Historic Town of Highland Beach

Comprehensive Plan 2020

TOWN OF HIGHLAND BEACH

(INCORPORATED 1922)
3243 WALNUT DRIVE
Highland Beach, Maryland 21403
Telephone (410) 268-2956

MAYOR
William H. Sanders III

TREASURER
Sheila Jeanne Murchison

COMMISSIONER
Eric Baugh
Eric Brewington
Benjamin Secundy

Resolution 2020-02
A Resolution To Adopt The Highland Beach Comprehensive Plan 2020

WHEREAS: Highland Beach began as a community with a vision from our founders in 1893, and that vision was strengthened with the incorporation of the then summer resort for prominent African Americans in 1922 as the first African American town in the State of Maryland, and what is thought to be the oldest African American resort community in the Nation. And

WHEREAS: Three decades ago, the Town adopted the 1990 Comprehensive Plan outlining goals, objectives, and recommendations to guide future development and to preserve the unique history, character, and rich legacy of the Town. And

WHEREAS: Much has occurred in the intervening decades, with major changes in the world, including shifting international alliances, climate change, a global coronavirus pandemic, and technology that is commonplace to today's world that was unimaginable in the year 1990. And

WHEREAS: Many of the recommendations from the 1990 plan have been realized. The Comprehensive Plan 2020—before the Board of Commissioners for consideration— updates and expands upon the 1990 Plan, with the inclusion of additional material for a more comprehensive understanding to reflect current times, to address today's unique challenges, and to offer additional goals, objectives, and implementation tools to guide future actions in the Town.

NOW, THEREFORE, IT IS HEREBY PROCLAIMED that the Mayor and Board of Commissioners of the Town of Highland Beach hereby adopt the Highland Beach Comprehensive Plan 2020.

William H. Sanders III, Dr.P.H., Mayor — Date: December 19, 2020

Eric Baugh, M.D., Commissioner — Date: December 19, 2020

Eric Brewington, Commissioner — Date: December 19, 2020

Benjamin Secundy, Commissioner — Date: December 19, 2020

Sheila Jeanne Murchison, Treasurer — Date: December 19, 2020

Attest: Aundrea Naylor, Clerk — Date: December 19, 2020

Preface

Three decades ago, the historic Town of Highland Beach adopted a Comprehensive Plan with goals, objectives, and recommendations to guide future development and to preserve the unique history, character, and rich legacy of the Town[1].

Much has occurred in the intervening decades, with major changes in the world, including shifting international alliances, climate change, a global coronavirus pandemic, and technology that is commonplace to today's youth that was unimaginable when the Plan was adopted. And although much has changed at The Beach, with new structures, added amenities, and new residents, we are thankful that what has been most treasured about our Town remains.

Many of the recommendations in the 1990 Plan have been realized. The housing stock is strong, with the addition of many new homes and the renovation of existing cottages, all in compliance with the latest regulations governing home construction. New amenities recommended in the Plan have been realized, most notably with the establishment of the Frederick Douglass Museum and Cultural Center, and construction of the Town Hall designed to reflect the character of the Caretaker's Cottage that it replaced.

This Comprehensive Plan 2020 updates and expands upon the 1990 Plan, recognizing what has been accomplished since 1990, and adding additional material for a more comprehensive understanding. In particular, the Plan includes pertinent material from the Anne Arundel County, Maryland, 2018 Hazard Mitigation Update[2], and from the Annapolis Neck Small Area Plan[3]. Both documents provide valuable insight into the character, nature, and challenges at The Beach.

Adoption of this Plan by the Mayor and Board of Commissioners followed a public review and hearing process to obtain and incorporate comments from the residents of Highland Beach. It was very important to engage the current residents of the Town to validate the sentiments of the residents three decades ago, to recommend changes as necessary to reflect the current times and sentiments, and to add additional goals, objectives, and implementation current with the times.

[1] For a comprehensive look at the history and culture, readers are referred to the book, *Highland Beach on the Chesapeake Bay, Maryland's First African American Incorporated Town*, Jack E. Nelson, Raymond L. Langston, and Margo Dean Pinson, The Donning Company Publishers, copyright 2008 by the Highland Beach Historical Commission.
[2] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020
[3] Annapolis Neck Small Area Plan, Anne Arundel County, Maryland, March 2003

Executive Summary
Town of Highland Beach
Comprehensive Plan 2020

Highland Beach began as a community with a vision from our founders, Major Charles Douglass and his wife, Laura, when they visited the neighboring community of Bay Ridge in 1892. The town was founded in the next year, 1893, as the first summer resort area for prominent African Americans. Amongst those was the father of Charles Douglass, the famed abolitionist Frederick Douglass. The summer cottage constructed for Douglass remains today as the Frederick Douglass Museum and Cultural Center.

Today, the Town thrives as a successful community with a rich heritage. The intent of this 30 year in update is to ensure the continued viability and success of the Town, to recognize the accomplishments to date, and to again confirm and establish goals, objectives, and recommendations to guide development and other decisions for the future.

The Comprehensive Plan is comprised of four sections. **Section 1**, Background and Contemporary Character, recognizes Highland Beach as part of the Annapolis Neck Peninsula; and as the only other incorporated municipality in Anne Arundel County, the Plan reflects upon our unique position within those jurisdictions. As such, it relies extensively on existing information documented by those entities, particularly and specifically, as the documentation pertains to Highland Beach. As a small municipality, the Town relies upon our partnership and cooperation with Anne Arundel County, particularly in the areas of housing, flood and erosion control, and hazard mitigation.

Highland Beach is within the Chesapeake Bay Critical Area, and this factor, together with our strong commitment to protect and enhance the water quality of the Chesapeake Bay, drives many of the land use decisions in the Town. In addition, sensitive areas in the Town and the impact of human development further dictates that special efforts are required to protect important public resources such as groundwater—our source of drinking water—creeks, and of course the Chesapeake Bay. These sensitive areas include the 100-year floodplain, streams and their buffers, habitats of rare, threatened, and endangered species, and steep slopes.

Together with these concerns for environmental protection that extend from the 1990 Comprehensive Plan to the present day, residents today are faced with growing concerns, for example: the eminent and future threats of viral pandemics; and that of overpopulation of deer on the peninsula, and the associated safety and health concerns, particularly of Lyme Disease from ticks carried by deer. The deer overpopulation is a problem vexing many communities across the country, but one whose solution in Highland Beach is further complicated by the need for contemporaneous action by neighboring communities, if any solution is to be effective. Of course, the threat and reality of a viral pandemic is a global concern.

Land use in Highland Beach has changed somewhat dramatically and surprisingly since adoption of the 1990 Plan. Twenty-one homes have been constructed on previously vacant lots. Several of the original cottages have been torn down and new homes built on the sites. And many of the remaining original cottages have been extensively renovated. Two homes counted as residential in 1990, the Frederick Douglass summer home, and the (replaced) Caretaker's Cottage, are now counted as town buildings. So, while the acres in wetlands and streets have remained largely unchanged from 1990 to 2020, residential acres increased from

24 acres to 30 acres; parks and open space added over a half an acre; and vacant land decreased from 9 to 2 acres.

In addition to amenities within the Town, community assets available to Highland Beach residents include those offered nearby in the county, including park lands, archaeological, historical, educational, and commercial resources.

Community amenities in Highland Beach have increased significantly since 1990. The Town now has a Frederick Douglass Museum and Cultural Center, and a state-of-the-art "green" Town Hall that houses a research library and museum annex. In addition to installation of our RainScaping Park, several rain gardens have been installed in the Town, together with shoreline erosion control projects on the beachfront. A kayak launch, called for a boat launch when the 1990 Plan was adopted, is now in place for the enjoyment of residents. Building a new pavilion was also suggested in the 1990 plan, with a caveat of having available funding for such a project. The 2020 Plan repeats the call for a pavilion, without the caveat. Today, the town is financially able to build a "Pavilion II", albeit not in the original location. A prime location for consideration, however, may be in the Wayman Avenue Park, with a view to the Chesapeake Bay as well as a view to the original location of the Pavilion. To protect the 100-year floodplain at that location, the structure would need to be raised a few feet above ground level, so as not to disturb the ecology of the floodplain.

Section 2, External Factors Impacting Life in Highland Beach, again presents much material derived from Annapolis Neck Peninsula and Anne Arundel County documents. The intent is to provide context and background on issues and concerns particularly of the broader areas of which Highland Beach is a part. The section covers climate change/global warming, sea level rise, weather hazards, and other concerns. Shoreline erosion is perhaps the most notable of the hazards addressed that is of great interest and concern by many of today's residents. This section thus provides more detail on the shoreline erosion concern to better equip residents to address the limitations and opportunities for shoreline protection and restoration, and the role of our partner, Anne Arundel County, in addressing the concerns.

Section 3, Goals, Objectives, and Recommendations starts with a base from the 1990 Plan and expands that material to reflect the values and additional desires of today's residents. Just as, in retrospect, we can see how the goals and objectives in the 1990 plan has provided a guide for the last three decades, the intent of the Comprehensive Plan 2020 is to capture the desires of current and future residents. This section provides a multitude of goals, objectives, and recommendations on a variety of concerns, and may be the section of most interest to the reader.

Section 4, Public Hearing and Adoption Process, provides the process for adoption of the Comprehensive Plan 2020 with ample time for public reflection and input, including a public hearing and solicitation of and response to written comments. Through this process, it is intended to derive a Plan that reflects the values and desires of Highland Beach residents that will serve as a guiding template that serves the town residents well into the future.

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Section 1: Background and Contemporary Character

Brief History of the Historic Town of Highland Beach

In 1892, Major Charles Douglass, youngest son of Frederick Douglass, and Charles' wife Laura, were turned away from a restaurant at the Bay Ridge Resort and Amusement Park because of their race. The resort was separated by a narrow channel—the mouth of Black Walnut Creek—from property owned by the Brashears, a local black family. Crossing the channel, it was through a chance encounter between a member of the Brashears family and Charles and Laura Douglass that the origins of Highland Beach are rooted. After discussions over the next several months, and with financial assistance from his father, Charles Douglass worked out an arrangement to purchase a two-thirds interest in forty acres of the original forty-eight-acre Brashears estate from two of the heirs—Daniel Brashears and Georgianna Lane. In the spring of 1893, they settled on the purchase of twenty-six and two-thirds acres of land that would become Highland Beach. And almost a century later, in 1988, Highland Beach annexed the eight-acre Dr. John E. Washington tract.

By 1894, Douglass had built the first cottage, establishing a retreat for himself and others on the Chesapeake Bay. With 600 feet of beachfront, he turned it into a summer enclave for family and friends. Frederick Douglass—famed activist for abolition and women's suffrage, orator, publisher, diplomat and adviser to President Abraham Lincoln, perhaps the most famous black man of his time, and one of the most photographed personalities in our nation's history—would have become a resident had he not died in 1895 before the summer home, that his son Charles was building for him, was completed.

The Town of Highland Beach became a gathering place for educated blacks, including many of the well-known blacks of the time and later years. Among the residents and guests were—Paul Robeson, concert artist and stage and film actor famous for his cultural accomplishments as well as for his political activism; Judge Robert Terrell, who served as one of the first municipal court judges in Washington, D.C., and his wife, Dr. Mary Church Terrell, one of the first African American women to earn a college degree, who became known nationally as an activist for civil rights and women's suffrage; Booker T. Washington, author, educator, orator, and advisor to U.S. presidents; Robert Weaver, who served as the first African American appointed to a cabinet position in the federal government as the U.S. Secretary of Housing and Urban Development; W.E.B. Du Bois, sociologist, historian, civil rights activist, and author; Paul Laurence Dunbar, poet, novelist, and playwright; Langston Hughes, poet, social activist, novelist, and columnist; E. Franklin Frazier, sociologist and author of the books *The Negro Family in the United States* (1939), and *Black Bourgeoisie* (1957); and later, author Alex Haley, perhaps most famously known for his ground-breaking book *Roots: The Saga of an American Family (1976)*, that became a national sensation as a television production.

When Highland Beach was incorporated in 1922, it became the first African American municipality in Maryland. It is also believed to be the first African American summer resort in

the United States. Although founded as a summer resort, it is now a town of both summer and year-round residents who choose not to permit commercial establishments. Today there are 77 homes, many of them still owned and occupied by descendants of the original settlers. The residents are proud and protective of their town's heritage, established over 127 years ago by proud and successful people determined to overcome the prejudices of their post-Reconstruction times. Highland Beach is the home of Twin Oaks, which now serves as the Frederick Douglass Museum and Cultural Center.

Highland Beach is one of the historic African American summer communities on display at the National Museum of African American History and Culture. As a participant in the museum's Great Migration Film Digitization Program, the town was invited to the inaugural Smithsonian African American Film Festival held in October 2018 at the Freer Gallery of Art on the National Mall. The National Museum invited the Mayor and his wife to participate in the event and to showcase a compilation film about the Town of Highland Beach. The films shown were those of several film reels of historic Highland Beach footage shot by longtime Highland Beach resident Dr. Millard Dean. The films were digitized at no cost by museum staff. The purpose of the Great Migration Film Digitization Program at the Museum is to preserve historic footage that documents black Americana. Highland Beach was invited to participate as a prime and unique example of the black experience documented on film through the decades.

Highland Beach is bordered on the north by Black Walnut Creek and the community of Bay Ridge, on the east by the Chesapeake Bay, and on the south by Oyster Creek and the community of Venice Beach. The beachfront is for the benefit of Highland Beach residents and their guests.

Highland Beach is situated within Anne Arundel County and the Annapolis Neck Peninsula, and consequently shares many of the cultural, historic, and natural resources benefits and problems attendant to those areas.

Incorporated and Unincorporated Jurisdictions[4]

"There are only two incorporated communities within Anne Arundel County. These are Annapolis and Highland Beach. Annapolis has independent land use authority and has developed and updated its own [Hazard Mitigation Plan] HMP. Highland Beach is included in the County HMP.

"The **City of Annapolis (the City)** is a municipal body that has the power to execute municipal functions within the boundaries of the City of Annapolis, Maryland. The City has the authority to adopt local ordinances, regulate development, and implement mitigation strategies that are independent of Anne Arundel County (the County). The City and County have the ability to coordinate and integrate efforts when support or resources are needed to respond or recover from a disaster or a declared local, regional, or national civil emergency. The relationship between the coordination of efforts between the City and the County is further outlined in the Emergency Operations Plan, Basic Plan and Emergency Support Functions (ESFs), of the Anne Arundel County Office of Emergency Management, 2019 Edition.

[4] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 3-12

"Highland Beach has zoning authority only. The community has a Commission that performs reviews for compliance of established zoning standards such as the appearance of a structure, setbacks, and improvement of roads. In all other matters, the County is the primary agent. Highland Beach is subject to County coastal floodplain and grading requirements. The County is responsible for issuing and reviewing permits. Because the County is primarily responsible for the types of structures and the location of those structures, as well as enforcing County standards, it is the County's position that this HMP is sufficient to cover Highland Beach. Therefore, as an incorporated jurisdiction in Anne Arundel County, the Town of Highland Beach must also approve the updated HMP with its own resolution."

Outer Neck of the Annapolis Neck Small Planning Area

Highland Beach resides in the Outer Neck of the Annapolis Neck Small Planning Area. According to the Annapolis Neck Small Area Plan:

Outer Neck[5]

"The Outer Neck lies directly east of the Forest Drive/Bywater/Harness Creek area. It is bounded by Quiet Waters Park to the west, the City of Annapolis and Severn River to the north, and the South River to the south.

"There are four major concentrations of residential communities within this area. The first is the Hillsmere Shores area, with over 1000 single family homes. This community is served by Hillsmere Drive, a collector road that provides access to Forest Drive. The Hillsmere area also contains the Key School, a private educational institution that enrolls about 600 students, and St. Anne's Day School.

"The next area is served by Arundel on the Bay Road and contains the subdivisions of Kitty Creek, Quay Harbor, Indian Echo, Fishing Creek Farms, Watergate, Oakwood, Venice Beach, South River Manor, Black Walnut Cove, Walnut Lake, Highland Beach, Oyster Harbor and Arundel on the Bay. Together, these residential communities comprise about 1100 single family homes. Other features located in this area are the Hillsmere Elementary School, Thomas Point Park, and historic Highland Beach, the only other incorporated area, besides the City of Annapolis, in Anne Arundel County."

Climate[6]

"Anne Arundel County's climate is generally moderate. It varies in the summer from mild to hot, and in the winter it is typically moderate. The highest average temperatures occur in July, averaging in the mid-to-upper 80s. Low temperatures tend to occur in January, the coldest month, averaging in the [30s and 40s].[7]"

[5] Annapolis Neck Small Area Plan, Anne Arundel County, Maryland, March 2003, Page 11
[6] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 3-18
[7] https://www.usclimatedata.com/climate/annapolis/maryland/united-states/usmd0585

Table 1: Anne Arundel County Temperature and Precipitation by Month

Month	Normal Maximum Temperature	Normal Minimum Temperature	Normal Monthly Precipitation (inches)
January	44	29	3.31
February	48	31	2.95
March	57	38	4.53
April	68	47	3.66
May	77	57	4.21
June	86	67	4.17
July	89	71	4.57
August	87	71	3.90
September	81	64	4.76
October	69	52	3.90
November	59	42	3.82
December	48	33	3.54
Annual	68	50	3.94

Community Assets[8]

Critical Facilities and Infrastructure

"Critical facilities are those facilities that provide essential services to the community and must be functional after a hazard event. Anne Arundel County considers the following facilities to be critical: hospitals, fire stations, police stations and public shelters. Table 3.3-2 is a list of facilities that the County has designated as critical, current as of July 2019. There are no critical facilities in Highland Beach.

Park Lands.[9] "Most of the public park properties vulnerable to sea level rise are County parks. Many are open natural areas, but the vulnerable properties also include active recreation parks with sports fields, public school recreation areas, and public piers. It appears that most of the physical infrastructure on park properties is located outside of the projected inundation areas. Still, future park development plans will need to take into consideration these potentially vulnerable areas. Of the 59 vulnerable park properties, 12 are located in South County, 11 in Deale/Shady Side, 8 in Edgewater/Mayo, 6 in the Lake Shore area, 5 on the Broadneck peninsula, and the remainder in other communities.

Archaeological and Historic Resources. "A total of 371 archaeological sites are vulnerable under a 0-2 foot sea level rise scenario. The number rises to 422 in a 0-5 foot sea level rise. The 422 threatened sites account for nearly 30% of the total sites recorded in the County. Ninety-one of these sites date from the historic period (from the mid-seventeenth- ca. [sic] 1650, through the early twentieth century- ca. 1940), and 215 are from the prehistoric period (or, Native American sites that pre-date the arrival of

[8] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 3-19
[9] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 3-34

Europeans to Anne Arundel County ca. 1650 AD to ca. 8,000 BC). The remaining sites either contain both historic and prehistoric components or date to an unknown time period. Table 2 provides information about the numbers of archaeological sites inundated by the two levels of sea level rise.

Table 2**: **Anne Arundel County Land Areas Inundated by 0-2' and 0-5', Archaeological Sites

(Source: 2011 Sea Level Rise Strategic Plan, Table 6, Page 10)

Cultural Affliation	0-2 ft Inundation	0-5 ft Inundation
Prehistoric	192	215
Historic	80	91
Prehistoric & Historic	43	52
Unknown	56	64
Total	*371*	*422*

"Forty-seven recorded structures listed on the Maryland Inventory of Historic Properties (MIHP) may be vulnerable with 0-2 feet of sea level rise, while 74 are vulnerable with up to 5 foot of rise. These sites include historic buildings, bridges, lighthouses, and historic roads and districts, along with several Federal historic resources outside of the County's jurisdiction. Some of the recorded historic sites are historic districts that may contain multiple resources within a confined geographic area. Thus, while the table below indicates 12 historic districts may be vulnerable, the number of individual buildings and landscape features that are within those districts could number in the hundreds and may comprise a much larger threat."

