompanied by high waves, high tides, and heavy rainfall. The picture to the right is courtesy of the Delaware Public Archives from the Ash Wednesday Storm of 1962 (Fenwick Island location).

While not as powerful in terms of wind speeds as hurricanes, nor'easters occur more frequently in Delaware. Nor'easters usually affect a large portion of the coast and exert significant impacts on beaches, dunes, buildings, and roads over several successive tides as they cover a large area and are typically slow moving storms. They are most damaging when they stall off the coast.

These two storm types share many characteristics and their impacts can be similar. Both types are characterized by strong winds, high waves, and storm surges causing higher storm tides. High winds can blow shingles off roofs and knock down trees and power lines. Large objects can be lifted and blown through the

air, becoming hurling projectiles and causing additional destruction. The effect of accompanying rainfall often includes the overtopping of creeks, streams, and rivers, as well as the flooding of roadways and homes. High waves, tides, and storm surge result in extensive flooding of low-lying coastal areas.

Structural debris that ends up in the turbulent water can act as battering rams, increasing the amount of damage done to buildings, particularly foundations. The storms can also cause extensive beach and dune erosion, resulting in the destruction of dunes, narrowing of the beach, or overwash of the beach and dune system. Sand and water may wash over or break through the dunes and rush over property and streets behind the dune. When this occurs, breaking waves and high velocity currents can cause extensive damage to properties located behind the breached dune system.

Since 2010, the following tropical cyclones have occurred:

- August 27–28, 2011- *Hurricane Irene* brings heavy rain to the state, a high of 10.43 inches (265 mm) is recorded in Ellendale, with a tornado in Lewes causing damage to about 50 homes and destroying one. Two fatalities can be attributed to the storm in the state.
- September 7–10, 2011- The remnants of *Tropical Storm Lee* move over the east coast, resulting in strong winds and heavy rain.
- October 28-November 1, 2011- *Hurricane Rina* did not affect the United States directly, but its remnants joined with a large cold front to fuel the *2011 Halloween nor'easter*.
- September 1–4, 2012- The remnants of *Hurricane Isaac* move over the eastern coast, causing heavy rains over Delaware and other east coast states.
- October 29–30, 2012 - *Hurricane Sandy* affects the entire state of Delaware
- September 19, 2017 - Waves from *Hurricane Jose* cause coastal flooding in Delaware.
- October 11–12, 2018 - Wind and rain from *Tropical Storm Michael* causes minor coastal flooding, heavy rain and some strong winds in the Delmarva Peninsula.

In October of 2012, Hurricane Sandy was known as the event that made sea level rise a top priority. Pictured to the right is a photo courtesy of the Delaware Department of Natural Resources and Environmental Control during Hurricane Sandy that caused overwash and flooding at the north shore of the Indian River Inlet, which resulted in the closure of Route 1 for several days. This is one of the few major roadways to the Town of Fenwick Island and it was inaccessible, even to emergency personnel to assist with the recovery efforts.

The Town of Fenwick saw the most extensive damage compared to any other Delaware coastal town after Hurricane Sandy. Storm waves and elevated water levels destroyed the majority of this low dune structure, carrying sand inland and creating overwash deposits in the bay behind the island in narrow, low-lying places. In the few places along this stretch where a dune existed that exceeded the 2 m high berm, the dune crest remained intact. In October 2011 through February 2012, a renourishment project was completed that

spanned the beaches from Fenwick Island, Del. (DFL = -121 km) north to Lewes Beach just south of Cape Henlopen. Sand was pumped onto face of the beach, increasing beach width, and dunes were constructed. Despite this addition of sand, Delaware beaches from Bethany Beach to just south of Dewey Beach (DFL ~ -100 km) suffered significant dune erosion, volume loss and shoreline retreat. Areas where the created dunes and widened beach system remained intact after the passage of Sandy appear as positive shoreline and volume change. Below are several "Hurricane Sandy" photos in Fenwick Island provided by members of the Environmental Committee and Town staff:

FLOODING

Flooding is the most common and costly natural disaster in the United States. In 2017, Hurricane Harvey resulted in more than 19 trillion gallons of rainfall over the state of Texas and caused flooding that resulted in more than $125 billion dollars in damage. However, there doesn't need to be a large amount of rain for it to flood and cause serious damage. Just one inch of water in a home can cause more than $25,000 in damage.

Fenwick Island is the only town in Delaware that lies entirely within the 1% Chance Special Flood Hazard Area (formerly known as the "100-Year Special Flood Hazard Area"), meaning that any location in Town is subject to a 1% chance of flooding each year. With water bodies on both sides of town, topographic elevations ranging from sea level to about 15 feet, and land that slopes generally less than 1%, the chance of flooding in Fenwick Island is often greater.

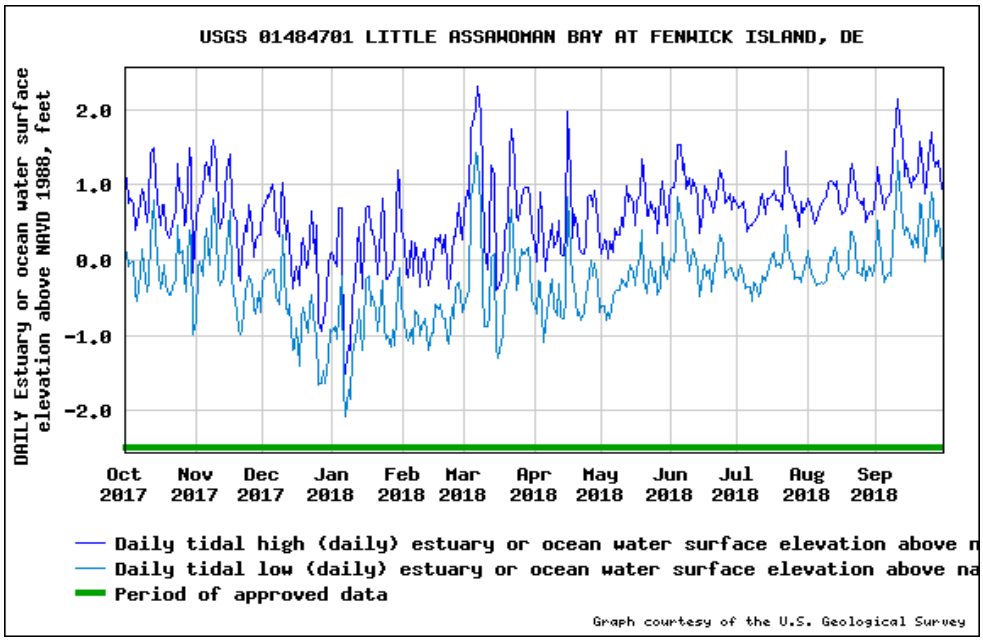
As a participant in the Community Rating System (CRS), The Town of Fenwick Island supports community actions that help reduce flood risks and meet the goals of the CRS to reduce flood losses, facilitate insurance ratings and promote awareness of flood insurance. Such activities have resulted in the Town obtaining a Class 8 "CRS" Rating which entitles qualifying property owners to a 10% discount on their flood insurance premium. As part of the Community Rating System's (CRS) Outreach Project, if a property is located in an area subject to repetitive loss, there are preventive measures a homeowner may take to prevent further flood loss to their property.