Natural and Historic Resources[10]

"The Annapolis Neck Small Area contains many significant environmental features. Due to its peninsular form, the Neck has extensive tidal shoreline along the South River, Severn River and the Chesapeake Bay. The area also contains numerous streams, floodplains, tidal and non- tidal wetlands, and other sensitive areas. Some of these features are shown on Map 8. The sensitive areas shown on this map include upland natural areas, steep slopes, floodplains, wetlands, natural heritage areas, habitat protection areas, and colonial nesting sites. These features are described in the following sections."

Chesapeake Bay Critical Area

"In 1984, the Maryland General Assembly passed the Critical Area Law in response to the environmental decline of the Chesapeake Bay. This law created a special planning area encompassing all wetlands, land, and water areas within 1000 feet of the landward boundaries of the mean high tide or the edge of tidal wetlands as designated on the State Tidal Wetland maps. The Critical Area Commission was also created to formulate protective criteria for the use and development of this area and to oversee the programs developed by local jurisdictions, which were required by the State law to develop their own Critical Area Programs based on the Commission's criteria.

[10] Annapolis Neck Small Area Plan, Anne Arundel County, Maryland, March 2003, Page 30

"Anne Arundel County's Critical Area program was developed in 1988 to manage land use in these sensitive coastal areas. Pursuant to the State's criteria, the County designated three development categories within the Critical Area. The delineation of the development categories was based on the existing development and available public services as of December 1, 1985. The three categories are listed below.

- "Intense Development Areas (IDAs): areas of 20 or more contiguous acres where development predominates and where there is relatively little natural habitat. IDAs can be developed with high density housing, commercial or industrial uses, according to the underlying zoning designation.
- "Limited Development Areas (LDAs): areas developed at low or moderate intensity. Additional development must not change the prevailing established land use, and must improve water quality and conserve areas of natural habitat. LDAs can be developed with medium density housing at a maximum of 4 units per acre, commercial and small industrial uses according to the underlying zoning designation.
- "Resource Conservation Areas (RCAs): areas characterized by nature-dominated environments such as forests, wetlands, or agriculture. New residential development is limited to a density of one dwelling unit per 20 acres.
- "Within the Critical Area, there is a 100-foot wide minimum protected buffer from tidal waters, streams and tidal wetlands. Development in both the RCA and LDA designations also requires that impervious surfaces be limited to 15 to 25% of the site. Clearing of forested lands is limited and there are specific requirements for reforestation. Moreover, development of LDA or RCA lands that are not forested includes a requirement to establish 15% of the site in forest. [11]
- "The State's criteria also required the County to designate Habitat Protection Areas (HPAs) within the Critical Area. These include historic waterfowl staging and concentration areas, colonial water bird nesting sites, threatened and endangered species and species in need of conservation, anadromous fish spawning areas, existing riparian buffers, forested areas used by forest interior dwelling birds, nontidal wetlands, Natural Heritage Areas, and other areas of local significance.
- "Historic resources in Anne Arundel County reflect the County's over 300-year history. The Maryland Inventory of Historic Properties in Anne Arundel County lists over 800 historic resources Countywide. These resources include a diversity of sites and/or properties such as dwellings, agricultural buildings, cemeteries, churches, commercial buildings, industrial and engineering structures, bridges, maritime resources, military structures, small villages and towns, and scenic and historic roads. Most of the County's historic resources are privately owned; fewer than a dozen are open to the public. Within the County, 35 historic properties totaling 636 acres are protected by historic preservation easements that are held either by the Maryland Historical Trust or the National Trust for Historic Preservation.[12]
- "Annapolis Neck has an abundance of historic sites including a few listed on the National Register of Historic Places and National Historic Landmarks. Table 5 and Map 9 list the historic buildings and sites and scenic and historic roads on the Annapolis Neck. Some of the many significant historic sites include the Meyer Residence near South Haven Road, Howard's Inheritance near Bestgate Road, Old Bloomfield on Cape St. John Road, the Weems Creek Bridge carrying Ridgely Avenue over Weems Creek, Toad Hall on Arundel on the Bay Road and the

[11] Annapolis Neck Small Area Plan, Anne Arundel County, Maryland, March 2003, Page 33
[12] Annapolis Neck Small Area Plan, Anne Arundel County, Maryland, March 2003, Page 44

communities of Bay Ridge and Annapolis Roads. Scenic and Historic Roads include Ferry Point Road and Harness Creek Road. The County offers protection to these historic sites through Federal and State regulations, as well as County legislation."

Sensitive Areas in Highland Beach

The need to protect environmentally sensitive areas is the recognition that these resources are vital to our well-being. Destruction or drastic alteration of these areas can be detrimental to our social and economic welfare by creating or exacerbating hazards such as flooding; destroying important public resources such as groundwater supplies and the water quality of Black Walnut and Oyster Creeks and the Bay; wasting important productive lands and non-renewable resources; and damaging the natural beauty of our Town.

The Economic Growth, Resource Protection and Planning Act of 1992 requires that our comprehensive plan address protection of four sensitive areas: the 100-year flood plain; streams and their buffers; habitats of rare, threatened, and endangered species; and steep slopes. These areas are extremely sensitive to the impacts of development and are vulnerable to degradation associated with the number, movement, and activities of people. Quite often, these areas are unsuitable for development. Disturbance of these areas degrades or eliminates natural processes that provide flood control, groundwater recharge, stormwater management, and habitat protection. In addition, disturbance of these areas can impact the natural resources that contribute to the Town's character and the residents' quality of life.

■ 100-Year Floodplain

Floodplains are by definition subject to periodic flooding. They are characterized by relatively flat topography and soil types that were laid down during past inundations by flood waters. Less than one-third of the Town is within the 100-year floodplain. The areas of the Town east of Langston Avenue, and north and east of Bay Avenue at Bruce Avenue are in the nontidal 100-year floodplain and the coastal floodplain.

According to the Anne Arundel County General Development Plan[13], "The 100-year floodplain is the land area adjoining a river or stream that has a 1% or greater probability of flooding in any given year. In general, a floodplain is a relatively flat or low land that is subject to partial or complete inundation from floodwater. Historically, 100-year floodplain protection requirements were used to guard against injury to people and to prevent destruction of property. In the context of sensitive areas protection, relatively undisturbed floodplains also serve a variety of environmental functions.

"A floodplain is an integral part of the stream system. It provides storage capacity for high flows, helps reduce the erosive power of the stream during a flood, reduces the discharge of sediment during high flow periods and helps floodwaters to move downstream. Floodplains also offer opportunities for wildlife habitat that can increase the biotic diversity of a stream. Floodplains provide water quality benefits as well. It is vital that the 100-year floodplain be kept in its natural state to protect public safety and the quality of streams and their habitats."

[13] Anne Arundel County General Development Plan, 2008, Background Report on Natural Resources, April 1008, Page 15

Generally, prohibition of development within the 100-year floodplain has the greatest potential for achieving environmental and resource protection goals. Restricting these areas within our Town from further development will also serve to protect against the loss of life and property. Development does not include improvement of private homes or construction by individuals, but does include commercial development and development of more than one house by a business for profit. Any development within the 100-year floodplain must meet floodplain management requirements.

■ Steep Slopes

Most of our Town is relatively flat and slopes are generally less than 10 percent. Localized steep slopes border Black Walnut Creek; our goals and policies for creek buffers protect this area; however, there are areas where slopes exceed 25 percent. The largest area of steep slopes consists of land bordering Black Walnut Creek, including the wooded lot recently donated to the Town.

Areas of steep slopes can create limits to human activity and are generally not well suited for development. Development on and disturbance of steep slopes can adversely affect Chesapeake Bay water quality, especially when the slopes are associated with highly erodible soils.

Preservation of steep slopes adjacent to water bodies protects water quality and aquatic habitat. Preserving vegetation on steep slopes can minimize hazards such as flooding, landslides, upland slumping, erosion, and pollution of our waterways. Steep slopes also tend to have higher biodiversity when compared with more uniform living conditions. Steeply sloped lands are often comprised of numerous small areas with very specific living conditions called microhabitats to which certain plants and organisms are specifically adapted. Steeply sloped areas may consist of numerous microhabitats. Conservation of the biodiversity that characterizes these areas is an important consideration in steep slope protection.

It is also important to note that[14] "Anne Arundel County protects erosion of steep slopes through the Subdivision Ordinance. Development in the County may not occur within steep slopes or within 25 feet of the top of the steep slopes where the onsite and offsite contiguous area of the steep slopes is greater than 20,000 square feet unless development will facilitate stabilization of the slope or the disturbance is necessary to allow connection to a public utility. In the RCA and LDA overlay zones of the Chesapeake Bay Critical Area, development may not occur within slopes of 15% or greater unless development will facilitate stabilization of the slope or the disturbance is necessary to allow connection to a public utility. In addition, steep slopes are considered a primary environmental feature within the Stormwater Practices and Procedures Manual. They must be documented as part of the development process.

■ Creeks and Their Buffers

Bordering our Town, Black Walnut and Oyster Creeks are important components of our Town's natural areas and have several important functions. These creeks intercept stormwater runoff and contribute to the quality of the Town's water resources. Our creeks promote biological diversity by the interconnection of ecological systems and function as components in hydrologic and nutrient cycles. Creeks are vital to the Town's natural ecosystem, performing several

[14] GDG Background Report, Page 21 and 24

important functions, including providing valuable habitat for underwater grasses, oysters, crabs, and fish spawning, as well as supporting a variety of recreational activities.

Development here has resulted in significant impacts to creeks and their buffers. As areas of undeveloped forested land were cleared and built upon creating new impervious surfaces, the intensified human activities increased polluted stormwater runoff and sedimentation in creeks, while decreasing the creeks' natural integrity. Maintaining the health of a creek is dependent on many factors occurring throughout the watershed; however, buffers are a critical component of the creek ecosystem that perform many functions and contribute to optimum effectiveness of the ecosystem services provided by our creeks. A healthy creek with steady base flow, natural bends, adequate shade cover, an integrated combination of deep pools, and slow-moving runs, and wide well-vegetated buffers provide many ecosystem services such as clean water and habitat for species like blue crabs.

Creek buffers are much more than a line drawn a certain distance away from a creek. Natural vegetation along creeks provides habitat, stabilizes banks, provides shade, filters pollutants, and produces leaf litter and woody debris that form the base of the food chain. The varying hydrologic regimes and topography normally associated with creeks provide excellent biological diversity in a limited area of land. Creeks and their buffers are especially important in our Town where they function as greenways, wildlife corridors, and stormwater holding and transport systems.

The quality of creeks and their buffers directly impacts the Chesapeake Bay. Excess nutrients, sediments, and pollutants from developed lands in the Town can contribute to over-nutrification and excess turbidity. These conditions adversely impact water quality and the health of Bay grasses. Many fish and shellfish that are important to the economy and quality of life or our residents are in turn significantly impacted.

The Town's creeks are an important component of the ecological network that provides many important benefits to the Town. Creeks and their buffers should be protected from the adverse effects of human disturbance.

■ Habitats of Rare, Threatened, and Endangered Species

The physical and biological features of certain areas are conducive to the maintenance, expansion, and long-term survival of rare, threatened, and endangered species. These features which include the structure and composition of the vegetation; the faunal community; soils; water chemistry and quality; and geologic, hydrologic, and microclimate factors that comprise habitats. Protection of these species, and locally rare species, is grounded in ethical and cultural reasons for preservation of all species, regardless of their known value to humans. This ethic is part of the current emphasis placed on conserving biological diversity. The key to protection of rare, threatened, and endangered species is protection of their natural habitats from human disruption.

Black Walnut Creek is the one known habitat of threatened and endangered species located within the boundaries of the Town (per the 1990 Comprehensive Plan). Development activities or disturbance of identified rare, threatened or endangered species are prohibited. See the list of endangered animal and plant species in Anne Arundel County at—https://dnr.maryland.gov/wildlife/Documents/AnneArundel_County_RTEs.pdf.

Deer Population Control in Highland Beach

A Practitioners' Guide, Community-Based Deer Management[15] focuses on what is considered to be the necessary collaboration of public wildlife management agencies, local governments, interest groups, nongovernmental organizations and residents of communities that are experiencing increasing numbers of deer in their communities. More people and more deer results in increasing intersections and interactions of the two species, sometimes with disastrous results. This is the case in Highland Beach today. Residents are increasingly concerned with physical and health safety issues, as car-deer collisions have increased, deer feeding results in damage to foliage planted by residents for beautification and environmental reasons, and, most particularly, the potential for contracting Lyme Disease due to tick bites from ticks that have infected the local deer population.

Highland Beach is not alone, locally or in many communities throughout the Mid Atlantic, that are experiencing deer population explosions that are unsustainable for the areas. This oftentimes results in inadequate food supplies for the increased number of deer, leading to sick deer susceptible to disease that may impact the human population. Our unique circumstances, as one of many communities in the Annapolis Neck area, is that no community can solve the overpopulation problem alone, particularly without the sustained, concerted, and coordinated efforts of all the adjoining communities where the deer herds migrate.

Utilities[16]

Water and Sewer Service

"The public water and wastewater service areas of the Annapolis Neck Small Planning Area are shown on Maps 22 and 23, respectively [not included here]. As can be seen from the service area maps, not all of the Annapolis Neck peninsula is served by public sewer and water. The County has no public water service on the Annapolis Neck Peninsula south of Church Creek. Some areas have both utilities while others have only one or neither. The County's adopted *Master Plan for Sewer and Water* is the policy document for the provision and timing of public sewer and water. This policy is based largely on the *General Development Plan* and Small Area Plans.

"Water service identified on the water master plan maps indicates future service for the South Haven, Hillsmere, Annapolis Roads, Bay Ridge, Highland Beach and Arundel on the Bay communities. There are no capital projects to extend water into these areas.[17]

"While these areas are planned for service in the future as supply mains are extended, water service may be extended into these areas through an acceptable community petition or to remedy a State declared public health problem such as contamination of wells or saltwater intrusion on an accelerated schedule."

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[15] A Practitioners' Guide, Community-Based Deer Management, Daniel J. Decker, Daniela B. Raik, And William F. Siemer, Human Dimensions Research Unit, Cornell University, Ithaca, NY, copy right 2004, Northeast Wildlife Damage Management Research and Outreach Cooperative

[16] Annapolis Neck Small Area Plan, Anne Arundel County, Maryland, March 2003, Page 121

[17] Annapolis Neck Small Area Plan, Anne Arundel County, Maryland, March 2003, Page 124

Sewer Service[18]

"The Annapolis Sewer Service Area (SSA) wastewater collection system is a composite of gravity sewers and force mains that convey wastewater to the Annapolis [Wastewater Reclamation Facility] WRF, located on Edgewood Road across from the Villages of Chesapeake Harbor. This facility has a current rated capacity of 10.0 MGD and has recently been upgraded to meet the State's most stringent biological nutrient reduction (BNR) requirements. Use of the WRF facility is shared between the City and the County, as are the costs of operating, maintaining and expanding the facility. By agreement, the County and the City, including the Naval Academy, are entitled to equal shares of its rated capacity. However, the City and County share the total costs at the WRF based on the percentage of the total annual flow actually used by each entity."

Internet Access

Broadband internet access was of course not addressed in the 1990 Plan; nor was this technology envisioned, not only to be created, but notably to proceed to have an unprecedented impact on our daily lives. Today, the town is serviced by two internet providers. Paradoxically, the fees associated with having a municipal license were sent to the City of Annapolis, until that error was discovered, corrected, and the fees redirected to the Town of Highland Beach.

With the continuing evolution of this technology, including the rapidly developing "smart home" services and WIFI capabilities, the town is well positioned to embrace additional technologies that will enhance the enjoyment of living in our Town.

Public Education[19]

"The Annapolis Neck Small Area is primarily served by the Annapolis Feeder System. A portion of the Small Area is also served by the South River Feeder System. Some of the communities are served by Central Middle and South River High however, the elementary-aged children in these communities would attend Mills-Parole Elementary. The Annapolis Feeder system is one of the few systems in the County with excess capacity. The 2001 Actual Enrollment for the Annapolis Feeder System was 5,385 students. The total State Rated Capacity for the Annapolis Feeder System is 8,009 seats. The South River Feeder System has a 2001 Actual Enrollment of 4,797 students and a State Rated Capacity of 5,233 seats. Table12 below shows the current and ten-year projected enrollments and the utilization percentages for each of the affected schools within these feeder systems. This information is based on the July 2002 *Educational Facilities Master Plan.*

"There are no schools in the Town of Highland Beach. The few school-age children from amongst the year-round households attend either public or private schools in the area. Noting the recent trend towards more seasonal residents, no significant change in expected in the next few years. Schools serving the Highland Beach/Annapolis Neck area include Hillsmere Elementary, serving students in grades K-6; Georgetown East Elementary, also serving students in grades K-6; Tyler Heights Elementary, serving grades K-6; Annapolis Junior High, serving students grades 7-9; and Annapolis Senior

[18] Annapolis Neck Small Area Plan, Anne Arundel County, Maryland, March 2003, Page 124
[19] Annapolis Neck Small Area Plan, Anne Arundel County, Maryland, March 2003, Page 129-130

High, serving students grades 10-12. The closest colleges are St. Johns College located in Annapolis, and Anne Arundel Community College, located in nearby Arnold, Maryland."

Police Service[20]

"There are four police districts that serve the needs of Anne Arundel County. The Southern District Police Station serves the Annapolis Neck Small Area and is located on MD 2 South at Virginia Avenue. A new district station facility is currently under construction at Stepney's Lane near Central Avenue in Edgewater, and the facility is expected to be completed in the spring of 2003. Presently, the Southern Police District boundary lines are expected to remain unchanged. A proposed new Central Police District is under consideration to serve the Annapolis Neck Small Area. In addition, the community of Bay Ridge currently has one officer providing police security. The City of Annapolis maintains its own police force.

"The Southern Police District is presently comprised of eight patrol beats providing coverage 24-hours per day and three overlap beats staffed for eight hours each to increase patrol staffing during peak workload hours. Of the beats which comprise the Southern Police District, the Annapolis Neck Small Area is served by three beats staffed 24-hours and two overlap beats staffed eight hours each, one during day watch and one during evening watch. Officers patrol these beats using patrol vehicles, however, some areas are also served by officers using bicycles. The bicycle program provides patrol officers with an opportunity to interact more closely with citizens and enhances the officer's familiarity with the communities they serve.

"Calls for service have been stable for the last four years. The response time for high priority calls (life threatening situations) is generally about four minutes Countywide. The County police have a good working relationship and work under a cooperative agreement with the City of Annapolis Police Department and the Maryland State Police. The County has a memorandum of understanding with the Maryland State Police that identifies primary areas of responsibility for the major thoroughfares within the Annapolis Neck Small Area."

Fire/EMS/Rescue Services[21]

"The City of Annapolis, Anne Arundel County and Naval Academy firefighters work cooperatively with one another. There is an Automatic Mutual Aid Agreement which means each jurisdiction will respond automatically to another's calls.

"At the present time, the only County facility in the Annapolis Neck Planning Area is located on Jennifer Road. Although the West Annapolis Station receives the highest percentage of emergency calls of any station in Anne Arundel County, it does not have Advanced Life Support (ALS) capability. In addition, the West Annapolis Station has inadequate sleeping and living quarters given the current level of staffing in the facility. The Maximus Fire Service Deployment Study (2002) recommends that this station be equipped with Advance Life Support (ALS) capability and that expansion of the sleeping

[20] Annapolis Neck Small Area Plan, Anne Arundel County, Maryland, March 2003, Page 132
[21] Annapolis Neck Small Area Plan, Anne Arundel County, Maryland, March 2003, Page 133-134

and living quarters at this station be made a priority if the current deployment is maintained.

"The City of Annapolis, by a verbal agreement with the County since 1979, receives payment from Anne Arundel County to provide first responder Fire/EMS/Rescue service to citizens on the Outer Annapolis Neck. County Stations in Riva and Woodland Beach provide second responder service to the Outer Annapolis Neck area. Only the Riva Station has advanced.

"Advanced Life Support (ALS) capability. The Maximus Study recommends that the Woodland Beach Station also be equipped with Advanced Life Support (ALS) capability.[22]

"The City serves its residents and County residents in the Annapolis Neck with three stations, one on Forest Drive, a second in Eastport, and a third on Taylor Avenue. The City's Comprehensive Plan indicates potential problems in the provision of Fire/EMSl Rescue service to the Outer Annapolis Neck, especially to additional new developments. The City's plan states that the Eastport fire station is inadequate, yet it serves as the first responder for the residents in the Outer Annapolis Neck."

Since the publication of the Annapolis Neck document, the construction and operation of Fire Station Number 8 has been accomplished. The Fire Department's Annapolis Neck Fire Station, located at the corner of Bay Ridge Road and Arundel on the Bay Road, provides first response action for the residents of the Annapolis Neck Peninsula. The 10,000 square feet facility was dedicated in June 2009. Firefighters at the facility are trained in fire, rescue, EMS, and dive operations.

Emergency Preparedness in Highland Beach

The Highland Beach Emergency Operations Plan provides a framework for use in performing emergency functions during a major emergency or disaster in the town. Emergencies include weather related emergencies such as flooding, windstorms and winter storms as well as technical or man-made emergencies such as power failures and aircraft crashes.

The Town Hall is available to provide temporary protection from the effects of a disaster or impending disaster, is suitable for a temporary (2 day) shelter and is equipped with power generator, AED, first aid supplies, and water.

The Mayor and Commissioners have the responsibility for assuring that the Town Hall is physically opened. The Town Hall will be opened on demand during power outages by contacting the Mayor or any Commissioner. The Town Hall will be opened when there is the need for shelter during an emergency. If an evacuation is ordered by the State or County the Town Hall will not be available for shelter. Items to be bought to the shelter include – medicines, comfort items (pillow, blanket), toiletries and baby supplies, clothing and food requirements. No pets* or weapons will be allowed.

Anne Arundel County has primary responsibility for the initial warning of evacuation. Notice of a recommended or ordered evacuation is accomplished by Anne Arundel County Police and Fire

[22] Text here to explain building of Fire Station no. 8 and HB fire water station at Bruce Ave. pier

Department personnel using vehicle sirens and loud speakers. The Emergency Alert System and NOAA Weather Radio Alerts are also used to notify citizens or areas to be evacuated, the location of shelters and the best routes to reach shelter locations.

Evacuation route is west on Douglass Avenue or west on Bay Avenue, left on Walnut Avenue, right on Bay Highlands Drive to Arundel on the Bay Road.

The Town is serviced by the Anne Arundel County Fire Department http://www.aacounty.org/fire. Law enforcement is handled by the Anne Arundel County Police Department http://www.aacounty.org/Police. The nearest hospital is the Anne Arundel Medical Center http://www.aahs.org.

Libraries[23]

> "The Annapolis Library on West Street is one of two area libraries in the Annapolis Neck Planning Area. Annapolis is the library system's primary source for business information. In December 1986, a 2,200 square foot addition was completed, creating a total of 20,900 square feet.
>
> "Eastport-Annapolis Neck Library is a 12,100 square foot branch library that opened in 1979. It is located on Hillsmere Drive. This library was recently remodeled to provide an information service desk in the central portion of the branch."

Since the publication of the Annapolis Neck Plan, the main public library for the Annapolis area has been completed. Named after the late House Speaker, the Michael E. Busch Annapolis Library opened in July 2020. The new 32,400 square feet building includes a vending café market space, tech zone and teen area, expanded children's area and outdoor play space, six collaboration spaces, two meeting rooms and more. The library is located on West Street in Annapolis.

Within the Town of Highland Beach, in 2016 the Terrell/Langston Library of African American History and Culture was established in the Highland Beach Town Hall. The library is named in honor of the Langston family, whose generous gift of historic books made creation of the library possible, and early Highland Beach resident Dr. Mary Church Terrell. Dr. Terrell was one of the first African American women to earn a college degree, and became known nationally as an activist for civil rights and women's suffrage. The library serves as a resource for researching the history of Highland Beach and, more broadly, the African American experience from the earliest days of this country.

Public Spaces[24]

> "The most significant public spaces on the Annapolis Neck [?] are located in downtown Annapolis (State House, Church Circle, Main Street, City Dock). Quiet Waters Park, the third largest in the County, is a significant public space that provides mostly passive recreation for local residents as well as for those who live elsewhere in the region. Another notable public space on the Neck is Thomas Point Park. These public spaces are used for a combination of recreation and leisure activities."

[23] Annapolis Neck Small Area Plan, Anne Arundel County, Maryland, March 2003, Page 136
[24] Annapolis Neck Small Area Plan, Anne Arundel County, Maryland, March 2003, Page 137

Land Use in Highland Beach

The developed parts of the Town are devoted entirely to residential use, with the exception of the waterfront park, town-owned buildings and other amenities, and the vacant lots still existing between homes. Although the Town ordinance provides for the issuance of licenses for retail businesses, this authority has not been exercised and there has been no such establishment of business in Highland Beach. All ancillary uses normally expected to serve a residential community are located within a five-mile drive in the greater Annapolis area.

Map 1 and Table 3 show how land is used in Highland Beach. The five categories of land use are residential, streets, parks and open space, wetlands, and vacant land. The developed portions of the town, including parks and open space areas, constitute nearly 90 percent of the total Highland Beach land area; however, not all of the remaining undeveloped areas are suited for development, most particularly the tidal wetland areas in the Town.

Table 3: 2020 Land Use Distribution in Highland Beach[25]

Land Use Classification	Approximate Acres		Percent of Total Acreage	
	2020	(1990)	2020	(1990)
Residential	30.31	(24.4)	77.12	(54)
Town Buildings	0.55	(0)	1.40	(0)
Streets	1.13	(1.13)	2.88	(16)
Parks, Town Buildings, & Open Space	2.83	(2.27)	7.20	(5)
Wetlands	2.3	(2.3)	5.85	(5)
Vacant	2.18	(9.2)	5.55	(20)
	39.30	(39.30)	100	(100)

[25] The table is updated from the 1990 table that cited the source of data as the Land Use Surveys, Department of State Planning, October, 1988 and April, 1989. Acres reflected in the 2020 columns incorporated changes due to the building of 21 new homes on previously vacant lots from 1990 to 2020, inclusive, and for town property acquired after the year 1990. Ten vacant lots remain in the Town.

Figure 1: Zoning Map

Since the early 1970s, Highland Beach has operated with some building regulations controlling house setbacks from property lines and height of residential structures. Over time, those regulations proved to be inadequate. Unreasonable variances were granted and attempts were made by lot owners to build on undersized lots. Furthermore, as a result of a signed agreement (technically applying to the floodplain portion of the Town only) between Anne Arundel County and the Town of Highland Beach in November, 1985, Anne Arundel County had maintained exclusive control over the issuance of building permits and the granting of zoning variances. All use of land as well as density of development were determined and managed by the Anne Arundel County Office of Planning and Zoning from that time, until April 15, 1989, when the Town Commissioners of Highland Beach enacted and adopted a Highland Beach Interim Zoning Ordinance.

This Interim Zoning Ordinance immediately superseded County zoning in the Town, pending the adoption of a permanent zoning ordinance that was subsequently adopted in October 1990, and amended in August 1991 and February 2003. By virtue of the Interim Zoning Ordinance, no structure or building unit could be erected, altered, reconstructed or occupied unless in conformity with the Ordinance. This did not mean, however, that existing vacant lots could not be built upon if their dimensions were incompatible with the newly prescribed lot size standard of 15,000 square feet, i.e., if existing lots were grandfathered in. These lots range in size from under 4,000 square feet to over 15,000 square feet. They are located in both the original Highland Beach subdivision as well as within the Dr. Washington tract annexed by the Town.

Of the then already developed lots in Highland Beach, more than half were 7,500 square feet in size with dimensions of 150 feet in depth by 50 feet in width. These lots are located entirely within the original part of Highland Beach. Other lots are of varying dimensions. Many of the smaller size lots were combined years ago with adjoining lots to form double lots, and triple lots, where homes now sit. Building one home on multiple lots was done voluntarily and legally by summer occupants in order to preserve spacing and atmosphere. Not all of these lots are now in single ownership. The use of some of these adjoining lots is shared by unwritten agreements, while the County tax records list the individual lot owners.

The unincorporated residential communities contiguous to Highland Beach, namely Bay Ridge, Bay Highlands, Arundel on the Bay, Oyster Harbor, and the single street community of Venice Beach, have each been designated in the Anne Arundel County Land Use Plan of 1986 as appropriate for low density housing. The Annapolis Neck Rezoning of 1985, in consonance with the 1986 county General Development Plan, earmarked these communities for the same low-density development. Nevertheless, there was/is increasing pressure for development on the undeveloped portions of the Town. The installation of public sewers in the 1990s significantly contributed to development pressures. Residential building activity in the adjoining community of Bay Highlands was, in the 1990s, proceeding rapidly and the impacts created by this trend had already begun to be felt by the residents of Highland Beach.

Today, with only two acres of vacant residentially zoned land remaining in Highland Beach, there remains a much smaller amount of developable land in Highland Beach, compared to roughly nine acres available in 1990. The number of homes that may ultimately be built and the responsibility for administering the permanent land use regulation—which the Board of Commissioners adopted in October 1990—was determined by joint decision and agreement between the Board of Commissioners and Anne Arundel County. Table 4 lists zoning requirements for the County and the Town.

Table 4: Housing Regulations

	Anne Arundel County Standard Zoning District Regulations	Highland Beach Building Regulations
Minimum lot size (with sewer or water service)	15,000 square feet	15,000 square feet
Minimum lot width at street	30 feet	100 feet
Minimum lot depth		150
Minimum structural setbacks:		
-front yard	30 feet	30 feet
-side yard	7 feet and 20 feet combined	7 feet and 20 feet combined
-rear yard	25 feet	25 feet
Maximum building height	35 feet	35 feet or 2 ½ stories, whichever is less

Housing in Highland Beach

Since the 1990 plan, 21 homes have been added to the homes within the Town borders of Highland Beach, bringing the net total to 77 homes. These homes are exclusively single-family detached homes. Full time residents' homes, both homeowners and renters, occupy 37 homes, a decrease from 41 full time residents' homes in 1990. Today there are 40 homes occupied by part-time residents, a substantial increase from 22 homes in 1990. It should be noted that the total number of homes today reflect new construction on vacant lots, total replacement of older cottages with newly constructed homes, and substantial numbers of existing homes given extensive renovations.

Through this process of new building and renovations of existing homes, the physical condition of the vast majority of the housing stock is excellent, although as in most communities, some structures may need minor improvements. It is readily apparent that the residents of Highland Beach, both permanent and seasonal alike, continue to demonstrate considerable pride in the appearance and upkeep of their homes and their neighborhood.

Of particular note is the conversion of two former homes to Town-owned facilities. The summer home of the great abolitionist Frederick Douglass, and home to many of his descendants, has been converted to the Frederick Douglass Museum and Cultural Center. The Caretaker's Cottage, at the entrance of the Town, has been replaced with a new and expanded Town Hall, architecturally designed to reflect the historic character of the Town and the cottage that it replaced.

It is the desire of the community to control housing density and to maintain the architectural character already established in Highland Beach.

Community Facilities in Highland Beach

Although community facilities in Highland Beach have historically, until recently, been very modest, they have served the year-round and seasonal population well for many decades. These facilities are well maintained and the community takes pride in providing resources with a modest budget.

The street pattern of Highland Beach is a grid with only one route of vehicular entry, via Bay Highlands Drive. There are few curbs or sidewalks in the Town. The paved roads are generally in good repair, with annual maintenance following winter weathering. Other unimproved roads have recently been improved by paving, to serve new homes along street rights-of-way.

There is excellent street lighting in the Town. All streetlights have recently been upgraded to L.E.D. lamps, affording bright illumination after dusk and energy savings.

As noted, the entire town is served by public sewer facilities, although no public water is offered. Each existing home receives its water via a private, individual well. There is the full expectation that there is adequate public water to serve the Town, as well as sufficient, decent quality groundwater to accommodate current residents and the limited future development expansion of Highland Beach when the few buildable lots available for building have homes built.

According to the Annapolis Neck Small Area Plan[26], “Water service identified on the water master plan maps indicates future service for the South Haven, Hillsmere, Annapolis Roads, Bay Ridge, Highland Beach and Arundel on the Bay communities. There are no capital projects to extend water into these areas. While these areas are planned for service in the future as supply mains are extended, water service may be extended into these areas through an acceptable community petition or to remedy a State declared public health problem such as contamination of wells or saltwater intrusion on an accelerated schedule. “

■ Frederick Douglass Museum and Cultural Center

The Frederick Douglass Museum and Cultural Center housed in "Twin Oaks"—the summer cottage built in 1895 for Frederick Douglass—was purchased and restored in the 1980s. In 1995 the State of Maryland and Anne Arundel County acquired the property and deeded it to the Town of Highland Beach as a memorial to Frederick Douglass, one of Maryland's most famous sons. Its mission is to promote a greater understanding of the life and work of Frederick Douglass and his family; to identify, document, and preserve the social and cultural histories of Highland Beach and Venice Beach; and to make these resources available for information and research. Docents, under the direction of the Museum Director, conduct tours and arrange exhibits related to the history of "The Beach."

Completed in the fall of 2013,16 solar panels—originally installed on the Town Hall—were re-purposed on an auxiliary structure behind the Frederick Douglass Museum and Cultural Center. This solar array produces more electricity annually then is required to operate the facility, making the facility also a “net zero energy” building.

[26] Annapolis Neck Small Area Plan, Anne Arundel County, Maryland, March 2003, Page 124

■ Highland Beach Town Hall

The Highland Beach Town Hall was completed in the Spring of 2006, and is certified LEED Platinum by the U.S. Green Building Council, the highest rating possible. The facility is a state-of-the-art, "green building" that exemplifies the commitment of Highland Beach citizens to environmental protection and restoration.

The Town Hall is a replacement for a small, delipidated and unsafe cottage that had initially been utilized as the Caretaker's Cottage, and later as the meeting location for several years by the Board of Commissioners of Highland Beach. The facility consists of five main rooms on two floors. Every aspect of construction was intended to be green, from photovoltaics for on-grid production of energy, the geothermal four zone HVAC system, soy-based blown-in super insulation, to the materials used for construction, to the green roof, daylighting, compact florescent lighting, ambient light and motion detection light switches, energy star appliances, high performing windows, and bio-based fuel for part of the energy requirements for heating.

Town Hall stormwater mitigation features include a green roof, three rain gardens, rain barrels, and permeable pavers. Low-growing sedums cover two-thirds of the Town Hall roof and can absorb up to 99% of a 1-inch rainfall, as well as provide increased insulation and energy efficiency. Rain barrels mitigate runoff on the remaining one-third of the roof; and half of this section of the roof contains 30 solar panels that produce more electricity annually then is required to operate the facility, making the building a "net zero energy" building.

Three rain gardens—located on town and adjoining neighbors' properties—surround the Town Hall. These highly visible rain gardens include signage to increase public awareness of the value of rain gardens, specifically, their ability to slow down and filter runoff, allow water to cool and better infiltrate and recharge groundwater, and provide increased habitat for wildlife.

The Town Hall also houses the Terrell/Langston Library and the Museum Annex. The Annex was added via a renovation of the second floor of the town hall to accommodate overflow exhibits from the Douglass Museum, as well as to serve as an additional gathering place for events.

■ Terrell/Langston Library of African American History & Culture

In 2015, an office in the Town Hall was repurposed to house a growing collection of historical books and documents, donated by Mr. and Mrs. Ray and Jean Langston. Designated by the Board of Commissioners as the Terrell/ Langston Library of African American History and Culture—honoring the family's countless contributions—the new library provides access to the collection for residents and guests, including space to peruse the collection in a comfortable setting. The library is a great resource for students, scholars, and interested citizens to read about African American History and Culture.

Overview of Highland Beach Stormwater Mitigation and Restoration Projects, Open Spaces, and Recreational Facilities

The Highland Beach projects are at the leading edge of demonstrations of land management and building green that protects the Bay, an important consideration in view of the population and concomitant construction increases that continue in the Bay watershed. The various projects—installed since 2003—serve as model demonstrations of how to mitigate the potential adverse effects of such growth, with local government in the lead. These projects engage the community of Highland Beach, including the elected officials, as active participants and leaders in modeling stewardship of natural resources. The projects engage citizens via hands-on rain garden and living shoreline installation and maintenance, and citizens and visitors via educational sessions, presentations, tours, educational material, and a "green" Town Hall where people can experience directly the value of resource stewardship. Our intent also is to raise public awareness and personal involvement on behalf of the Bay, and to motivate the behavior of individuals to implement restoration projects, e.g., planting native trees, shrubs, and herbaceous perennials, and installing rain gardens and rain barrels on individual properties. We consider this to be a unique opportunity for a historically African American community to further highlight and take advantage of our cultural and historical ties to the Bay, going back as far as our establishment in 1893.

In addition to **three rain gardens installed at the Town Hall and on adjoining neighbors' properties**, four more have been installed on public land throughout the Town. The rain gardens greatly reduce polluted stormwater runoff from entering Oyster Creek, Black Walnut Creek, and the Chesapeake Bay, which surround Highland Beach. Additionally, we have installed a living shoreline and a shoreline buffer planting/living shoreline on the Chesapeake Bay beachfront.

Notably, the rain gardens—both on- and off-site—rain barrels, permeable pavers, and the green roof were required to receive approval to build the Town Hall on a lot with limited permeable surface. The approval of this special government-to-government agreement enabled the construction of the Town Hall.

■ Lake Avenue Rain Garden

The first public rain garden in the Town was initially installed by Highland Beach volunteers in the fall of 2003 and spring of 2004. Located along the northern end of Lake Avenue where it meets Black Walnut Creek, the Lake Avenue Rain Garden adjoins the 100-foot buffer, along a shallow slope of undeveloped land that meets Black Walnut Creek. The rain garden helps to mitigate the large volume of stormwater runoff that flows down Lake Avenue and is a great improvement over previous conditions. This location was chosen by Mayor Crystal Chissell as the first site for a rain garden due to the great need to address the adverse impacts of large volumes of stormwater runoff down this sloped undeveloped area. Notably, this project was required by the Critical Area Commission as an off-site location to mitigate stormwater runoff at the Town Hall, and to directly address runoff down Lake Avenue.

The rain garden is approximately 100 feet by 20 feet and includes five terraced planting beds where water ponds and slowly soaks into the ground. It has been continually monitored and maintained since the initial installation.

Improvements, made over several years, have been very effective in capturing and filtering a tremendous amount of stormwater runoff, and preventing runoff from going to Black Walnut Creek. Notably, the runoff from the uphill area of Lake Avenue increases each time a new house is built, which increases impervious surface (since 2001, seven houses along Lake Avenue have been built).