In 2017, DNREC's Division of Watershed Stewardship's Shoreline & Waterway Management Section now offers an interactive Flood Planning Tool with up-to-date information for helping to determine flood risk for homes and businesses and for designing development projects in accordance with floodplain codes. The Flood Planning Tool website is designed to provide residents, businesses, floodplain managers, insurance agents, developers, real estate agents, engineers, surveyors and local planners with an effective means to make informed decisions about the degree of flood risk for a specific area or property. Flood Planning Tool users have the ability to look at the current effective Flood Insurance Rate Map (FIRM) layer as well as the preliminary FIRM layer. The preliminary layer shows Delaware areas that will be revised with more detailed information as a result of flood studies that have been conducted. The flood planning tool can be found at this website link: https://maps.dnrec.delaware.gov/FloodPlanning/default.html

U.S. Geological Survey (USGS) operates a satellite data collection platform tidal station located on the bulkhead at the end of Madison Avenue in Fenwick Island and monitors water-year summary reports of hydrologic data. It is identified as Number 01484701 Little Assawoman Bay at Fenwick Island, DE. The recordings begin in October 1999 to present. The Water Years 2014-2018 indicate records were good, but missing data due to equipment malfunction. The Water Year 2013 and prior years' accuracy statements can be found in Annual Water Data Reports. The extremes for period of record indicate:

- Maximum elevation at 4.82 ft, NGVD29 (4.04 ft, NAVD88) on October 29, 2012.
- Minimum elevation at -1.48 ft, NGVD29 (-2.26 ft, NAVD88) on February 17, 2007.

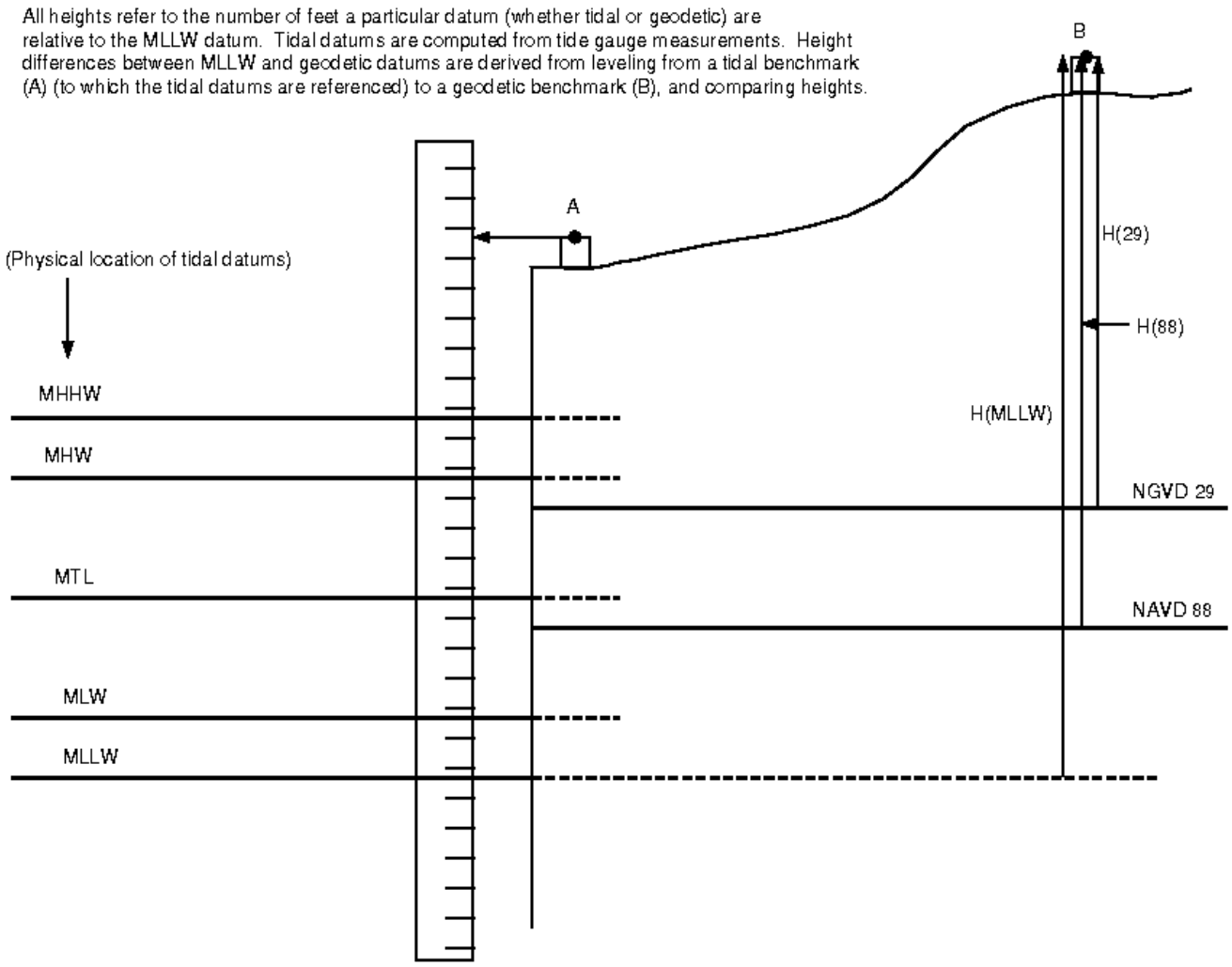
The chart below was obtained from the USGS website showing the ocean water surface elevation above NAVD 1988 feet from October 2017 to September of 2018.