- **Beachfront Rain Garden**

The Beachfront rain garden, installed in 2004, is located along the corner of Wayman and Bay Avenues across from the Frederick Douglass Museum. Excess soil that was excavated to create the rain garden was used to create an adjoining berm planted with Switch Grass. A bench was placed in between the berm and rain garden for enhanced enjoyment of the garden. The rain garden is an informal planting arrangement including Switch Grass and Seaside Goldenrod.

Several Highland Beach volunteers installed the rain garden; and a kiosk was also installed to provide information on rain gardens. Additional fine-tuning took place in 2005.

- **Park Rain Garden**

The Park Rain Garden, also installed in 2004, is located across from the beachfront, along the corner of Douglass and Wayman Avenues. The rain garden is an informal moist meadow which includes a variety of native grasses and herbaceous perennials which have thrived since the initial installation.

Several Highland Beach volunteers installed the rain garden; and a kiosk was also installed to provide information on rain gardens. Additional fine-tuning took place in 2005.

- **Living Shoreline Project, 2004**

Highland Beach is fortunate to have 600 feet of beachfront along the Chesapeake Bay. Located on the Bay beachfront, the Living Shoreline, installed in 2004, is a demonstration project showing a beachfront habitat/stabilization technique to mitigate damage caused by Hurricane Isabel and to provide wildlife habitat. With assistance from the Department of Natural Resources, Highland Beach created a stabilized sand bank (foredune) to protect the beachfront integrity and for environmental education opportunities. The project—which was initiated by the Town and not a requirement of any process—was approved by the Critical Area Commission.

Site preparation for the beachfront Living Shoreline project involved shaping the sand, then installing biologs and biomesh (made from coconut fiber). Next, native shoreline grasses were planted. The biologs and biomesh materials (which decomposed over time) provided stability in the short-run. This aided the plants in becoming established so that the plants could provide long-term stability. The stabilization/habitat enhancement technique helps the beachfront retain sand gained from Hurricane Isabel and helps to mitigate future possible damage from storms, while creating wildlife habitat.

Most of the Living Shoreline installation took place September through December 2004; and additional fine-tuning took place in the spring of 2005. Highland Beach received tremendous

assistance with the installation from many dedicated volunteers. From our small communities, over two dozen Highland Beach and Venice Beach volunteers made all the difference by planting the Living Shoreline. Additionally, we had a great deal of assistance from the MD Department of Natural Resources personnel, the Maryland Conservation Corps, and others. Altogether, a total of over three dozen volunteers participated in this project.

- **Beachfront Stone Revetment/Living Shoreline Hybrid Project, 2013**

A stone revetment and native plants were installed in the fall of 2013 to help stabilize the Chesapeake Bay beachfront and protect the nearby road.

Initially, in 2012, dozens of Switch Grasses and Seaside Goldenrods were planted to help stabilize the beachfront area around the Town pier. This was not part of any required mitigation by the County. However, we soon realized that in order to stabilize the area, a more comprehensive approach would be needed. Permits were submitted and approved and the town retained the services of a contractor to install a stone revetment and reconfigure the landward section of the pier to accommodate the stone revetment and to improve its handicap accessibility. Numerous native herbaceous perennials were installed directly behind the stones, and additional native shrubs and trees were added to the shoreline buffer to help stabilize the area.

- **Walnut Drive Forested Lot**

The acquisition via donation of a large triangular lot, almost 17,000 square feet of waterfront property on Black Walnut Creek, provides an important opportunity for environmental protection of our waterways, by preserving forested open space, which is vital to controlling runoff to the Black Walnut Creek and to the Chesapeake Bay. By preserving this unique forested land from development and its continued use as open space, the steep terrain provides unique habitat and ecosystem services to the area.

- **RainScaping Park**

In the fall of 2015, a unique environmental project was the installation of the Highland Beach RainScaping Park (which was transformed 180 degrees from what was a former dump site). The RainScaping Park includes all native species trees and shrubs, a rain garden, a large circular teak bench surrounding a River Birch tree and set on pervious pavers, additional teak benches for expanded seating opportunities, a compost demonstration area, two solar street lights for illumination, and educational signage. Parking at the front of the site will accommodate ten vehicles to provide overflow parking for town hall events as well as for guests of Town residents.

The RainScaping Park is a place to relax, meditate, recreate and enjoy. As well, this pocket park is a place to learn about the value of native plants, rain gardens, and other RainScaping practices—Beautiful Solutions to Water Pollution!

■ **Wayman Avenue Pier**

The Wayman Avenue Pier has historically been a very desirable place for fishing, walking over the water to enjoy the scenery of the Chesapeake Bay, and more generally a place for additional rest and relaxation. The current pier was rebuilt in 2004/2005, after the former pier was severely damaged by Hurricane Isabel. In addition to replacing the destroyed pier, the pier was constructed to be handicap accessible. To protect the new pier and shoreline, a stone revetment was added to the area, as well as the installation of native grasses. The project was funded by a grant from the Federal Emergency Management Agency.

■ **Bruce Avenue Pier, Kayak Launch, and Kayak Stand**

A second favorite fishing spot is the Bruce Avenue Pier, also known as the small pier, that has served residents as a place to fish and crab. The recent addition of a floating dock and kayak launch, along with a kayak stand constructed and donated to the town by a resident Boy Scout, provides additional recreational opportunities. These facilities continue to be well utilized.

■ **Playground**

In 1998, the playground that had served residents to that time was replaced by the existing structure, tapping funds available to municipalities from the MD Department of Natural Resources' Project Open Space. Current plans are to refurbish the playground.

Section 2: External Factors Impacting Life in Highland Beach

Resiliency[27]

"The State of Maryland Smart, Green and Growing Act of 2009 modernized the State's eight existing planning visions with 12 visions that reflect the State's aspiration to develop and implement sound growth and development policy. Eight of the twelve visions set forth in the Act speak directly to the preservation of natural resources and the environment:

1. Quality of Life and Sustainability: A high quality of life is achieved through universal stewardship of the land, water, and air resulting in sustainable communities and protection of the environment.
2. Community Design: Compact, mixed-use, walkable design consistent with existing community character and located near available or planned transit options is encouraged to ensure efficient use of land and transportation resources and preservation and enhancement of natural systems, open spaces, recreational areas, and historical, cultural, and archeological resources.
3. Infrastructure: Growth areas have the water resources and infrastructure to accommodate population and business expansion in an orderly, efficient, and environmentally sustainable manner.
4. Economic Development: Economic development and natural resource-based businesses that promote employment opportunities for all income levels within the capacity of the State's natural resources, public services, and public facilities are encouraged.
5. Environmental Protection: Land and water resources, including the Chesapeake and coastal bays, are carefully managed to restore and maintain healthy air and water, natural systems, and living resources.
6. Resource Conservation: Waterways, forests, agricultural areas, open space, natural systems, and scenic areas are conserved.
7. Stewardship: Government, business entities, and residents are responsible for the creation of sustainable communities by collaborating to balance efficient growth with resource protection.
8. Implementation: Strategies, policies, programs, and funding for growth and development, resource conservation, infrastructure, and transportation."

Climate Change/Global Warming

"Given its location and very large extent of coastline, Anne Arundel County is keenly aware of the implications of climate change. The County's focus has been and will continue to be sea level rise caused by climate change. Sea level rise is discussed in some detail in the subsection immediately below this one. The County does not presently have any resources dedicated specifically to climate change issues, but does have a range of policies and activities that are tangentially related.

[27] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 3-36

"According to the Maryland Commission on Climate Change 2017 Annual Report, Maryland is facing consequences of climate change including, but not limited to:

1. Changes expected to negatively impact coastal, bay, and inland water quality parameters and potentially change the viable uses of surface water, such as irrigation, recreation, or human consumption
2. More frequent disruptions to urban and coastal infrastructure in Maryland caused by extreme weather events and sea level rise that may indirectly impact the economy of the region by restricting the flow of goods and affecting days worked
3. Common stressors experienced among ecosystems, agriculture, fisheries and forestry, such as those caused by general changes in temperature and precipitation regimes; increased extreme weather events; and increased pressures from weeds, diseases and pests
4. Changes in the severity, frequency, or distribution of human health issues which are affected either directly or indirectly by climate, including impacts on food and water supply, air quality, and extreme weather events; and
5. A higher probability of negative outcomes for individuals and communities inherently more sensitive or with a reduced adaptive capacity for responding to the impacts of climate change.

"The County has various specific actions in Section 8 of this mitigation plan that are related to mitigating the effects of climate change, although they are categorized by natural hazard, not under the general heading of climate change.

"Additionally, the Association of Climate Change Officers (ACCO) recently partnered with the State of Maryland to form the Maryland Climate Leadership Academy. The Academy's purpose is to advance the capacity of state and local government agencies, businesses, and other organizations to develop and implement sound climate change initiatives in order to ensure current and future public health, security and economic prosperity. A number of staff from the Office of Planning and Zoning participated in the Academy in 2019, and additional County staff will be participating in 2020. Two staff also completed the requirements to become a Certified Climate Change Professional through ACCO. The County's goal is for all staff to be well educated and informed of the science and the public policy implications of climate change."

Sea Level Rise

"Anne Arundel County is acutely aware of the implications of sea level rise on the jurisdiction, and has been working for some years on various plans and efforts to fully understand its potential effects, and to develop strategies for addressing it comprehensively. One important basis of the County's efforts is the Sea Level Rise Strategic Plan (November 2011, Anne Arundel County Office of Planning and Zoning; prepared for the Maryland Chesapeake & Coastal Program, Coastal Communities Project). This section of the HMP is intended to summarize this document to provide context for the County's ongoing and emerging efforts to address climate change and sea level rise. Page 1 of the Strategic Plan states:

"Historical records indicate a relative sea level rise occurring along Maryland's coastal areas at a rate of one foot per 100 years, and it is predicted that this rate will continue

into the foreseeable future or possibly accelerate due to a variety of factors. The County is therefore susceptible to the effects of climate change and sea level rise and has a need to better understand the scientific findings to date and their implications for the County. The County's *General Development Plan*, adopted in 2009, includes recommendations to develop a strategic plan for a phased implementation response to avoid or reduce sea level rise impacts to property, infrastructure, and other resources, and to establish policies to guide the relocation, extension or expansion of public infrastructure in at-risk areas.

"To this end, the County partnered with the Maryland Department of Natural Resources (DNR) through the Coastal Communities Initiative Program to conduct a study of potential sea level rise impacts and develop adaptation strategies. The project included four major components: 1) a vulnerability assessment to identify potential areas impacted by sea level rise and develop inventories of resources at risk; 2) development of a framework for interagency strategic planning; 3) development of a strategic plan; and 4) public outreach and education to promote public awareness of sea level rise issues.

"The Anne Arundel County Climate Resilience Action Strategy (2019 and on-going) is the product of that study. The Plan "summarizes the State's recent research and planning efforts related to sea level rise; discusses the key findings from the vulnerability assessment and other planning analysis; identifies the major planning issues for Anne Arundel County as related to sea level rise; and recommends future actions to protect resources and minimize impacts.

"Using the range of sea level rise projections recommended in the State's Climate Action Plan, the County undertook a study to gain a better understanding of its vulnerability to sea level rise in terms of both the locations that may be impacted and the resources that may be threatened. The results were published in 2010 in the Anne Arundel County Sea Level Rise Phase I Report: Vulnerability Assessment."

"The Maryland Department of Natural Resources (DNR) assisted the County with technical modeling work based on LiDAR-based topographic data and the State's official shoreline data. The modeling determined land areas that may become inundated with water under various sea level projections. The model projected areas of inundation for two ranges of potential sea level rise: 0-2' and 0-5'. The modeling provides a partial basis for further planning and policy decisions related to the effects of sea level rise, including not only where these effects are likely to occur, but various metrics and data, as shown in the series of tables below. The tables in this Section were selected because of their specific relation to natural hazard risk, and eventual full incorporation into the HMP.

"In the context of this HMP, it should be clearly understood that this information was developed about eight years ago, and various of the inputs have likely changed in the interim. Moreover, inundation projections are necessarily based on predictions about the degree of sea level rise, and this is by definition uncertain, and thus so are the results. The series of tables that follow should be understood in this context, and regarded only as a partial starting point for further

development of policies and practices related to coastal flooding. Note that sections used verbatim from the Strategic Plan are indicated in fully-justified text sections below. The first table simply shows the land area inundated in the two inundation depth ranges. These values appear to be relatively small, given the extensive shoreline in the County."

Hazards

Hazard Identification[28]

"In accordance with IFR requirements, the Hazard Mitigation Planning Committee (HMPC) completed an assessment and ranking of the natural hazards that have the potential to affect the County. Ranking natural hazards allows the County to focus resources on the natural hazards of greatest concern while mapping identifies high risk areas and vulnerable populations. The coupling of these two practices enables the County to integrate hazard mitigation goals and strategies into local comprehensive plans as well as the ability to adopt local ordinances aimed at reducing potential losses to life, property, critical facilities and infrastructure, and other structures in high risk areas and with vulnerable populations. The process further identifies the areas in need and will assist the County to prioritize mitigation strategies, actions, and initiatives that will help to guide future land use, development, and comprehensive planning practices in the County. The following are the resources used to identify and rank the natural hazards which affect the County: the 2016 Maryland Hazard Mitigation Plan, the National Climatic Data Center, Flood Insurance Rate Maps, and the Anne Arundel County Flood Risk Report dated 12/31/2019. The following subsection provides a description of the type, location, and extent of all natural hazards that can affect the County. Hazard identification affecting the County was largely based on past events. Section 7 (Risk Assessment) includes detailed information about past and potential losses (risk) for the natural hazards having the highest potential to affect the County.

Natural Hazards Affecting the County[29]

"According to the National Oceanic Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC) database, Anne Arundel County experienced 1,010 natural hazard events that affected the County from 1950 to 2017. The 1,010 natural hazard events resulted in 9 deaths and 98 injuries. The County divided the 1,010 natural hazard events into 12 natural hazard categories. The frequency, location, extent, and future probability of the 12 natural hazard categories are summarized in Table 6.2-1. The probability for determining future natural hazard events was made based on the historical data. The future probability is defined as follows:

- "Highly likely" is the probability that an event is likely to occur every 1-10 years.
- "Likely" is the probability that an event is likely to occur every 10-50 years.
- "Unlikely" is the probability that an event is likely to occur at intervals greater than 50 years.

[28] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-71
[29] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-72

"More information on natural hazard categories and their potential to affect the community is provided in Section 6.3. The history of natural hazards affecting the County and data provided in Table 5 was obtained based on a February 2020 query of the NCDC database, since previous data from prior versions of the 2018 HMP update could not be duplicated. (Source: www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms).

Table 5: History of Natural Hazard Events Affecting the County 1950-2018

(NOAA National Climatic Data Center database)

Natural Hazard	Previous Occurrence	Deaths	Injuries	Location	Future Probability
Riverine Flooding	131	2		Floodplain	Highly likely
Coastal Flooding	26			Coastal Floodplain	Highly likely
Dam Failure/Release				Dam EAP	unlikely
Hurricane, Tropical Storm, and Nor'easter	3		1	County	likely
Drought	12			County	likely
Earthquakes				County	likely
Extreme Heat	48	1	61	County	likely
Severe Thunderstorm and hailstorm	513	4	29	County	Highly likely
Severe Winter Storm	196	1	1	County	Highly likely
Tornado	23			County	Highly likely
Wildfire, urban interface fire	1		2	County	unlikely
Erosion	57	1	4	County	Highly likely

"Various federal agencies maintain records of property losses and damages associated with natural hazards. Unfortunately, no single source offers a definitive accounting of such losses, many of which are covered by private insurers. The Federal Emergency Management Agency (FEMA) maintains records on federal expenditures associated with declared major disasters. The U.S. Army Corps of Engineers and the Natural Resources Conservation Service collect data on losses during the course of some of their ongoing projects and studies. Additionally, NOAA and the NCDC collect and maintain data about natural hazards in summary format. The data includes occurrences, dates, injuries, deaths, and costs.

"In the absence of definitive data on some of the natural hazards that may occur in the County, illustrative examples are useful. Table 6.2-1 provides brief descriptions

of particularly significant natural hazard events occurring in Anne Arundel County's recent history. This list is not meant to capture every event that has affected the area, rather lists examples of the types of events that have occurred in the County in the past.

"In 1965, the federal government began to maintain records of events deemed significant enough to warrant declaration of a major disaster by the U.S. President. Presidential Disaster Declarations are made at the County level. Anne Arundel County has received eleven Presidential Disaster Declarations since 1953. Some of the more significant Presidential Disaster declarations include Tropical Storm Agnes (DR-341) in 1972, Hurricane Floyd (DR-1303) in 1999, Hurricane Isabel (DR-1492) in 2003, and Hurricane Sandy in 2012. Table 6.2-2 represents actual natural hazard events affecting the County which resulted in a declaration of a local State of emergency. Information on the extent of the event in terms of strength or magnitude is provided in the description section of Table 6. Table 6 also includes the number of deaths and injuries associated with each historical natural hazard event.

Table 6: History of Natural Hazards and Declared Major Disasters impacting Anne Arundel County, Maryland

(FEMA, NOAA National Climatic Data Center database)

Disaster (DR) & Date	NATURAL HAZARD	Description	Deaths	Injuries
August 17, 1971 (DR-309)	Severe storms & flooding	No detailed open-source information is presently available.	0	0
June 26, 1972 (DR-341)	Tropical Storm Agnes	The entire State of Maryland was declared a disaster area. In Anne Arundel County, structures were flooded along Old Annapolis Road, in North Pumphery, and in a trailer court on Belle Grove Road. It was estimated that Agnes exceeded a 100-year flood.	0	0
October 4, 1975 (DR-489)	Heavy rains & flooding	No detailed open-source information presently available.	0	0
September 14, 1979 (DR-601)	Severe storms, tornadoes & flooding	No detailed open-source information presently available.	0	0
March 16, 1994 (DR-1016)	Severe winter storm	No detailed open-source information presently available.	0	0
January 11, 1996 (DR-1081)	Blizzard of 1996	The Blizzard of 1996 is ranked by some winter weather experts as the second-worst snowstorm ever to strike the Northeast in modern times. The Nor'easter buried portions of Maryland under three to four feet of snow. Baltimore recorded 26.6 inches over three days at BWI Marshall Airport. Snowfall totals in Anne Arundel County ranged from 15 to 18 inches.	0	0

Description of the Flood Hazard[30]

"Flooding is defined as the accumulation of water within a water body and the overflow of excess water onto adjacent floodplain lands. The floodplain is the land adjoining the channel of a river, stream, ocean, lake, or other watercourse or water body that is susceptible to flooding.

"Hundreds of floods occur each year in the United States, including overbank flooding of rivers and streams and shoreline inundation along lakes and coasts. Flooding typically results from large-scale weather systems generating prolonged rainfall. Flooding in Anne Arundel County can be the result of the following weather events: hurricanes, thunderstorms (convectional and frontal), storm surge and winter storms. Flooding from hurricanes is covered in Section 6.3.2 and flooding from storm surge is covered in Section 6.3.3. [not included here]."

National Flood Insurance Program Participation[31]

"Anne Arundel County has been a participant in the National Flood Insurance Program since May 1983. The County is Community Number 240008B. The initial Flood Hazard Boundary map was adopted in November 1974, and the initial Flood Insurance Rate Map was adopted in May 1983. The current effective FIRM is dated February 18, 2015. The Town of Highland Beach also participates in the NFIP (Community Number 240161B). The Town joined the program in November 1981. Its current effective FIRM is dated February 18, 2015.

"Appendix A includes a detailed discussion of National Flood Insurance Claims history, including Repetitive Loss Properties, as required by FEMA mitigation planning guidance. The information has been moved to the appendix for the 2018 HMP update in order to maintain the structure of the present section."

Flood Hazards in Highland Beach

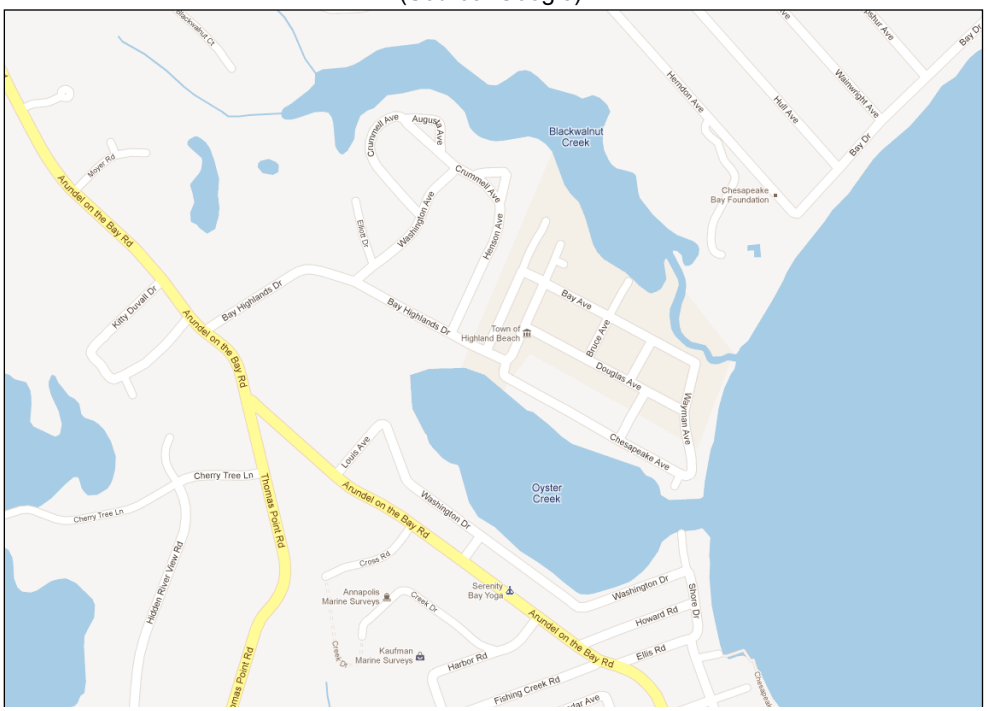
"As its name indicates, the Town of Highland Beach is an incorporated jurisdiction within Anne Arundel County. It was founded in 1893, and presently comprises about one-tenth of a square mile of land area, and is home to a population of 96 (2010 U.S. Census). There are 74 housing units in the area, and according to the census, 46 are presently occupied and used for residences. Figure 2 shows the location of the Town on the eastern side of the County, south of the City of Annapolis. The town is surrounded on three sides by water – the Chesapeake Bay on the east, and Blackwalnut Creek and Oyster Creek on the north and south sides, respectively."

In 2020, the town renewed its agreement with Anne Arundel County to be included in the Anne Arundel County Hazard Mitigation Plan, with enforcement by the County. This inclusion ensures that town residents may participate in the Flood Hazard Insurance Program, and that the Town is eligible for FEMA grant funding in the event of a catastrophic event.

[30] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-77
[31] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6=83

***Figure 2: Town of Highland Beach Location Map*[32]**

(Source: Google)



"Because of its location on the western side of the Chesapeake Bay, the Town is potentially subject to the effects of flooding and storm surge. The current effective Flood Insurance Rate Map (FIRM) is dated February 18, 2015, and shows that part of the Town is in the floodplain, either in designated *A* zones, or in *V* zones, as shown in the figure below. It appears from the FIRM and a review of Google Earth aerials that there are a few structures in the 100-year floodplain in the northeast quadrant of the Town, north of Bay Street and east of Walnut Street.

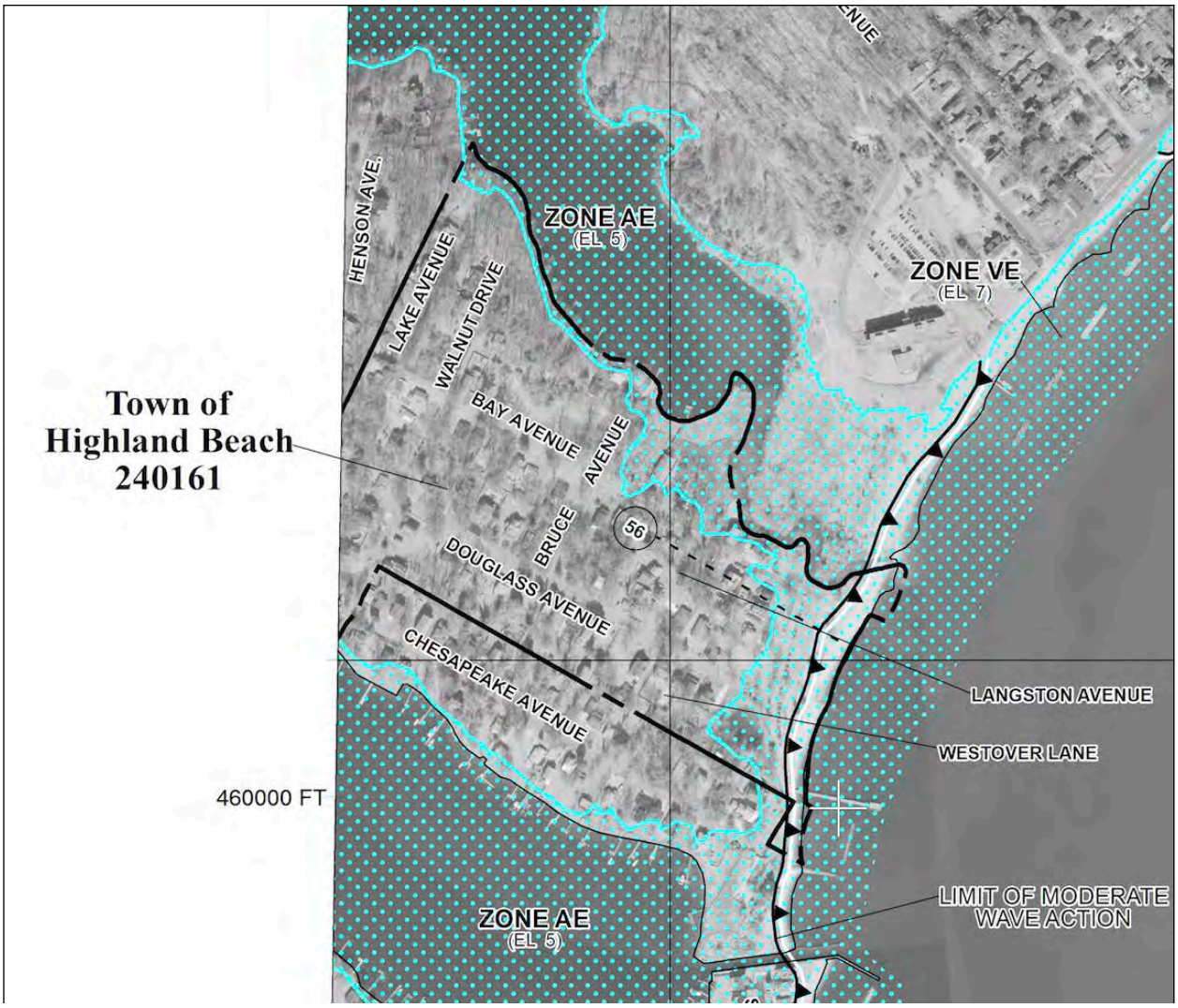
Nuisance Flooding in Highland Beach

In recognition of the growing problem of nuisance flooding associated with global warming, more severe weather events, and rising tides, the State of Maryland in 2020 requires all counties and municipalities to develop and implement nuisance flooding plans. Highland Beach has again partnered with Anne Arundel County; and the County's plan published in September 2020 includes the Town of Highland Beach.

[32] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-84

Figure 3: Town of Highland Beach Flood Insurance Rate Map (2015)[33]

(Source: FEMA Map Service Center)



"Over time, the small amount of development that has occurred in Highland Beach has moved inland from the Chesapeake Bay, with the result that there is only a very small residual exposure to flooding for structures in the jurisdiction. A review of NFIP flood insurance records supports this conclusion – while the County overall has 81 designated Repetitive Loss properties, none are listed in Highland Beach. Part of the reason for this may be that residents have not chosen to buy flood insurance (or to make claims if they had policies and were flooded), but it is notable that in an area with such exposure to potential flooding, there is little evidence to suggest that there is significant risk, and potential impacts should be considered small except in extreme events."

[33] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-65

Description of the Coastal Flooding Hazard[34]

"Coastal flooding refers to the inundation of land areas caused by water levels exceeding above normal tidal action. Winds generated from tropical storms and hurricanes or intense offshore low-pressure systems can drive water inland and cause significant flooding. This is known as storm surge.

"Storm surges occur when the water level of a tidally-influenced body of water increases above the normal high tide. Storm surges occur with coastal storms caused by massive low-pressure systems with cyclonic flows that are typical of hurricanes. Storm surges are particularly damaging when they occur at the time of a high tide, combining the effects of the surge and the tide. This increases the difficulty of predicting the magnitude of a storm surge because it requires weather forecasts to be accurate to within a few hours. Coastal flooding occurs in seasonal patterns. Tropical storms tend to come together from June until October. See Appendix A for a more detailed description of the coastal flooding hazard."

Coastal Flood Hazards in Highland Beach[35]

"Like similar coastal communities, Highland Beach has experienced the devastation of the power of hurricanes and the coastal flooding that often accommodates these events, including the Great 1920s Hurricane and the Great 1930s Hurricane. More recently, many current residents vividly recall the aftermath of Hurricane Isabel in 2003, that destroyed the Wayman Avenue Pier and damaged homes in the areas, and caused major flooding in town.

"With global warming and sea level rise, the town is beginning to experience nuisance flooding, with minor events in 2019 and 2020 causing inundation of the streets near the Bay and Creeks, on Wayman and Bay Avenues. Highland Beach is cooperating with Anne Arundel County, as part to the County's Flood Hazard Plan, to meet the mandate from the State of Maryland to develop a nuisance flood management and reporting plan." The Anne Arundel County Nuisance Flooding Plan was finalized in September 2020.

Groundwater and Flooding: Effects of Increased Precipitation, Stormwater Runoff, and Subsidence

The Town of Highland Beach sits atop groundwater aquifers that are the source of potable water via wells for the town residents. At times, the level of groundwater raises above the surface, resulting in flooding of yards and streets. A shallow aquifer begins beyond Highland Beach in the neighboring community of Bay Highlands, and extends beneath the Town Hall and down to the wetlands on Douglass and Wayman Avenues. On the next street over, the aquifer extends from Walnut Drive, along Bay Avenue, and at times raises above the surface before reaching Wayman Avenue.

There are two underground drainage pipes that carry stormwater runoff. The first runs along a limited portion of Douglass Avenue towards the corner of Douglass Avenue and Walnut Drive

[34] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-86
[35] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-89

where it daylights. From that corner, the pipe runs beneath Walnut Avenue where it again daylights towards the drain at the Town Hall. That drain connects to a final drain across Walnut Avenue in the rain garden, and from there empties into Oyster Creek.

The second drain runs from the corner of Douglass and Wayman Avenues, where it collects stormwater surface runoff from Douglass and Wayman Avenues, then running beneath Wayman Avenue to the drain at the corner of Wayman and Bay Avenues. From there, the pipe again runs underground and empties into Black Walnut Creek. Of course, when the creek raises above the level of that outlet, the pipe at that point is no longer functional, and water will back up at that location.

Beyond nuisance flooding caused by major stormwater events, the town is now experiencing more flooding events, especially on the corner of Bay and Wayman Avenues, on the beach, and in the beach raingarden. More and more often, these areas have standing water.

Certainly, global warming has contributed to the increasing frequency of flooding events, most notably when stormwater events occur more frequently. This results in two contributions to flooding. First, the groundwater is recharged, according to nature's plan, resulting in an elevated groundwater table. Second, storm events result in increased overland water flow. The latter is more pronounced now than during the earlier history of the town, due to increased precipitation and significantly increased areas of impervious surfaces, such as houses, driveways, and other hard surfaces added to the town, with the concomitant reduction in pervious surfaces that in the past mitigated overland flooding conditions. Additionally, the southern Chesapeake Bay region is experiencing subsidence. Data indicate that land subsidence has been responsible for more than half the relative sea-level rise measured in the region. So, the water will go somewhere, and more and more often, that somewhere is on streets, in yards and, at times, in basements.

Description of the Hurricane, Tropical Storm, and Nor'easter Hazard[36]

"Hurricanes, tropical storms, and typhoons, collectively known as tropical cyclones, are among the most devastating naturally occurring hazards in the United States. They present flooding, storm surge, and high wind hazards to the communities that they impact. A hurricane is defined as a low-pressure area of closed-circulation winds that originates over tropical waters. A hurricane begins as a tropical depression with wind speeds below 39 mph. As it intensifies, it may develop into a tropical storm, with further development producing a hurricane.

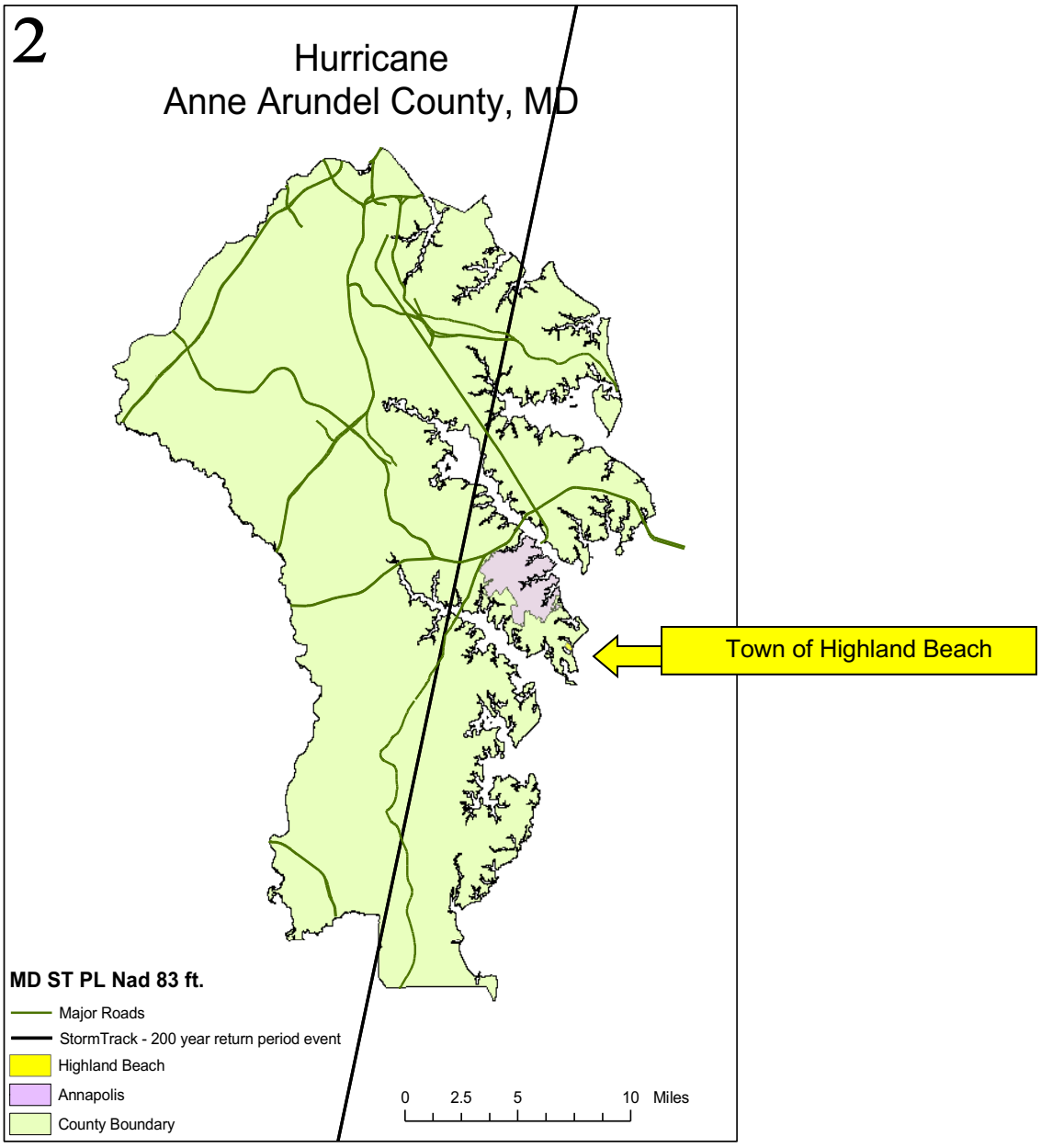
"Nor'easters are extra-tropical storms that derive their strength from horizontal gradients in temperature. These storms form as a result of a drastic drop in temperature as cold, arctic air flows south where it collides with warmer air moving northward. This tends to cause the storm to begin to revolve. Winds around the storm center carry warm, moist air from over the Gulf Stream, up and over the colder inland air. The air rises, cools, and snow begins to fall. Winds around the Nor'easter's center can become intense, with wind gusts that exceed hurricane force in intensity. The wind builds large waves that batter the coastline and sometimes pile water inland causing major coastal flooding and severe beach erosion. Unlike a hurricane, which usually comes and goes within one tide cycle,

[36] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-92

the Nor'easter can linger through several tides, each one piling more and more water on shore and into bays and dragging more and more sand away from beaches."

Figure 4: Anne Arundel County: HAZUS Hurricane Potential Track Scenario

With a 200-year Return Period
(Source: Anne Arundel County Office of Emergency Management)



Hurricane and Tropical Storm Hazards in Highland Beach[37]

"Highland Beach is subject to effects from both surge and high winds related to hurricanes and tropical storms. However, as discussed above in the flood subsection, there are few structures in the FEMA-identified V-zone SFHA. As shown on the effective FIRM (see Subsection 6.3.1), about a third of the land area in Highland Beach appears to be in the SFHA, much of it in V-zone. However, most of the small amount of development in the Town is outside this zone, and thus the hazard should be considered relatively minor.

"As noted elsewhere, Highland Beach has no properties on the NFIP Repetitive Loss (RL) list. Many of the properties that are on the list had claims from Tropical Storm Isabel (2003), but Highland Beach is not among them, which provides some evidence that there is minimal surge risk here, except in the most severe potential events. However, this should not be considered definitive, because it is possible that there was flooding during Isabel, but that there were no claims submitted to the NFIP, or that policy holders may have submitted too few (or such low dollar amounts) of claims over time that they did not appear on the RL list. The HMPC reviewed NFIP claims as part of the 2018 HMP update and found no RL claims for Highland Beach. Because of its position on the coast of the Bay, Highland Beach is more exposed to the effects of high winds than are the inland parts of the County. There are no open source records that can be consulted to identify past wind damages (private insurance covers losses, and the information is proprietary). It is reasonable to assume that structures in Highland Beach have about the same level of exposure as other coastal areas of the County, and that the housing stock is likely somewhat older than much of the remainder of the County. This suggests that the vulnerability of these structures is comparatively high, although without detailed engineering study it is difficult to quantify the risk.

"There are no open-source records that indicate Highland Beach had any significant damage (wind or surge) from Hurricane Sandy."