A geodetic datum and reference frame is an abstract coordinate system with a reference surface (such as sea level) that serves to provide known locations to begin surveys and create maps. National Geodetic Survey (NGS) defines the official geodetic datums for all federal mapping activities in the U.S. and its territories as part of the National Spatial Reference System (NSRS). However, NGS will be defining "new datums" to replacing these datums in approximately 2022. Currently, there are only two official datums in the United States and Territories as shown below:

- North American Datum of 1983 (2011/PA11/MA11) epoch 2010.00
    - This geometric datum allows measurement of positions relative to an ellipsoid model of the Earth (latitude, longitude and ellipsoid height).
    - It replaced previous "horizontal datums" that only provided latitude and longitude information.
    -
- North American Vertical Datum of 1988 (NAVD 88)
    - This vertical datum allows measurement of land elevations and water depths

The tidal Information and orthometric elevations of a specific survey control mark can be viewed graphically. This mark can be associated with several tidal stations. Displayed below are the differences between the published National Geodetic Survey's (NGS) NAVD88 and NGVD29 and Center for Operational and Oceanographic Products and Services' (CO-OPS) Mean Lower Low Water (MLLW) datums. Also displayed are the Mean Higher High Water (MHHW), Mean High Water (MHW), Mean Tide Level(MTL), MLLW, and Mean Low Water(MLW) datums. All values are displayed in feet as shown on the diagram below.



SEA LEVEL RISE AND INCREASED COASTAL FLOOD

Worldwide sea level is rising and it has been documented that the rate of sea level rise has accelerated in recent decades. Responding to sea level rise requires careful consideration regarding whether and how particular areas will be protected with structures, elevated above the tides, relocated landward, or left alone and potentially given up to the rising waters.

This rise in ocean levels will affect the natural environment as well as the built environment. Sea level rise is expected to increase floodwater inundation, storm surge, coastal erosion, and other coastal hazards, thus threating vital infrastructure, settlements, and facilities.

Nationally, most current coastal regulations and building codes do not accommodate sea level rise. Floodplain maps, which are used to guide development and building practices in hazardous areas, are generally based upon recent observations of topographic elevation and local mean sea level; however, these maps do not take into account sea level rise or possible increases in storm intensity. As a result, most shore protection structures are designed for current sea level and development policies that rely on setting development back from the coast are designed for current rates of coastal erosion and flood heights, not taking into account sea level rise. The prospect of accelerated sea level rise underscores the need to rigorously assess vulnerability and examine the costs and benefits of taking adaptive actions.

Sea level rise is an important consideration in coastal floodplain management in both vertical and horizontal dimensions. Flood and wave crest elevations along a particular coast will rise commensurate with the rate of relative sea level rise. Floodwater inundation will also reach farther inland as sea level rises. Buildings constructed to be safe from flood levels today will not be safe in the future as sea levels continue to rise; thus, it is important to factor sea level rise into building elevation and site locations for the anticipated life of the building into local coastal floodplain regulations.

The 4th National Climate Assessment reported that global average sea level has risen by about 7-8 inches since 1900, with almost half this rise occurring since 1993 as oceans have warmed and land-based ice has melted. The reported rates of sea level rise are generally worldwide averages; however, sea level is highly variable from area to area. In addition, the worldwide averages consider solely the rise in sea level. Landmasses are also oftentimes rising or subsiding. Together, worldwide sea level rise coupled with the landmass movement constitute 'relative sea level rise'.

9 SUSTAINABLE INFRASTRUCTURE

CULTURAL RESOURCES & RECREATIONAL FACILITIES

CULTURAL RESOURCES

Fenwick Island's older homes, or those built prior to 1968, meet the 50-year-old age criterion set by the National Park Service for consideration for National Register of Historic Places eligibility. Currently, no structure within Town limits is listed on the State or National Registers. One of the Town's goals is to complete an inventory of historic homes and establish a group whose focus is to preserve Fenwick Island's heritage.

RECREATIONAL FACILITIES

Fenwick Island's primary recreational draws are the beach and the bayside water access. There are no commercial recreation activities located in Town and entertainment is limited by regulations. The Town does sponsor live music, but non-Town related live music is allowed only in conjunction with restaurants to help maintain Fenwick's quiet character.

Fenwick Island's Parks & Recreation Committee was originally charged with the task of developing a small community park for gathering and activities. Their efforts can be seen at the Town's park, to the north of Town Hall. Built with State grant money, the park and pavilion are focal points for a variety of Town activities and events including the holiday tree lighting, summer musical events, Memorial Day ceremony, and a children's summer reading program. The park also features a butterfly garden developed by the Barefoot Gardeners Club, a shuffleboard area, children's playground equipment, a basketball court, and a volleyball court. After the Parks & Recreation and Beautification Committees combined in August 2006, the newly formed Beautification, Parks and Recreation Committee purchased new playground equipment for the Town using State grant money and money raised through a brick purchasing fundraiser. The bricks form a walkway within the park.

In 2007, the Town indicated that it had an interest in seeking opportunities to increase its park and open space lands; however, funds were limited for purchasing land at market rates. In 2014, the Town was successful in developing a second park, named Cannon Street Park. This park includes a half-basketball court, picnic area, and an ADA-accessible canoe/kayak launch. The Town continues to make efforts to improve access to both parks and installed five foot sidewalks along SR1 in front of Town Hall for safe access.

TRANSPORTATION

Fenwick Island faces several unique transportation-related challenges that promise to have a strong impact on future Town decisions. Fenwick Island is a popular seasonal destination attracting large numbers of residents and visitors in summer months, taxing a relatively small network of roads and parking areas. It is also experiencing part of the population growth of the coastal Sussex County area, including an increase in overall population and a transition from seasonal to permanent use. Both of these factors increase vehicle miles traveled on the existing road infrastructure system. Similarly, an increase in population also increases pedestrian and bicycle use, consequently raising the demand for pedestrian and bicycle safety among heavy vehicular traffic. In addition, the Town is bisected by SR1. This arterial road connects vehicular traffic not only within Fenwick Island, but also between the northern resort destinations of Rehoboth Beach and Ocean City, MD to the south. Determining appropriate levels of transportation infrastructure is crucial to preserving the Town's character and quality of life, while also providing for multi-modal solutions and strategies for mitigating potential impacts.