Description of the Drought Hazard[38]

"A drought is an extended dry climate condition when there is not enough water to support urban, agricultural, human, or environmental water needs. It usually refers to a period of below-normal rainfall, but can also be caused by drying bores or lakes, or anything that reduces the amount of liquid water available. Drought is a recurring feature of nearly all the world's climatic regions.

"The State of Maryland uses the U.S. Army Corps of Engineers definition of drought. It states, "droughts are periods of time when natural or managed water systems do not provide enough water to meet established human and environmental uses because of natural shortfalls in precipitation or stream flow." Droughts unfold at an almost imperceptible pace with beginning and ending times that are difficult to determine, and with effects that often are spread over vast regions. While maintaining water supplies for human use is an important aspect of drought management, drought can also have many other dramatic and detrimental effects on the environment and wildlife.

[37] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-101
[38] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-102

"In order to monitor potential drought conditions in a uniform manner, the State uses four indicators of water sufficiency. The indicators are based on the amount of precipitation and the effect of the precipitation (or lack of precipitation) on the hydrologic system. These indicators include:

- Precipitation levels
- Stream flows
- Ground water levels
- Reservoir storage

"The indicators are used in conjunction with historic data to determine if a current deficit is within a commonly experienced range, or whether it is unusually large. Ground water levels in confined aquifers are responsive to pumping stresses at distances far removed from pumping centers. No baseline exists for measuring changes in water levels for confined systems. Therefor percentile frequencies are not available for wells in these systems. Evaluation of drought impacts in these systems will be analyzed as a departure from the long-term downward trend in water levels.

"Reservoirs are designed to provide adequate storage when demand exceeds reservoir inflow. As stream flows are lowest during the summer period and demand is also greatest, the most critical time begins at the onset of summer. Adequate storage is presumed to be enough to last for a four-month period or 120 days."

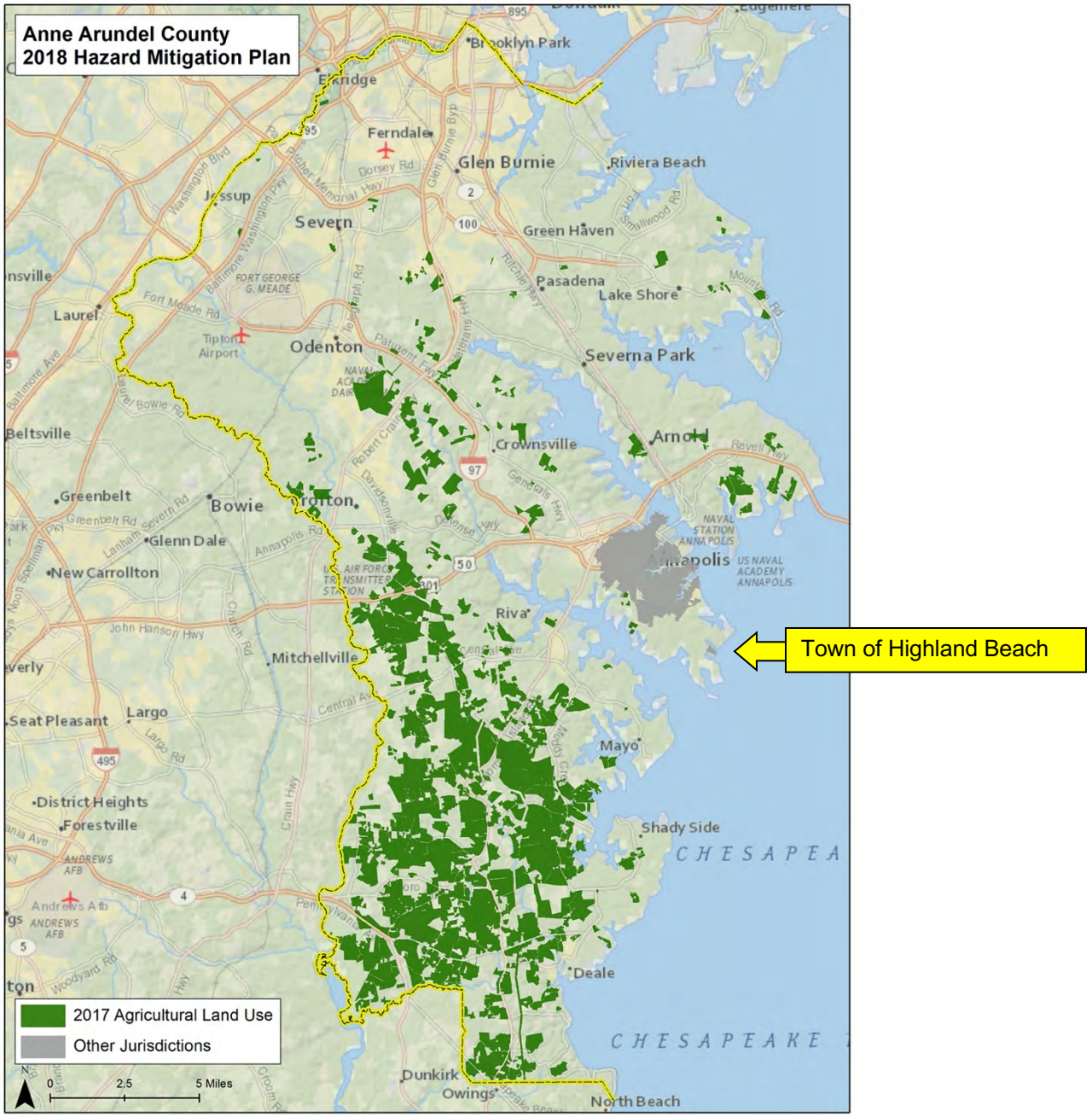
Drought Hazards in Highland Beach[39]

"Highland Beach has about the same level of exposure and vulnerability to droughts as the rest of the County. However, as noted in text, the County generally has little risk from this hazard. Potential impacts are negligible."

[39] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-106

Figure 5: [40]Agricultural Areas of Anne Arundel County

(Source: Anne Arundel County Office of Emergency Management)



[40] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 103

Description of the Earthquake Hazard[41]

"An earthquake is a sudden release of energy from the earth's crust that creates seismic waves. Tectonic plates become stuck, putting a strain on the ground. When the strain becomes so great that rocks give way, fault lines occur. At the Earth's surface, earthquakes may manifest themselves by a shaking or displacement of the ground, which may lead to loss of life and destruction of property. The "size" of an earthquake is expressed quantitatively as magnitude, and local strength of shaking as intensity."

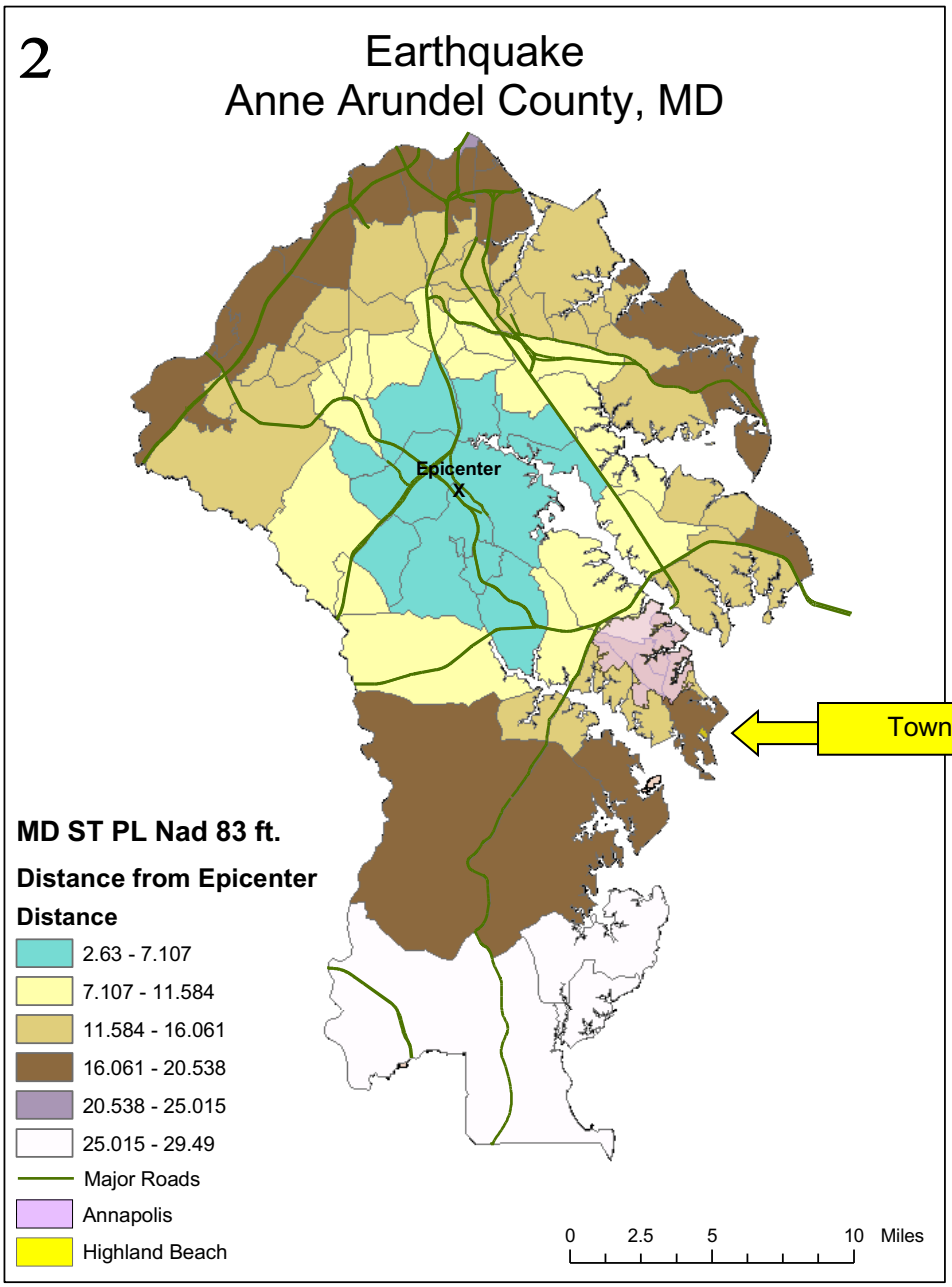
Earthquake Hazards in Highland Beach[42]

"Highland Beach has about the same level of exposure and vulnerability to earthquakes as the rest of the County, although it is possible that local soils may differ from other parts of the County due to the coastal location. However, as noted in text, the County generally has little risk from this hazard because of the very low seismicity in the region. Potential impacts are negligible."

[41] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-106
[42] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-112

Figure 6: Earthquake Scenario - Anne Arundel County[43]

(Source: Anne Arundel County Office of Emergency Management)



[43] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-110

Description of the Extreme Heat Hazard[44]

“Extreme heat kills by pushing the human body beyond its limits. Under normal conditions, the body's internal thermostat produces perspiration that evaporates and cools the body. However, in extreme heat and high humidity, evaporation is slowed and the body must work extra hard to maintain a normal temperature.

“Temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks are defined as extreme heat. Humid or muggy conditions, which add to the discomfort of high temperatures, occur when a "dome" of high atmospheric pressure traps hazy, damp air near the ground. Excessively dry and hot conditions can provoke dust storms.

“There are seasonal patterns to excessive heat waves, with an event most likely to occur in the summer months. Excessive heat can also cause utility outages due to an increased demand for electricity. Utility outages could severely hamper the County’s ability to provide services as facilities become inoperable and must be closed due to a lack of power or water.”

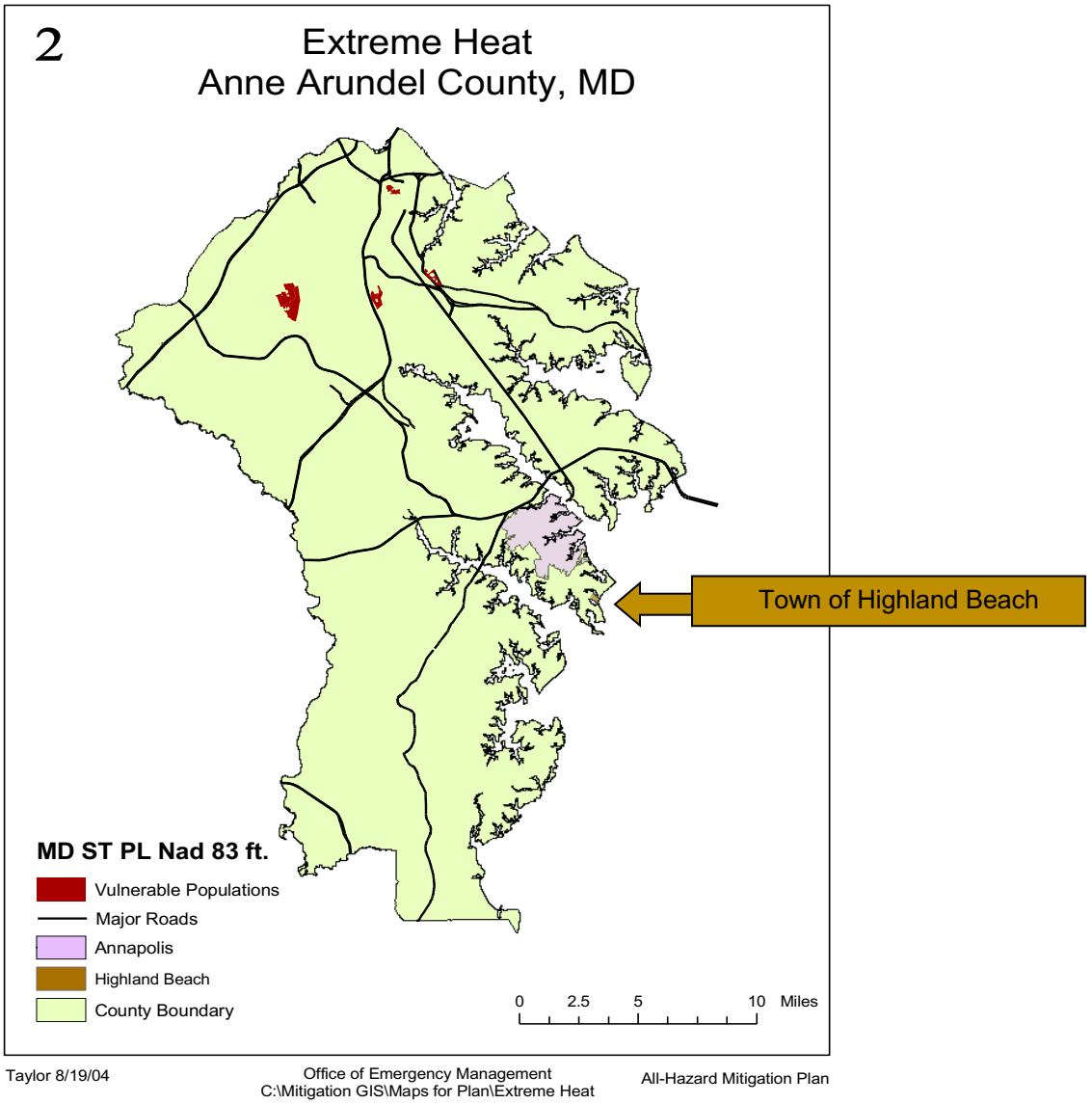
Extreme Heat Hazard in Highland Beach[45]

“Highland Beach has about the same level of exposure and vulnerability to extreme heat as the rest of the County. However, as noted in text, the County generally has little risk from this hazard because the climate of the area does not suggest extreme heat events are particularly common. Potential impacts are negligible.”

[44] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-113
[45] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-117

Figure 7: Census Blocks in Anne Arundel County with the Highest Concentration of Vulnerable Residents[46]

(Source: Anne Arundel County Office of Emergency Management)



[46] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-116

Description of the Severe Thunderstorm and Hailstorm Hazard[47]

"Thunderstorms are the by-products of atmospheric instability, which promotes vigorous rising of air particles. A typical thunderstorm may cover an area three miles wide. The National Weather Service considers a thunderstorm "severe" if it produces tornadoes, hail of 0.75 inches or more in diameter, or winds of 58 miles per hour or more. Structural wind damage may imply the occurrence of a severe thunderstorm. Hail is a form of precipitation comprised of spherical lumps of ice. Known as hailstones, these ice balls typically range from five mm to 50 mm in diameter on average, with much larger hailstones forming in severe thunderstorms. The size of hailstones is a direct function of the severity and size of the storm."

Thunderstorm Hazard in Highland Beach[48]

"Highland Beach has about the same level of exposure and vulnerability to thunderstorms as the rest of the County. The County has a moderate exposure to this hazard, but the impacts are generally insignificant."

Description of the Severe Winter Storm Hazard[49]

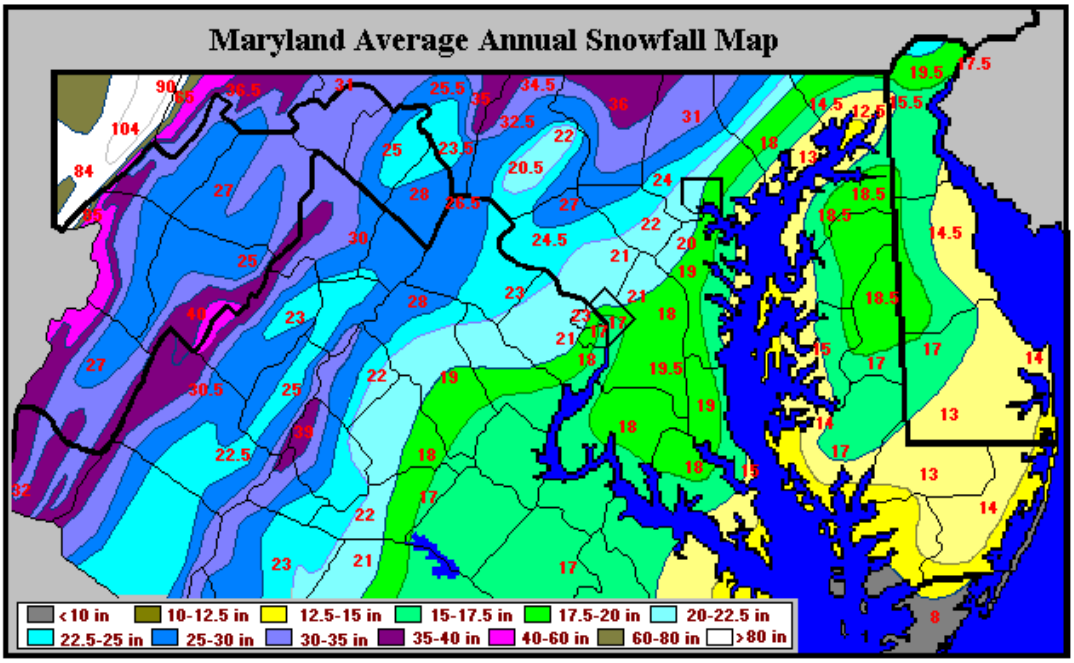
"Winter storms typically form along a front generally following the meandering path of the jet stream. These storms, called mid-latitude cyclones or extra-tropical cyclones, differ from hurricanes in that they move from west to east as opposed to east to west. These weather patterns carry cold air from Canada and the Rockies into the southern U.S. A severe winter storm event includes a storm with heavy snow, ice, or freezing rain – all of which can cause significant problems for residents.

"Heavy snowfall and extreme cold can immobilize an entire region. Even areas that normally experience mild winters can be hit with a major snowstorm or extreme cold. Winter storms can result in flooding, storm surge, closed highways, blocked roads, downed power lines and hypothermia."