ROADS

Fenwick Island is bisected by SR1, also known as Coastal Highway, the primary north-south connector for the region. It extends from the southern Delaware/Maryland boundary north to an interchange with SR 58 adjacent to the Christiana Mall in Newark. With the Town's boundary, streets are arranged in a general grid pattern running east to west and north to south. West of SR1, streets generally run parallel to a series of natural and manmade waterways. Just south of Town, SR 54 or Lighthouse Road intersects with SR 1 and offers a regional connector to the west. In addition to SR1, Fenwick Island has approximately 5.55 miles of improved local streets and 0.4 miles of unimproved streets serving primarily residential areas.

PARKING

Fenwick Island's most recent parking count estimated 295 on-street parking spaces available along public roadways. There are no public parking lots in Town limits and parking is prohibited along the entire length of SR1. The majority of Town streets are restricted to parking on one side only. Property owners are issued three parking permits per household per year. A summer parking permit is required for visitors to park on Town streets between May 15 and September 15 between the hours of 9:00 a.m. and 4:00 p.m. Visitors can purchase permits for daily, weekend, weekly, monthly, and summer rates.

PUBLIC TRANSPORTATION

During the summer season, DelDOT operates the DART bus service through Fenwick Island with a stop near Essex Street. The service runs from Rehoboth Beach to Ocean City, MD. Buses are equipped with bicycle racks and offer free bicycle transportation along their routes to encourage multi-modal transportation. There are no public transportation services providing east-west connections to inland areas.

SIDEWALKS & BIKE PATHS

The Town is potentially very walkable, given its compact form and narrow streets. The pedestrian network along SR1 is not successful despite a dedicated pedestrian and bicycle lane. There are gaps in the sidewalk system, relatively narrow widths that do not accommodate pedestrians walking side-by-side or in passing, utilities and signage located within the sidewalks, and numerous parking lot curb cuts creating dangerous conflicts. To help reduce the number of gaps in the sidewalk system, the Town updated their code requiring all new commercial sites to have sidewalks along SR1. This requirement not only enhances the look of SR1, but also provides safe access to pedestrians.

A study completed by DelDOT identified potential pedestrian improvements within the SR1 right-of-way. The Town implemented median enhancements, which addressed two Town goals – improving pedestrian safety and enhancing the streetscape. New medians provide refuge for pedestrians crossing SR1 and clearly mark the pedestrian zone for vehicles.

Marked pedestrian crossings are limited on side streets and, where crossings currently exist, they are often faded or have been removed due to paving repair. At a limited number of intersections, traffic and pedestrian crossing signals exist, although the timing of the crossing cycle is not always adequate to allow for families or large groups to cross.

SR1 has continuous shoulders approximately 11 feet in width, both of which are marked as bike lanes except for the southbound shoulder from Maryland Avenue to SR 54, which is used exclusively for right turns. The shoulders are also used as vehicle acceleration and deceleration lanes for the Town's many side streets. Conflicts between bicycles and vehicles at these intersections, as well as the numerous curb cuts, create

safety issues. Conflicts between different users such as recreational cyclists, road cyclists, pedestrians, and joggers also exist.

In February of 2019, a Fenwick Island Sidewalk Feasibility Study (DelDOT Contract No. T201801303) was conducted to determine the addition of sidewalk modifications to DR1 between Lighthouse Road and Lewes Street. The Town relayed concern regarding insufficient lighting at night, lack of continuous pedestrian pathway and connectivity, pedestrian safety and growing pedestrian traffic. SR1/Coastal Highway is a principal arterial roadway with a speed limit of 35 mph in both directions. The studies proposed improvements include:

- Continuous 5’ foot wide sidewalks on both sides of the highway
- New ADA compliant connections at intersections
- Connections to parking lots from sidewalks
- Highway lighting on the northbound side of SR1
- Existing access to properties will be maintained

It was further revealed the project will require phasing based on the costs and available funding. The northbound total is $4,994,335 and the southbound total is $4,731,448 according to the study.

10 WASTE GENERATION

What many of us don't realize is that for every pound of waste we produce, 87 pounds of waste have already been generated through the manufacturing of those products. This number was obtained from the Eco-Cycle's "*Zero Waste: The Choice for a Sustainable Community*" 2012 document and can be found in this website link: http://www.ecocycle.org/zerowaste. The average American recycles or composts 34% of their waste; however, in Delaware the recycling and composting rate, often referred to as the "recovery rate" or the "diversion rate" is 58%. This number was further obtained from DSM Environmental Services, Inc. "*Material Recovery Rates, Delaware – FY 2016*". Although recovery rates have steadily increased over the past five years, millions of tons of waste still end up in U.S. landfills and incinerators every year. Increasing the recovery rate to 100% would have a significant positive environmental impact, but it would still not address all the waste generated during the manufacturing process.

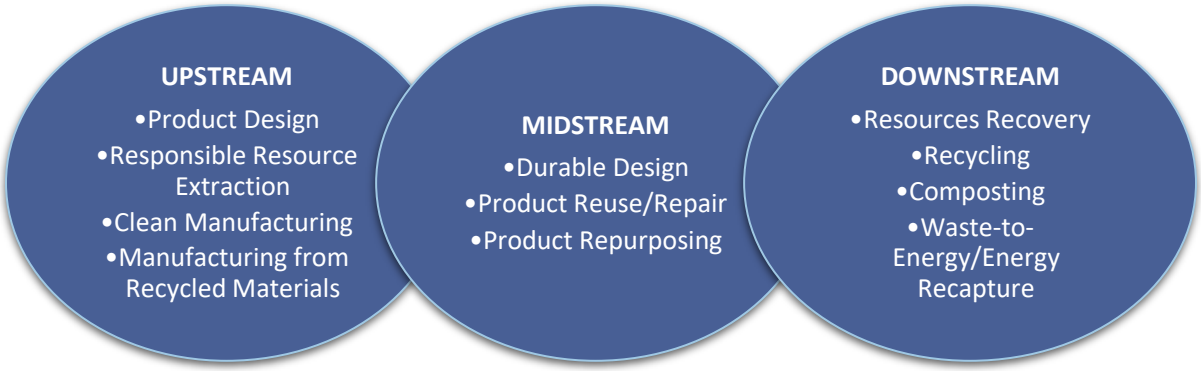
The flow of material in our society is commonly a one-way stream to the dump. Natural resources are extracted from the earth, processed into goods, transported to our communities, consumed, and disposed of in landfills or incinerated into our air. Even before waste is disposed of, we negatively impact ecosystems, extract nonrenewable resources, and contribute to greenhouse gas emissions through the manufacturing and transportation processes. Waste buried in landfills contaminates groundwater and soil and releases potent greenhouse gas emissions, including methane, into the air.

Communities around the country and the world are changing how they think about the flow of materials. Our natural ecosystems provide a healthy and efficient model that functions without creating waste. Outputs from one process, such as decomposing plant matter, provide input for another, such as creating nutrient rich soil for the next crop of plants. Communities are exploring ways to mimic nature's material cycle where used resources are repurposed and given a new life, an approach known as "zero waste". Zero waste shifts the focus from simply managing how we dispose of waste to reducing how much we generate and finding value in our used materials.

Moving toward zero waste calls for partnerships within and between communities, businesses, industries, and government. With extensive collaboration, the complexity of addressing diverse waste streams and the presence of hazardous materials in the goods we use daily can be addressed. The outcomes of zero waste not only reduce negative impacts, but also create economic value through job creation, efficient material use, and industry innovation.

ZERO WASTE APPROACH

The zero waste approach considers the three phases of a product's lifecycle: upstream, midstream, and downstream.



Each phase of the zero waste approach reduces negative health and environmental impacts and adds value to economic and natural systems. Zero waste is an approach, vision, and way of life that can be used to create a vibrant and sustainable future.

UPSTREAM: WASTE REDUCTION AND GREEN PROCUREMENT

The upstream phase addresses resource extraction and production. Producers can play a large role in this stage through responsible manufacturing processes, reducing toxicity in their products, reducing packaging, and redesigning products that can be cycled back into the materials system. Consumers play an equally important role by consuming less and choosing to purchase from responsible producers. Although there are rarely "green" or "not green" items, purchasers can place items on a spectrum of sustainable production in order to compare items and make the more sustainable choice. Many organizations establish purchasing guidelines that align with their waste recovery targets and other sustainability goals.

MIDSTREAM: LONGEVITY AND REUSE

The midstream phase in the zero waste approach addresses how we use our materials. Disposable products are a common and inexpensive choice for many; yet, the true cost is rarely represented on the price tag. The use of natural resources, production, transportation, and disposal are all costs of a single disposable item that is rapidly discarded. Plastic bags are a common example. According to the U.S. Environmental Protection Agency, the average American uses 500 plastic bags a year, using each bag for an average of 12 minutes before it is discarded. Choosing products that can be reused over and over again is an easy and effective way of reducing waste.

As our needs change and we no longer find our products useful, there are several alternatives before disposal. The growing sharing economy encourages people to share resources, reducing waste, saving money, and building relationships. These exchange networks can take many forms and happen in many places, including online neighborhood forums, garage sales, thrift stores, and donation sites. If there still is no demand for a product, there might be an opportunity for repurposing. Artists, entrepreneurs, and thrifty households have demonstrated that tires can be turned into chairs, wooden pallets into playgrounds, and leather airline seats into travel bags. Product reuse processes, such as repairs and reclamation, can create between 25 and 300 more jobs than landfilling and incineration. These numbers were obtained from the Institute for Local Self-Reliance "*Waste to Wealth: Recycling Means Business-February 1, 2002*" and can be found in this website link: http://ilsr.org/recycling-means-business. Sharing and repurposing are midstream waste solutions with benefits far beyond waste recovery goals.

DOWNSTREAM: RESOURCE RECOVERY

The downstream phase includes all resource recovery options. Recycling, composting, and waste-to-energy technologies are all ways to recapture the value of our discarded materials. Each of these processes is dependent on having the proper infrastructure and markets to support the redistribution of materials back into the zero waste system. Ensuring the proper facilities are available locally reduces transportation costs for waste haulers and creates jobs in the local economy. Resource recovery is also influenced by the upstream, green procurement process. By choosing products than can be recycled or composted, we are creating the inputs for the resource recovery industry.

Resource recovery is a critical mechanism for reducing community greenhouse gas emissions. Organic waste such as food scraps and yard trimmings that are sent to landfills produce methane, a greenhouse gas that is 72 times more potent than carbon dioxide. According to the *Fourth Assessment Report of the*

Intergovernmental Panel on Climate Change in 2007, organic waste makes up the largest portion of our current waste stream, resulting in 123 pounds of methane gas emissions for each ton of landfilled municipal solid waste. Composting provides a healthy and economic alternative where recycled organic materials become nutrient-rich soil that can be used to grow new crops or fertilize landscapes. Organic waste can also be processed into biogas through anaerobic digestion. Biogas can be combusted to generate electricity and heat or processed into fuel.

TOWN RECYCLING

The Town provides the recycling pick-up program service through a private contractor. This curbside service is currently provided every other week during the months of October – April and weekly during the months of May - September. The following item are eligible for recycling: newspaper, brown paper bags, magazines/catalogs, telephone & soft cover books, junk mail/envelopes, paper, paperboard (cereal/tissue boxes), cardboard, glass bottles/jars, metal cans, #1 PET plastic containers, #2 HDPE plastic containers, #4 LDPE plastic containers, #5 polypropylene containers, and #7 mixed plastic containers.

11 RENEWABLE ENERGY & ENERGY EFFICIENCY

According to information provided by Energy.gov, energy efficiency and conservation are foundational elements of sustainability. Our homes consume a lot of energy:

- More than $160 billion a year to heat, cool, light, and live in our homes. This energy bill continues to grow.
- Our homes make up 21% of the energy our nation uses each year and contribute about 17% of our nation's emissions of greenhouse gases.

While our homes are more efficient today than they were 30 years ago, considerable opportunity remains for greater energy efficiency and a lower energy bill. Many households could save 20-30% on their household energy bills through cost-effective household improvements such as:

- Buying more energy-efficient products and appliances;
- Sealing air and duct leaks; and
- Adding insulation.

The State of Delaware supports the use of renewable energy by homeowners and business through grant funding, incentives and technical guidance. This is facilitated by Delaware Department of Natural Resources and Environmental Control within the Division of Climate, Coastal, and Energy. Renewable energy power comes from natural, unlimited sources like sunlight, wind, moving water and geothermal heat. In Delaware, there are about 5,000 renewable energy systems, primarily solar-powered.