[47] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-117
[48] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-119
[49] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-119

***Figure 8: Average Annual Snowfall Map - Maryland*[50]**

(Source: NOAA)



Severe Winter Storm Hazard in Highland Beach[51]

"Highland Beach has about the same level of exposure and vulnerability to severe winter storms as the rest of the County. The County has a moderate risk from this hazard overall, however, the Anne Arundel and Highland Beach experience winter weather often enough that the jurisdictions are well prepared for it. While potential impacts are serious, there is nothing to suggest that these would be catastrophic or long-lasting."

Description of the Tornado Hazard[52]

"A tornado is a rapidly rotating vortex or funnel of air extending to the ground from a cumulonimbus cloud. Most of the time, vortices remain suspended in the atmosphere. When the lower tip of a vortex touches earth, the tornado becomes a force of destruction. Approximately 1,000 known tornadoes are spawned by severe thunderstorms each year."

Tornado Hazard in Highland Beach[53]

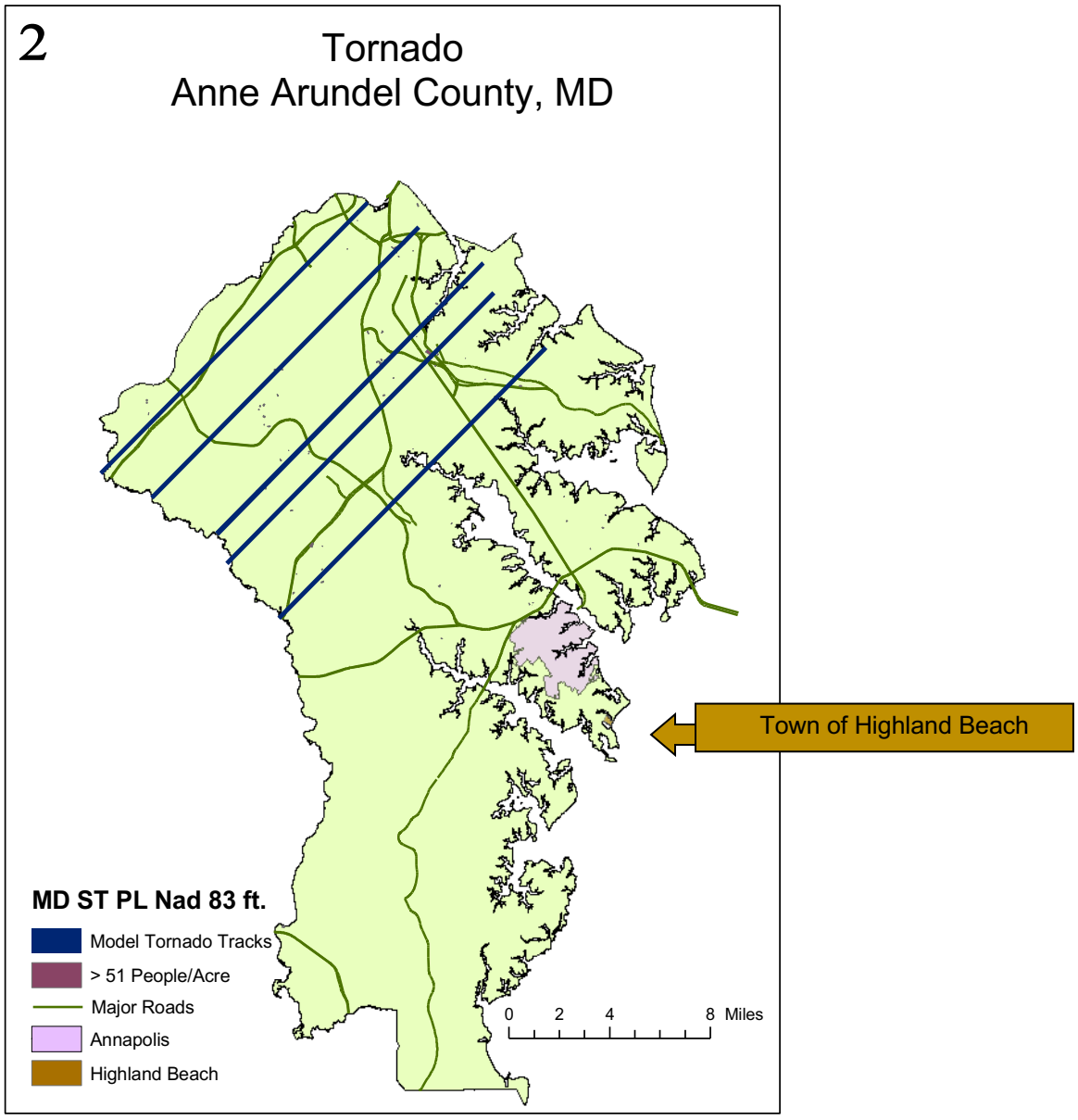
"Highland Beach has about the same level of exposure and vulnerability to tornadoes as the rest of the County. The County has very low risk from this hazard overall. The housing stock in the area is fairly vulnerable to the hazard; however, the very low

[50] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-122
[51] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-127
[52] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-127
[53] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-133

probability of a tornado strike in such a small, specific area is so low that potential impacts must be considered negligible."

Figure 9: Anne Arundel County: Model Tornado Tracks[54]

(Source: Anne Arundel County Office of Emergency Management)



[54] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-131

Description of the Wildfire Hazard[55]

"Wildfires are uncontrolled fires often occurring in wildland areas, which can consume houses or agricultural resources if not contained. Wildfires/urban interface is defined as the area where structures and other human development blend with undeveloped wildland.

"Forest and grassland fires can occur any day throughout the year. Most of the fires occur during the spring season. The length and severity of burning periods largely depend on the weather conditions. Low humidity, high winds, below-normal precipitation, and high temperatures that are frequently present during the spring result in extremely high fire danger. Drought conditions can also hamper efforts to suppress wildfires as decreased water supplies may not prove adequate to quickly contain the fire. The second most critical period of the year is fall. Depending on the weather conditions, a sizeable number of fires may occur between mid-October and late November.

"As more people choose to build homes, operate businesses, and engage in recreational activities in areas where wild-lands border more urban areas, the threat to private property from wildland fire increases. Creating "defensible" or "survivable" space around structures can make the difference between returning to an intact home or a smoldering pile of ashes if a wildfire moves through the area."

Wildfire Hazard in Highland Beach[56]

"Highland Beach has about the same level of exposure and vulnerability to wildfire as the rest of the County, although open areas near water are clearly less likely to burn than areas that have more potential fuel. The Town has a minor risk from this hazard overall. Impacts can be considered negligible."

[55] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-133
[56] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-136

Description of the Erosion Hazard[57]

"Erosion is defined as the group of natural processes, including weathering, dissolution, abrasion, corrosion, and transportation, by which material is worn away from the earth's surface. One type of erosion is coastal erosion, which is a dynamic process that is constantly occurring at varying rates along the coasts and shorelines of the U.S. Numerous factors can influence the severity and rate of coastal erosion including human activities, tides, the possibility of rising sea levels, and the frequency and intensity of hurricanes. Strong storms and hurricanes can erode large sections of coastline with a single event. The process of coastal erosion results in permanent changes to the shape and structure of the coastline. Human activities such as poor land use practices and boating activities can also accelerate the process of coastal erosion."

Location and Extent of the Erosion Hazard

"The potential for erosion exists over the entire planning area. Although possible to occur anywhere in the County, erosion is most likely to occur during Nor'easters' or downgraded hurricanes that can significantly impact shoreline areas of the County. Anne Arundel County has hundreds of miles of shoreline, most of which is within close proximity to major metropolitan centers such as Baltimore, Annapolis and Washington D.C.

"Protecting the Chesapeake Bay and its tributaries is considered one of the highest priorities for Anne Arundel County. To reduce water pollution and prevent erosion, the County places material such as topsoil, jute mats, grass seed, rip rap, etc. by hand or by machine on County-maintained property.[58]"

Figure 10: Rip-Rap Placed by Hand to Reduce Erosion

(Source: Anne Arundel County website)

[57] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-137
[58] Anne Arundel County.org

Severity of Erosion Hazard[59]

"Episodic storms generate the most significant erosion along the Anne Arundel shoreline. Typically these storms can impact the coast over periods of hours (tropical cyclones) to several days (Nor'easters). Although the storm events are short-lived, the resulting erosion can be equivalent to decades of long-term coastal change. The actual quantity of sediment eroded from the shore is a function of storm tide elevation relative to land elevation, the duration of the storm and the characteristics of the storm waves. During severe coastal storms, it is not uncommon for the entire berm and part of the dune to be removed from the beach. The amount of erosion is also dependent on the pre-storm width and elevation of the shoreline or beach. If the beach has been left vulnerable to erosion due to the effects of recent storms, increased erosion is likely. The time necessary for the beach to naturally recover from significant erosion can be years to decades."

Occurrences of the Erosion Hazard[60]

"Table 7 highlights some of the major events that have caused coastal erosion in Anne Arundel County.

[59] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-138
[60] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-138

Table 7: Major Coastal Erosion Events impacting Anne Arundel County (1990 – 2018)[61]

(Sources: FEMA, NOAA/NCDC)

Event date & Disaster (DR)	Erosion Event
February 4, 1998	A powerful Nor'easter, carrying copious moisture from the Gulf of Mexico and Caribbean region, dumped between two and four inches of rain across much of Maryland between the foothills and the Chesapeake Bay. Highest totals, ranging from three to five inches, fell in lower southern Maryland, causing widespread flooding of low-lying areas and small streams and creeks. The degree of erosion was greater than that associated with the remnants of hurricane Fran in 1996.
September 24, 1999 (SDR-1303)	Hurricane Floyd made landfall just east of Cape Fear, North Carolina in the early morning hours of the 16th and moved north-northeast across extreme southeast Virginia to near Ocean City, Maryland by evening on the 16th. The event resulted in over 1,000 homes reported flood damage, over 100 roads closed. In Anne Arundel County between 8 and 12 inches of rain were reported. Strong southerly winds ahead of the hurricane pushed tides two to three feet above normal, flooding several low lying areas in St. Mary's, Calvert, Harford, and Anne Arundel Counties. The NCDC database indicated that erosion was reported on the South River and Broad Creek.
September 18, 2003 (DR-1492)	On September 18, 2003, Hurricane Isabel made landfall on the North Carolina Coast. By the time Isabel moved into central Virginia, it had weakened and was downgraded to a tropical storm. Isabel's eye tracked well west of the Bay, but the storm's 40 to 50 mph sustained winds pushed a bulge of water northward up the bay and its tributaries producing a record storm surge. The Maryland western shore counties of the Chesapeake Bay and along the tidal tributaries of the Potomac, Patuxent, Patapsco and other smaller rivers experienced a storm surge of five to nine feet above normal tides. The NDCD database indicated that in Baltimore County alone, $3 million in damage was estimated to have occurred from erosion of the shoreline. The NDCD did not indicate the severity of erosion in Anne Arundel County, but based on the degree of flooding, it mostly like was comparable to Baltimore County.
October 27, 2012 (DR-4091)	There is no readily available evidence that Hurricane Sandy created significant erosion problems in Anne Arundel County. The event is listed in this table to recognize that it was reviewed and considered in the HMP update.

"Erosion is an ongoing problem along many areas of the Anne Arundel County shoreline. It is difficult, if not impossible, to assign a probability to the near constant small, ongoing erosion that may occur over a continuous period of time. However, a probability can be assigned to larger storm events such as Nor'easters, hurricanes and coastal storms that can result in significant storm induced coastal erosion.

[61] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-139

"As described earlier in this section, there were three major Nor'easters or downgraded hurricanes that caused erosion in Anne Arundel County between 1990 and 2007, and none since the last version of this HMP (2012). This translates to about one event approximately every nine years. In addition to the larger events noted above, smaller Nor'easters and other coastal storms cause erosion along the County coastline on average one to two times per year. The period of time over which this data is provided suggests the probability of erosion will be about the same in the future, with year-to-year variations."

Erosion Hazard in Highland Beach[62]

"Highland Beach has a higher exposure to the erosion hazard than many other parts of the County, because of its coastal location. There are no reliable open-source records indicating the degree of damage to Highland Beach from past erosion events, which are usually related to storm surge. The potential impacts to Highland Beach may be considered moderate, but absent further study it is impossible to characterize them more precisely."

Overview and Analysis of Anne Arundel County's Vulnerability to Hazards[63]

"As discussed in Section 6 of this HMP (Hazard Identification), Anne Arundel County identified twelve natural hazards that can affect the community. The likelihood of a future natural hazard event affecting the County was made based on an assessment of historical data and a prediction if a future event is likely to occur. Many of the natural hazards, outside of the 4 natural hazards listed below, have a low probability of affecting the County that would result in a Presidential Disaster Declaration. Section 6.4 describes how the County narrowed the focus from twelve to four natural hazards that create the greatest risk to human life, property, infrastructure, critical facilities, and buildings in vulnerable areas. For the purpose of the 2018 HMP update, the County narrowed its focus to 4 natural hazards posing the greatest risk to the community, which include the following:

- **Riverine and Coastal Flooding**
- **Hurricane, Tropical Storm, and Nor'easter (wind)**
- **Tornado**
- **Severe Winter Storm**

"As part of the 2018 HMP update, the HMPC conducted detailed research into potential vulnerabilities to natural hazards, for County assets, as well as private structures, populations and assets. Since the first version of the HMP was approved, the County has experienced some damage from Hurricane Isabel and other events such as the snowstorms of 2009-2010 and 2016. These are generally described here and in Section 6, *Hazard Identification and Profiling*. Given the relatively low damages from natural hazards in the past, the County can be considered to have limited vulnerability to hazards, except in the most extreme events. The County has well-established and successful programs for mitigation and prevention efforts, and intends to continue these indefinitely. Given the relatively low incidence of large-scale natural hazards, the

[62] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 6-139
[63] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 7-145

County's efforts in this regard have focused mostly on areas of risk that have been identified either through this mitigation plan, or via various other approaches, such as monitoring flooding and erosion in various areas (and addressing them through implementation of public works projects, and developing and implementing a shelter plan that serves to mitigate loss of life. The County also has effective building controls that serve to limit the vulnerabilities of structures and people, so future risks will likely remain fairly low, and hopefully will be reduced even further as mitigation projects and policy efforts are initiated and completed.

"This section addresses the risk related to the four hazards listed above, and estimates future expected losses from them, in accordance with FEMA requirements. The most significant natural hazard to which Anne Arundel County is exposed is floods. Flooding in Anne Arundel County is the result of various weather events including hurricanes, thunderstorms (convectional and frontal), storm surge and winter storms. See Section 6 of the HMP update for additional details about past flood occurrences in Anne Arundel County.

"The second most significant hazard to which Anne Arundel County is exposed to is wind from hurricanes, tropical storms and nor'easters. As discussed in Section 6 of this document, according to NOAA's National Climatic Data Center (NCDC) database, two tropical storms have impacted Anne Arundel County between 1950 and 2008. As of September 2018, the database did not include information about Hurricane Sandy, which occurred in 2012, and made landfall in Maryland as a tropical storm. The same was true of Hurricane Floyd (1999) and Hurricane Isabel (2003).

"The County is also at some risk from tornadoes. The entire County is equally exposed to the potential effects of tornadoes. Past events in Anne Arundel County have ranged in severity from an F0 to an F3 event (Fujita Scale). The County is also exposed to the severe winter storm hazard. The NCDC indicates that the County has experienced 31 winter storms between 1999 and 2018."

Section 3: Goals, Objectives, and Recommendations

General Goals and Policies

Community goals, objectives, and recommendations are an integral part of the Highland Beach Comprehensive Plan. This Plan is intended to reflect a general consensus of our residents and town officials as to how the town should grow in the future, maintain its historic and environmental character, and how that character should evolve over time. It is this fundamental consensus, in conjunction with our rights of incorporation, which underlies the following goals, objectives, and recommendations. This plan, in turn, is meant to be the foundation upon which future decisions by town officials and other citizens of Highland Beach are based.

The citizens of Highland Beach desire regulated, orderly physical development in their community, particularly for the remaining vacant areas of the community. They want to be able to control the form and amount of development that may occur. Through the use of appropriate, rational development standards, we hope to safeguard these qualities, which have and will continue to make Highland Beach a desirable and special place to reside and to visit.

Our goals and policies are based upon expressed opinions and viewpoints of town residents. Others have been identified by Town officials after careful examination of perceived future needs and ambitions of the Highland Beach community. The overarching goals are:

1. Manage orderly growth and development pursuant to identified physical, social and economic needs, while protecting the natural environment and the town's prevailing small-town atmosphere, consistent with the ability of the town's tax base to develop facilities and services to support new development.
2. Promote a safe, family-oriented environment with attractive social and recreational opportunities for all age groups.
3. Integral to efforts for environmental protection was the Resolution to Establish a Renewable Energy Policy adopted in 2013. For example, the commitment to increase the renewable energy production by 50 percent for the Town Hall by 2015 has been achieved, with net zero energy consumption at both the Town Hall and the Frederick Douglass Museum and Cultural Center. Continue and maintain net zero consumption at both facilities.
4. Promote and continue community greening initiatives to protect and restore the natural environment.

Land Use

With the exception of town property and vacant parcels, Highland Beach land use is exclusively residential. All homes are of the single-family detached variety. It is our intention to remain an exclusively residential community with no commercial intrusion.

The residents and homeowners of Highland Beach believe it is in our Town's best interest that new residential, recreational, and other non-commercial development that occurs in

Town is consistent with our strong commitment to the environment, as well as to the heritage of Highland Beach. Such development should proceed in an orderly, controlled fashion, and not to the detriment of our current residents, both year-round and seasonal.

Objective 1: Land use in Highland Beach should be reserved for residential and residential support use only.

Recommendations:

1. Identify areas for allowable future residential land use.
2. Expand public land to include new recreational facilities and/or community building.
3. Designate platted roads for opening in order to accommodate future community development, or to leave in an undeveloped state for ecosystem services.
4. Maintain the existing two-lot minimum for new home construction.
5. Preserve undeveloped land not privately owned for ecosystem services and/or recreational use.

Implementation Tools:

- Comprehensive Land Use Plan Map
- Zoning ordinance
- Zoning certification
- Building permit process

Objective 2: Future residential development should be limited with regard to intensity (or density) and placement of structures, and lot dimensions should be controlled to preserve the present character of Highland Beach.

Recommendations:

1. New residential development should proceed only in accordance with legal, applicable, and appropriate development standards which are recognized and approved by the Board of Commissioners, in compliance with the standards set and enforced, on behalf of the Town, by Anne Arundel County.
2. Maintain and enforce the currently codified minimum lot area standard of 15,000 square feet set forth in the Highland Beach Zoning Ordinance by requiring the consolidation of adjoining, previously recorded lots in single ownership which fail to meet the minimum lot size standard. (Notably, a few lots that may be buildable do not meet this minimum standard due to being grandfathered in.)
3. Require uniform lot dimensions where possible.
4. Issue building permits only for homes to be built on separate and distinct lots or recorded parcels of ground.
5. Regulate the physical disposition of homes on building lots in order that proper setbacks from property lines and adjoining structures are maintained.
6. Avoid inappropriate disturbance of land immediately abutting water bodies or composed of wetland by enforcing mandatory setbacks and buffers.
7. Observe all regulations on building, including shoreline buffers, limitations on impervious surfaces, and rules on tree cutting contained in the State Chesapeake Bay Critical Area Protection Program.