Fossil fuels like oil, coal, and natural gas are considered non-renewable, finite resources. Burning these fossil fuels produces energy that we need for everyday use, but it also produces pollution and gases that trap heat in our atmosphere, creating dangerous changes in Earth's climate. Renewable energy sources produce the energy we need without these emissions. Renewable energy also makes our country energy independent

Delaware's utilities are required to get an increasing percentage of their electricity from renewable resources. State law mandates that they derive 25% of their energy portfolios from renewable sources by 2025. This has created a market for the sale of renewable energy credits. The renewable energy requirement is part of the Renewable Energy Portfolio Standards Act (26 Del.C. § 351 – § 364), passed in 2005, which was intended to establish a market in Delaware for electricity from renewable sources and to lower the consumer cost of renewable energy. The Act allows utilities to meet their portfolio standards by buying renewable energy credits from consumers or others who derive energy from wind, solar and other renewable sources.

The Delaware Sustainable Energy Utility (DESEU) is a unique non-profit organization offering a one-stop resource through its Energize Delaware initiative to help residents and businesses save money through clean energy and efficiency. The DESEU was created in 2007 by the state of Delaware to foster a sustainable energy future for the state. The DESEU model is the first of its kind to be established in the United States, and is being replicated in several other communities around the world. Green Grant Delaware is sponsored by the Delaware Sustainable Energy Utility (SEU) and the Delaware Department of Natural Resources and Environmental Control (DNREC). This website portal is home to the following programs:

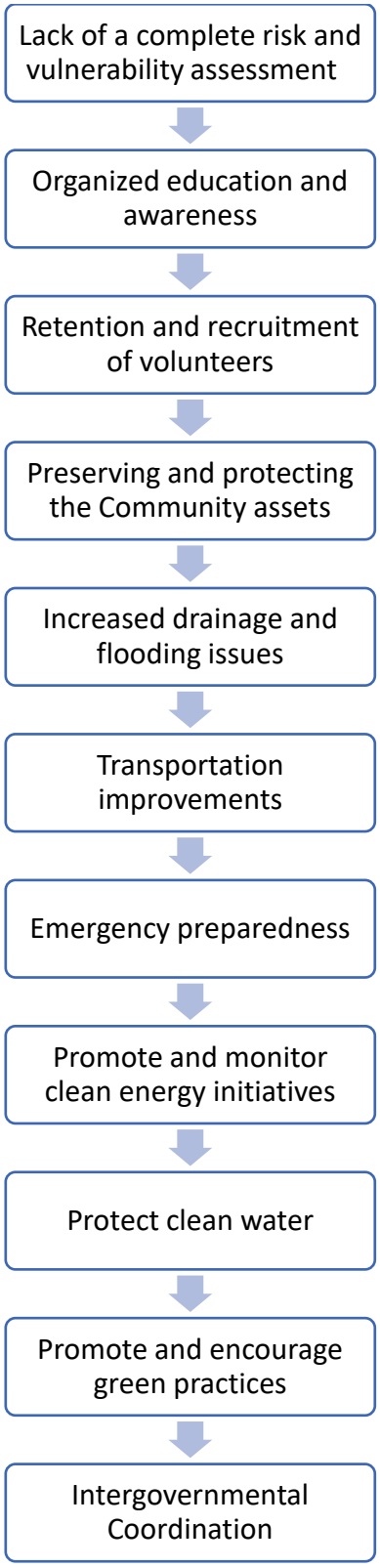
- *Green Energy Grant* – The Green Energy Grant Program for Delmarva Power customers provides grants for Solar Photovoltaic, Wind, Solar Hot Water, & Geothermal systems. This program is only open to Delmarva Power customers.

- *Non-Residential & Non Profit Solar Hot Water and Geothermal Grant* – The non-residential and non-profit solar hot water and geothermal program is jointly run by DNREC and the SEU, offering grants to qualified installations of solar hot water and geothermal systems in Delaware based on system sizes.
- *Home Energy Efficiency Loan* – The Energize Delaware Home Energy Efficiency Loan program was for Delaware homeowners looking to finance energy-saving home improvements.
- *Energize Delaware Solar Loan* – The Energize Delaware Solar Loan program is a low interest loan designed to encourage the purchase of customer sited and owned renewable generation. This program is open to credit-qualified residents of Delaware.

The State of Delaware, Department of Natural Resources Division of Climate, Coastal & Energy supports energy efficiency and conservation programs that help reduce energy use and its impact on the state's environment and public health. Every investment in energy efficiency helps increase productivity and profits for business, reduces the production of harmful greenhouse gasses, lowers energy costs, and improves the value and comfort of our homes and businesses. A *Delaware Energy Efficiency Advisory Council* develops and deploys energy efficiency programs and financing mechanisms offered by Delaware energy providers. The *Delaware Energy Efficiency Investment Fund* helps commercial and industrial customers in Delaware replace aging, inefficient energy equipment and systems. Another tool for consideration is the *Model Building Energy Codes*, they provide model energy conservation standards for local government building and plumbing rules and regulations. DNREC provides grants, services, and support for renewable energy, improved efficiency, and sustainability.

12 AREAS OF CONCERN

Based on the data collected and local history knowledge, the Environmental Committee has identified these ten areas of concern in no particular order; however, they are specific to Fenwick Island. They are listed below and further identified in the next section:



13 GOALS, STRATEGIES & IMPLEMENTATION

Fenwick Island strives to be a leader in sustainability. To do so, the Town has developed an implementation plan with action items that will help it achieve a vibrant local economy, a healthy community, and a protected environment, and will in turn encourage local residents to live more sustainably as well. Some items may not be accomplished immediately and will take years to achieve, but all items are strategic and will be pursued as soon as possible. Any member of the community is encouraged to create their own action items to pursue sustainability in their own lives and further the Town's goals.

The goals reflected below are not in any specific order and will be considered for implementation based on available funding and resources as well as priority initiatives established by the local Municipal leaders.

GOAL 1 – COMMUNITY EDUCATION & VOLUNTEERS

Several of the implementation tasks assigned to each goal will require additional local resources to complete. This includes further education and volunteering, which is further defined below:

EDUCATION

The Town has developed and maintained several partnerships with local organizations and multi-level government agencies to identify and complete several initiatives; therefore, there is a great opportunity to request assistance from specialty professionals to provide useful educational workshops for the Community.
Strategy – Coordinate, promote and facilitate ongoing educational workshops based on the implementation measurements of the goals listed in this Plan.
Implementation Measurements –

1. Annually review the appropriate and critical workshop topics for consideration.
2. Determine the number of educational workshops for the year (monthly, quarterly, bi-annually, etc.).
3. Identify the potential partners, resources and knowledgeable speaker for each workshop.
4. Promote an organized and advertised workshop with proper advanced notice of the event.
5. Ensure the workshops are understandable and the topics provide useful information, promote programs and resources, and identify potential funding (if applicable).

VOLUNTEERS

The Town depends heavily on volunteers to support local initiatives and prides itself on the Community involvement; however, with an aging and seasonal population the amount of long standing and knowledgeable volunteers are at risk of reduction.
Strategy – Continue to retain existing Community volunteers and recruit new volunteers for successful projects and initiatives that benefit the local area.
Implementation Measurements –

1. Prepare a list of volunteer opportunities to promote recruitment.
2. Promote the opportunities on the Town's website and Town Hall.
3. Reach out personally to new businesses, tenants and property owners welcoming them to the Community and promote volunteerism/engagement (face to face, letter from Mayor/Town Manager, welcome packet, etc.).
4. Create a volunteer recognition program (hours/years of service, annual recognition event, picture on Town website, etc.).

GOAL 2 – PRESERVE & PROTECT

The Community takes pride in its stewardship of the environment and cleanliness of the Town of Fenwick Island. This is a result of several preserve and protect initiatives, predominantly implemented with Committee members, Town staff and volunteers.

HEALTHY TREES

Strategy – Protect the existing healthy trees, promote the planting of new trees, educate on the benefits of trees and continue the identified diseased trees removal program.

Implementation Measurements –

1. Educate residents on the benefits of planting trees and bring in local resident experts or organizations to offer assistance and advice.
2. Encourage residents and to plant trees and bushes, consider offering incentives.
3. Identify Native trees and bushes that do well in the beach climate.
4. Continue to identify, monitor and notify home owners of diseased trees (Tree Triage Program).
5. Work with DNREC to removed diseased trees just north Fenwick Island in the State Park to reduce the spread of diseases.
6. Work with tree organizations to obtain resources, donations and funding for private property owners.
7. Continue to maintain the Tree City USA Community Designation.

BEACH PROTECTION

Strategy – Ensure the beach protection initiatives, projects and funding become an ongoing maintenance program as a priority locally to Fenwick Island.

Implementation Measurements –

1. Organize a community beach grass planting with the Town during October-March in addition to DNREC's annual planting in other areas throughout the State.
2. Ensure continual communication with beach replenishment efforts.
3. More frequent planting of beach grass and installation of fencing to improve and protect the dunes.
4. Ensure both private and public properties are maintaining healthy habitats.
5. Recognize that continued replenishment is essential to the economic viability of Fenwick and much of coastal Sussex.

LITTERING

Strategy – To reduce the impact that litter, trash and pet waste can have in the streets and waterways that are harmful to marine life and water quality.

Implementation Measurements –

1. Continue to maintain the pet waste disposal stations.
2. Promote and enforce proper pet waste disposal methods in the Community.
3. Continue to maintain the cigarette receptacles at the dune crossing and smoke-free beaches.
4. Promote and continue to support the Adopt-A-Highway cleanup program on SR1-Coastal Highway in Town of Fenwick and north of the town.
5. Promote and continue to support the Annual Earth Day Event to include the collection of trash within the Town limits along the streets.
6. Promote and continue to support the Annual Coastal Clean-Up along the shoreline.
7. Research the opportunity to start an Adopt-A-Shoreline program to promote ongoing trash clean up maintenance.

8. Continue to promote the yard waste program provided seasonally by the Town's private contractor.

GOAL 3 – IDENTIFY & IMPROVE

This goal identifies areas that need improvement; however, the approach and methods are not defined to move forward. These items will require research, studies, and engineering with larger capital budget costs.

FLOODING & DRAINAGE

Strategy –The flooding and drainage threat has increased based on a number of factors such as: sea level rise, high tides, winds, storms, increase of bayside flooding, new development, existing elevations and underdeveloped drainage infrastructure. A better understanding of the problems and options for improvement is needed to address this compounded issue.

Implementation Measurements –

1. Work with local emergency service to develop a plan during restricted access due to flooding and poor drainage.
2. Recognize and evaluate the chronic flooding occurring on normal high tides on the Bay side as this risks becomes a larger threat.
3. Review and consider different infrastructure, zoning and/or building code requirement updates to address flooding.
4. Research resources and coordinate educational workshops to learn more about:
    a. Raising roadways
    b. Improving bulkheads
    c. Determining height restrictions
    d. Best management practices for protection and reducing the volume of flooding
    e. Flood gates with the Army Corp of Engineers
    f. Sea Level Rise and Climate Control
5. Prepare a stormwater inventory and conditions assessment of the existing infrastructure to include priority improvement areas.
6. Research resources and coordinated educational workshops on MS4 regulations and stormwater utilities for potential future impacts on the Community.
7. Ensure continual communication and coordination with neighboring jurisdictions and organizations regarding new projects and initiatives to ensure they do not hinder nor have a negative effect of the Fenwick Community.

TRANSPORTATION

Strategy – Ensure the Town provides safe vehicle, bicycle and pedestrian access to private and public resources/land to include access for those with disabilities. Improving public transportation services in the can allow an alternative method to increased traffic concerns in the area.

Implementation Measurements –

1. Continue to meet frequently with DelDOT regarding issues and improvements to SR1-Coastal Highway, such as: congestion, lack of pedestrian connectivity, ADA accessibility, pedestrian safety, and rapid regional growth with under designed and outdated infrastructure.
2. Promote and research providing electric vehicle charging stations to accommodate the electric vehicles that reduce greenhouse gases and improve Delaware's air quality.
3. Discuss improving the public transit for frequency and year round bus service options with DelDOT.

GOAL 4 – EMERGENCIES

An emergency is defined as a serious, unexpected and often dangerous situation requiring immediate action. The types of emergencies are listed as: dangers to life, dangers to health and dangers to the environment. A state of emergency is a situation in which a government is empowered to perform actions that it would normally not be permitted to do. A government can declare such a state during a disaster, civil unrest, or armed conflict. Such declarations alert citizens to change their normal behavior and orders government agencies to implement emergency plans.

PREPAREDNESS

Strategy – Ensure the Town staff and Community are afforded the opportunity to learn what measures can be taken to prepare for multiple unplanned weather events, identify pertinent resources, take actions to minimize potential damage to properties and maintain personal safety.