8. This Plan does not address annexation of adjoining communities.

Implementation Tools:

- Zoning ordinance
- Zoning certification
- Building permit process
- Perpetual deed covenants

Housing

Overall, housing stock in the Town of Highland Beach is in sound condition and is adequately served by public facilities, despite some evidence of physical deterioration in a small number of generally historic structures. Deterioration of structures may continue to occur without the establishment of a housing rehabilitation and preservation program. It is important to note, however, the recent and significant commitments to extensively renovate existing homes, as well as the construction of new structures, as the Town continues to be recognized as a valuable and desirable community to live full time, as well as to establish a second home in this historic community. Renovations and new construction must meet high standards of housing quality consistent with existing residential units in Highland Beach. Pride of home ownership and maintaining homes in excellent condition is evident in the homes of long-time as well as more recent residents.

Objective: Identify opportunities for access to and maintenance of quality housing that fulfills the present and future housing needs of our residents.

Recommendations:

1. Develop and implement programs and codes designed to preserve, rehabilitate, and generally maintain the quality of housing in the Town and to ensure proper upkeep of the existing and future housing stock, including exterior appearance and maintenance of yard areas.
2. Enforce the Anne Arundel County BOCA[64] building code to ensure adherence to sound construction practices and standards.
3. Observe all regulations including shoreline buffers, limitations on impervious surfaces, limitations on stormwater runoff flowing to adjoining properties, and rules on tree cutting contained in the State Chesapeake Bay Critical Area Protection Program.
4. Enforce the State Livability Code contained the Maryland Annotated Code of Regulations.
5. Promote green building practices for new home construction and major home renovations, both for the homeowner's benefit and to reduce global warming.
6. Seek burial of all public utilities if deemed to be feasible.
7. Investigate the feasibility of public water supply.

[64] The BOCA (Building Officials and Code Administrators) National Codes set forth minimum performance requirements for all aspects of construction. They address the areas of building, fire prevention, mechanical systems, property maintenance and energy conservation.

Implementation Tools:

- State Livability Code
- County Housing Maintenance and Occupancy Code
- BOCA code
- Historic architectural preservation standards and regulations
- Perpetual deed covenants
- Zoning certification

Historic Preservation

Highland Beach recognizes the historic importance and heritage of several homes within the Town where historic figures have resided.

Objective: The community proposes to commemorate this history through various means and to preserve those structures deemed most important.

Recommendations:

1. Continue to support the Frederick Douglass Museum and Cultural Center in its mission to preserve, share, and celebrate the legacy and history of Frederick Douglass and his family, and the many other dignitaries that share the rich history of Highland Beach.
2. Ensure that the Frederick Douglass Museum and Cultural Center is maintained as a natural treasure and resource for residents and guests visiting the Museum.
3. Consider strategies to make the Museum financially self-sustaining.
4. Consider the identification and celebration of historic structures to receive special recognition, which may include the Mary Church Terrell home on Wayman Ave., the Dr. Milton A. Francis home on Bay Ave., the Dr. John E. Washington house on Douglass Ave., the Bowen Guesthouse on Douglass Ave., and the homes celebrated in the recently published *Passport to Historic Homes of Highland Beach*.

Implementation Tools:

- Adoption of appropriate ordinance
- Grant funds available to the Town and the FDMCC, Inc.
- Voluntary and/or paid docents for the Frederick Douglass Museum and Cultural Center

Community Facilities, Roads, and Recreation

Highland Beach is fortunate to have a well-planned, physically sound internal road system. All homes are well served by existing roads; and road improvements and repairs are ongoing.

Facilities, e.g., the beachfront, piers, and pocket parks that are provided and maintained by the Town emphasize the recreational orientation of the community. These facilities are an important part of the leisure time for the people of Highland Beach. Other facilities, such as the Frederick Douglass Museum and Cultural Center and the Town Hall, provide educational, cultural, and meeting space for our Town government and citizens.

To provide more services and effective security for its residents, additional efforts may be required.

Objective: Planning should continue for necessary Town policies and facilities that make Highland Beach a safe and enjoyable place to live.

Recommendations:

1. Maintain the waterfront park and its facilities.
2. Undertake all necessary and responsible steps to prevent deterioration of the beachfront, creeks, and the community piers.
3. Maintain existing streets in good repair.
4. Preserve community areas now reserved for open space and recreation and consider allocation of additional public land for the following outdoor recreational uses: a swimming pool, tennis court, volleyball court, construction of Pavilion II for use as a community center for town residents. [65]

Implementation Tools:

- Zoning ordinance
- Town budget
- Require guest passes for non-residents

Safety and Traffic Control

Emergencies in Highland Beach are handled by the County Police and Annapolis Neck Fire Station.

The Anne Arundel County Police Department is the primary law enforcement agency of the County, serving a population of more than 564,195 per 2015 census estimates across 588 square miles (1,500 km^2) of jurisdiction.

Anne Arundel County Fire Department Station Eight (also known as the Annapolis Neck Fire Station) is located nearby at 991 Bay Ridge Rd, Annapolis, MD 21403. It is a relatively new station (which began operating in 2009) providing fire, EMS, and rescue services to the Annapolis Neck area of the county and mutual aid to Annapolis, MD.

Highland Beach owns and maintains its roads. However, since we are a municipality and not a gated community, the public can drive on our roads. We can and do prevent parking on our

[65] The 1990 Comprehensive Plan caveated the building of a pavilion with “as funds permit.” This is not repeated in the current plan because funding is no longer a barrier.

roads (except for guests and during special events). This helps to limit people from outside of the community from inappropriately parking and using the beachfront and other facilities.

During the warmer months, the Town hires Traffic Control personnel to help manage the increased traffic and use of the beachfront. Traffic Control, as well as citizens, alert trespassers of their transgressions. If trespassers are uncooperative, Traffic Control will call the police for assistance as a last resort.

Objective: Enact Town policies and procedures that limit the transgressions of trespassers and make Highland Beach a safe place to live.

Recommendations:

1. Prohibit inappropriate use of the beachfront and other facilities by outsiders, as well as inappropriate use by citizens.
2. Annually and as needed, educate Bay Highland citizens, and others, that they cannot access our beach unless they have a guest pass.

Implementation Tools:

- Implement cost effective traffic control measures to prevent unauthorized use of the Town's roads (e.g., no parking for non-residents) and recreational facilities.
- Require guest passes for non-residents.
- Traffic control and citizens alert trespassers of their infractions.
- Request Anne Arundel County Police Department assistance only when necessary.
- Towing of inappropriately parked vehicles.

Public Education

Highland Beach historically has had few school-age children; however, it is important that the availability and adequacy of area public schools be addressed.

Objective: Educational access and quality education for the families of Highland Beach shall be promoted.

Recommendation:

Encourage Anne Arundel County in its continuing education improvement programs that will ultimately benefit Highland Beach.

Implementation Tool:

Encourage increased community education regarding health and environmental issues. (See examples listed in the next "Natural Environment," and other sections.)

The Natural Environment

Highland Beach is bordered on three sides by water, including the Chesapeake Bay. Tidal wetlands, a highly valuable natural resource, together with rain gardens and forest buffers—including, e.g., the Big Woods in Bay Ridge and the Walnut Avenue lot in Highland Beach—afford some protection from polluted runoff and sedimentation of these water bodies, providing vital ecosystem services to the area. These natural resources must be protected from adverse effects of development and post-development activity. These vital resources are part and parcel of what makes Highland Beach a special natural environment in which to live and vacation.

Objective: All new development, and ongoing maintenance of properties, shall respect the natural environment of Highland Beach.

Recommendations:

1. Prohibit any new home construction in wetlands and without reasonable setbacks from a body of water.
2. Require all new development, as well as redevelopment, to observe the legislated criteria established by the State Chesapeake Bay Critical Area Program and the associated regulations enacted by Anne Arundel County.
3. Heighten the awareness of the importance of protecting and preserving the Town's natural resources and encourage individuals to participate in protection and cleanup initiatives.
4. Continue to maintain community grounds which will assure that no contaminants accumulate or wash into the surrounding waterways.
5. Prohibit trespassing and disturbances on wetlands which may upset habitat and interfere with natural wetland processes.
6. Encourage citizens to control stormwater runoff on their properties.
7. Consider street-side stormwater management rain gardens to further reduce the entry of contaminated stormwater runoff from entering the Bay and Creeks.
8. Promote conservation landscaping practices, including: installing rain gardens and rain barrels to mitigate polluted stormwater runoff; planting native trees, shrubs, and herbaceous perennials; supporting pollinators; composting; invasive plant species removal; reduction, if not elimination of fertilizer, pesticides and herbicides on lawns; and responsible management of dog waste.
9. Work with Anne Arundel County and other government and NGO entities to address erosion control.

Implementation Tools:

- Demonstration areas to educate residents and promote individual projects.
- Provide workshops, presentations, and signage to promote enhancement of the natural environment.
- Secure grant funding available to municipalities for environmental projects; arrange for project management; and recruit volunteers.

Beachfront

Highland Beach is fortunate to have 600 feet of sandy beach and grassy areas along the waterfront of the Chesapeake Bay. Amenities include: a 275-foot pier; benches; and a playground for Highland Beach residents and their guests. When Highland Beach was founded in 1893, there was substantially more beachfront (some estimate as much as 100 feet or more of sand, going toward the Bay, than current conditions). We both lose and gain sand over periods of several years; however, the overall trend for coastal communities is continuing sea level rise and erosion of coastlines. Notably, flooding, severe weather events, and shoreline erosion are all expected to continually increase due to global warming. As well, as Highland Beach and Venice Beach households continue to grow, human impacts on facilities continue to increase.

Goal: To the extent feasible, protect and restore the beachfront from weather events, human and animal use.

Objective: Maintain and improve the beachfront for the enjoyment of residents.

Recommendations:

1. Continue to improve beachfront maintenance, including sandy and grassy areas, pier, playground, and benches.
2. Educate citizens about sea level rise and the loss of beachfront all along the East Coast.
3. Explore options to address beachfront erosion, including seeking the input of environmental experts on the subject and experts at the Maryland Department of Natural Resources.
4. Prohibit inappropriate use of the beachfront by outsiders, as well as inappropriate use by citizens.
5. Annually and as needed, educate Bay Highland citizens, and others, that they cannot access our beach unless they have a guest pass.
6. Consider actions to efficaciously address the need for sand retainment and replenishment, as is practical in consideration of global warming and rising sea levels together with sinking lands.

Implementation Tools:

- On-going and improved maintenance by paid and volunteer help.
- Effective traffic control.

Sensitive Areas

Highland Beach enacted a Sensitive Areas Element in December 1998 to protect four sensitive areas of our town. This was particularly to recognize the Town's proximity to the Chesapeake Bay as well as to Black Walnut and Oyster Creeks, and to acknowledge our continuing commitment to environmental protection. The four areas include: creeks and their buffers; the 100-year floodplain; steep slopes; and habitats of rare, threatened, and endangered species.

■ Creeks and Their Buffers

New development is not permitted within 100-foot creek buffers—per the Critical Areas Program regulations—in order to preserve and enhance the natural ecosystem and functions of creeks and creek buffers.

Goal: Riparian forest ecosystems are enhanced and restored; and stormwater is managed to prevent degradation of creeks.

Objective: Via maintenance of creek buffers, the quantity and quality of stormwater runoff from developed areas that enters creeks shall be reduced and improved, respectively.

Implementation Tools:

- As required by the State Chesapeake Bay Critical Area Protection Program and Anne Arundel County, maintain a minimum 100-foot buffer from each creek, measured from the top of each bank.
- Develop a stormwater management plan and program for the Town that uses retrofitting measures to address existing stormwater management problems, most particularly increased stormwater water runoff due to increased impervious surfaces from new houses and associated impervious surfaces, and the concomitant loss of vacant property/open space that previously mitigated the amount and effects of stormwater runoff.
- Provide incentives for residents implementing best stormwater management practices on their properties.
- Prohibit alterations of creekbanks, except for best management practices to reduce erosion or for stabilization.
- Prohibit disturbance to natural vegetation within 100-foot creek buffers, including tree removal, shrub removal, clearing, burning or grubbing.

■ 100-Year Floodplain

Substantial improvements and additions to existing structures located in the 100-year floodplain shall be limited and must be elevated above the floodplain.

Goal: Protect the 100-year floodplain from the adverse effects of development.

Objective: Restrict development in the 100-year floodplain.

Recommendation: Continue monitoring development plans and activity in the floodplain.

Implementation Tools:

- Encourage Town acquisition of properties located within the 100-year floodplain, so that these areas can be maintained or returned to an undeveloped state.
- Ensure that substantial improvements and additions to existing structures located in the 100-year floodplain are limited and must be elevated above the floodplain.

■ Steep Slopes

Development should be directed away from steep slopes. New development should be prohibited on slopes 15 percent or greater unless it can be demonstrated that the stability of the slope will be improved and that adverse environmental impacts will be mitigated.

Goal: The most prominent slopes and those in greatest need of stabilization shall be carefully managed. Maintain the integrity and biological diversity of undeveloped steep slopes.

Objective: Prohibit disturbance of steep slopes.

Recommendation: Continue to be on alert for development on steep slopes.

Implementation Tools:

- Identify specific steep slope areas, such as along Black Walnut Creek, needing priority attention via stabilization and prudent management.
- Develop appropriate best management practices and mitigation techniques to be implemented on sites where disturbance to steep slopes cannot be avoided.
- Topographic information shall be included for review on all site plans.

■ Habitats of Rare, Threatened, and Endangered Species

Black Walnut Creek is the one known habitat of threatened and endangered species located within the boundaries of the Town (per the 1990 Comprehensive Plan). See the list of endangered animal and plant species in Anne Arundel County at—
https://dnr.maryland.gov/wildlife/Documents/AnneArundel_County_RTEs.pdf.

Goal: Preserve and prohibit development or disturbance of identified rare, threatened and endangered species and their habitat.

Objective: Conserve fish, plant, and wildlife habitat.

Recommendation: Maintain communications with the Maryland Department of Natural Resources (DNR).

Implementation Tools:

- Identify rare, threatened and endangered species and their habitat.
- Establish land use policies for development and redevelopment which accommodate growth and also address the fact that, even if pollution is controlled, the number, movement and activities of persons in that area can create adverse environmental impacts.
- Maintain current Sensitive Species Project Review Areas maps provided by DNR's Wildlife and Heritage Division.
- Require consultation and review by DNR's Wildlife and Heritage Division for activities having potential impacts on listed species.

Weather Hazard Mitigation

Anne Arundel County—including Highland Beach—has established an overarching goal to reduce or avoid long-term vulnerabilities to identified hazards[66].

Goal 1: Educate and protect residents and minimize loss of human life and damage to property from natural hazards affecting the County.

Objective: Protect human life and property from damage.

Implementation Tools:

- Educate the public and implement actions that protects lives and property by making homes, businesses, critical infrastructure, and other property less vulnerable to natural hazards.
- Target owners of properties within identified vulnerable areas to natural hazards for additional outreach regarding mitigation and disaster preparedness.
- Evaluate existing shelters to determine adequacy for current and future population needs.
- Maximize the use of technology to adequately warn the public about hazard events.
- Document and monitor hazard data for Anne Arundel County to build community resilience.
- Develop educational material and programs to increase public awareness of the risks associated with natural hazards.
- Cultivate a spirit of cooperation between Highland Beach and County government that ensures an ongoing commitment to future mitigation activities.

Goal 2: Educate residents and minimize damage to property and inconvenience resulting from flooding due to stormwater events.

Objective: Protect property from damage and minimize flooding.

Implementation Tools:

- Develop educational material and programs; and educate residents to increase public awareness of flooding hazards and mitigation strategies.
- Develop a program with options for individual homeowners to take mitigation actions, together with actions that the town can implement on town owned properties. For example, mitigation strategies include more rain gardens and trees to help absorb stormwater runoff.
- Target owners of properties subject to flooding for additional outreach regarding mitigation.

[66] Anne Arundel County, Maryland, 2018 Hazard Mitigation Plan Update, 2020, Page 8-173

Pathogen Hazard Mitigation

Residents of Highland Beach, this country, and indeed the world, are in the midst of the tragedy of the COVID-19 pandemic, and with the virus the horrific human suffering and loss of lives. Experts expect that this virus is not going away soon, and we may have to learn to live with it. It is also projected that this virus, like the virus that caused the 1918 pandemic, is prescient to what we will surely see again, with newly discovered viral outbreaks in our future. We cannot afford to let our guard down.

In addition to the coronavirus, we need to be mindful of contamination of waterbodies. After rainfall of 1/2 inch or more, all Anne Arundel County beaches are under a no swimming/no direct water contact advisory for at least 48 hours due to predicted elevated bacteria levels from rainwater runoff and increased health risks. Do not swim in cloudy, murky water. And after heavy rainfall for several days, there is a risk of sewage overflow, which can and has impacted Black Walnut Creek.

Objective: Protect public health from viruses, contaminated water, and disease vectors such as mosquitoes and ticks.

Implementation Tools:

- Continue to educate and remind residents of COVID-19 risks and preventative measures, especially wearing masks, social distancing, and hand washing.
- Continue to educate and remind residents of health risks associated with water contact after rainfall, and the health risks associated with disease vectors such as mosquitoes and ticks.
- Advise swimmers not to swim in murky waters.
- Closure of public facilities, including the Town Hall and the Frederick Douglass Museum and Cultural Center until residents and their guests can safely enjoy the amenities.
- Signage on the beach warning of contamination concerns.
- Discourage large gatherings.
- Encourage residents to empty standing water to eliminate habitat for mosquitoes that may carry pathogens.

Deer Management

Overpopulation of deer in Highland Beach is a significant concern to the residents, both as a nuisance concerns but more importantly as a health (ticks and Lyme disease) and safety concern (car accidents). Residents desire to address the population issue as aggressively as possible and practical.

Goal: Manage the deer population.

Objective: The deer population in Highland Beach—as part of the Annapolis Neck Peninsula—is maintained at or below the sustainable deer population for the area.

Recommendation: Reestablish communication with surrounding communities in order to develop a Peninsula-wide plan that can be sustained throughout the coming years.

Implementation Tools:

- Continue to educate residents on options and limitations, such as outlined in "An Evaluation of Deer Management Options[67].
- Advise residents of individual actions conducive to attaining the objective.
- Continue communication and coordination with deer management experts at the MD Department of Natural Resources, Wildlife & Heritage Service.

[67] An Evaluation of Deer Management Options, Northeast Deer Technical Committee, May 2008

Section 4: Public Hearing and Adoption Process

The primary intent of the review process is to ensure a robust yet uncomplicated process that provides ample opportunity for residents to review, comment upon, and generally make their views and priorities known for the content of the Comprehensive Plan, and via that mechanism, the goals and objectives that will guide the Town in the near future. The process includes a first draft review by the Board of Commissioners for their initial thoughts and comments; draft distributed via electric means to citizens for review with timeframe, followed by a public hearing. Following these steps and any additional changes to the draft to address public comments, the final document will be presented to the Board of Commissions to decide on adoption.

The intent of the Mayor and Board of Commissioners is to take all comments seriously, and although there can be no guarantee that a comment will be accepted, given e.g., that comments are oftentimes contrary to other comments on the same matter, the commitment is to listen and respond to all comments. We will strive to ensure that the result is a robust Comprehensive Plan that truly reflects the concerns, priorities, and desires for the Town of Highland Beach for its current and future residents.

Overall timeframe

Draft review by commissioners, comments requested: 30 days

Draft review by public, comments requested: 30 days

Public hearing, noting comments received to date and disposition: 30-45 days, depending upon extensiveness of comments received

Develop final document: 30 days

Adoption by Mayor and Board of Commissioners: Next Board meeting

Posting on website for download by residents: 7 days after adoption

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