Implementation Measurements –

1. Identify partners to provide assistance with educational workshops in preparation for multiple unplanned weather events.
2. Identify resources and provide information for emergency checklists, toolkits and supplies.
3. Ensure the Town has advanced directives in place to execute and the staff is familiar with the roles and responsibilities.
4. Prepare an emergency contact list for the Town staff and identified government agencies.

NOTIFICATIONS

Strategy – Provide information to the Community on the approved advance notification methods and resources for emergency situations.

Implementation Measurements –

1. Identify and learn best practices for advanced warning emergency notices if the television, radio, cell and landline phone services are out.
2. Develop an approach to notifying seasonal and aging population as well as the entire Community.
3. Provide outreach materials on the notification methods and the level of jurisdictional authority during an emergency.

EVACUATION

Strategy – Assist in the education and promotion of the approved Evacuation Plan, implement the required local steps, provide ongoing communication and support, and ensure the required resources are available to assist the Community.

Implementation Measurements –

1. Review the Sussex County and the Town of Ocean City's Evacuation Plan on an annual basis as both of these Plans and implementation items will have an impact on the Community. Identify areas of concern, local challenges, areas of improvements and resourcing.
2. Meet with Sussex County Emergency Operations to ensure the Evacuation Plan is updated and the responsibilities are understood to include the Town of Bethany Beach.
3. Meet with the neighboring Town of Ocean City to review and understand their Evacuation Plan as well as any potential areas of concern or conflicts within the two States.
4. Promote a regional multi-governmental approach with advanced evacuation notifications under existing local conditions, this cannot be managed nor treated the same on a statewide level.
5. Seek other vehicle evacuation options as the Town is land locked during evacuations with only two points of roadway options in and out.

6. Obtain assistance in providing education on evacuation procedures for the community to include seasonal and aged population.
7. Encourage early and mandatory evacuations due to the lack of transportation infrastructure options and increased level of safety.
8. Support and promote the retention of local emergency responders and proper resources.

GOAL 5 – CLEAN ENERGY

Clean energy may also be called *renewable energy* or *green energy*, and it specifically refers to energy produced from renewable resources without creating environmental debt. There are several other ways that this term can be defined. It may refer to energy processes that pollute less or, alternately, to energy that doesn't pollute at all and doesn't use resources that can't be easily renewed. The basic forms of clean energy are often cited as those that come from water, wind, or sun (solar).

Strategy – To obtain a better understanding of the clean energy options and initiatives to include best management practices and identifying any potential negative effects to the Community and region.

Implementation Measurements –

1. Identify partners to provide assistance with educational workshops on reducing energy use/energy efficiency and greenhouse gas emissions.
2. Identify partners to provide assistance with educational workshops on clean energy initiatives, systems/equipment, risks and maintenance, on the following topics: wind, solar, Delaware's Green Energy program, electric/propane/gas vehicles, etc.
3. Determine resources and identify funding to support the selected initiatives.

GOAL 6 – CLEAN WATER

Clean Water is essential not only to wildlife and the fragile ecosystems surrounding Fenwick Island, but it is also essential to the Town's residents and to the Town's tourism economy. Unfortunately, the Inland Bays area has suffered from past neglect. Note - Drinking water is provided by a private utility company and they are regulated by Department of Health and Social Services as well as the Public Service Commission for water quality and service standards.

Strategy – To monitor, maintain and identify areas of improvement for water quality in the Bay and Ocean.

Implementation Measurements –

1. Remain vigilant and active in the Delaware Inland Bays and Delaware Bay Coast Storm Risk Management Feasibility Study with the next step providing an Environmental Impact Study (EIS) in 2020.
2. Continue to focus on clean water initiatives in the Bay.
3. Educate and promote the Center for Inland Bays oyster gardening program to the Community.
4. Educate residents and homeowners on the reality of trash and litter in the bays.
5. Research runoff from farms and structures along the 54 Corridor.
6. Continue with bay dredging initiatives.

GOAL 7 – GREEN PRACTICES

Encourage green building and infrastructure that is designed, constructed, and operated to meet the triple bottom-line of economic sustainability, ecological responsibility, and social equity. Green building strategies generally belong to one or more of five categories: sustainable site development, water resource conservation, energy conservation and atmospheric protection, material resource conservation, and indoor environmental quality. Encourage nature based solutions such as living shoreline, etc., when applicable.

Strategy – To learn more about the five green building strategies and promote applicable measures to allow green infrastructure initiatives within the Community. These may include nature-based solutions and sustainable building practices.

Implementation Measurements –

1. Identify resources and partners to assist in the educational outreach of green buildings and infrastructure as well as nature based solutions.
2. Partner with number of organizations that provide third-party verification or certification of the achievement of green building goals. Some of the most well-known rating systems include Leadership in Energy and Environmental Design (LEED), Green Guide for Healthcare (GGHC), and Green Globes.
3. Research funding opportunities and potential incentives to encourage these methods.
4. Host a Community educational workshop with identified resources and partners to present the best management practices.

GOAL 8 – RISK & VULNERABILITY ASSESSMENT

The Town of Fenwick Island needs to further determine and prioritize the precautionary measures that can make a community more disaster-resistant.

Strategy – Complete a Town *Risk & Vulnerability Assessment* guide that would identify people, property and resources that are exposed to and threatened by injury, damage or loss from natural hazard events.

Implementation Measurements –

1. Seek interested project partners, such as: Sussex County, applicable State and Federal Agencies, University of Delaware, private organizations, etc.
2. Research potential funding opportunities with Delaware Department of Natural Resources and Environmental Control, Delaware Emergency Management, National Oceanic and Atmospheric Administration (NOAA), etc.
3. Research methodology provided by NOAA's Coastal Services Center (CSC) Risk and Vulnerability Assessment Tool (RVAT) and Community Vulnerability Assessment Tool (CVAT) and others.
4. Ensure the assessment includes exposure to flooding that includes: critical facilities, societal, economic and environmental components.
5. Develop recommendations for actions by the Town and related agencies and individuals.

APPENDIX

A hard copy of the Community Sustainability Plan including the Appendix documents are available t to view at Town Hall. Based on the large size of the appendix documents, they can be found on the Town's website on the following link: https://fenwickisland.delaware.gov/

A – S.W.O.T. Analysis

B – Resources & References

C – Community Survey & Results

D – Maps

Town of Fenwick Island

Hurricane Sandy
Fenwick Island
(October 2012)

Community Sustainability Plan

KCI TECHNOLOGIES