

CHAPTER 24: NORTHAMPTON COUNTY

COUNTY PROFILE

Northampton County is the southernmost county on Virginia's Eastern Shore. It was settled by the English in 1614, named Northampton in 1642, and divided into Accomack County and Northampton County in 1663. The Eastern Shore played an influential role in the history of Colonial America. The present County seat in Eastville was founded in 1680 when a courthouse was erected there. Northampton has the oldest continuous court records in the country and is one of the oldest counties in the entire nation. There are six incorporated towns in the County: Belle Haven (portion located in Accomack County as well), Cape Charles, Cheriton, Eastville, Exmore, and Nassawadox.



Figure 1: Northampton County Context and Google Map

SOCIO-ECONOMIC

Part of assessing hazards in relation to their risk is understanding the people affected. Not all people are affected equally. Some are affected by the factors relating to their ability to understand risks posed by hazards, and some by their ability to remove themselves from harm's way. Those factors include age, mobility, income, and the languages individuals speak and the languages in which individuals are able to access information.

DEMOGRAPHICS

According to the 2019 American Community Survey, the County had a population of 11,885, indicating that the population has been relatively stable with a slight decline since 2000. The median age for residents in Northampton County in 2019 was 49 years, which is over 10 years higher than that of both the state and nation, with 31.4% of the population over the age of 62 (ACS 2019). This indicates an older population in the County, which may require additional assistance during a hazard. Table 1 also indicates disability and poverty rates higher in Northampton County than the nation. The median household income for 2019 is likely an underestimate, as in 2018, the median household income was \$57,492 (Personal communications, Susan McGhee, Director of Planning, Permitting, and Enforcement, March 22, 2021). This can be attributed to a large influx of retirees moving to towns like Cape Charles and Cheriton.

Table 1: Northampton County Demographic Information

	2020	2014**	2010***	2000****
Population	12,282	12,121	12,389	13,093
Median Age (Years)	49.0*	48.0	47.8	42.4
Disability	15.6%*	12.9%	NA	NA
Income				
Median Household Income	\$47,227*	\$34,656	\$35,760	\$28,013
Poverty Level	18.0%*	17.1%	15.8%	15.8%
Language				
Only English	90.4%*	10,547	11,117	11,670
Other	9.6%*	482	403	703
Spanish	7.3%*	401	379	340
Ind-Euro	1.6%*	41	0	18
Asian	0.6%*	34	24	0
Other	0.0%*	0	0	0

Source: U.S. Census 2020, *ACS, 2014-2019, **ACS, 2010-2014, ***U.S. Census 2010, ****U.S. Census 2000

WORK FORCE

Employment patterns are important to examine for two reasons. They can help to identify concentrations of people for hazard information dissemination or hazard rescue and evacuation. Secondly, they can identify where disruptions in employment and income might occur in the aftermath of a disaster.

As of the 2019 American Community Survey 5-year estimates, over a quarter (27%) of the workforce in Northampton County is employed in the educational and health care services industry. This number has increased since 2014 estimates, despite Riverside Shore Memorial Hospital relocating in Accomack County. In 2020, the hospital moved from Nassawadox in Northampton County to Onancock in Accomack County. It is likely that this number is still mostly accurate and that Northampton County residents are still employed at the new location and are commuting to Accomack County. Over half of the residents in Northampton County travel outside of the County to their place of employment (Personal communications, Susan McGhee, March 22, 2021), with many commuting as far as the Hampton Roads area (*Northampton County Comprehensive Plan*, 2021). This is important to consider for the

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community's ability to rebound following a severe event, as there are many variables that could prevent them from reaching their place of employment, i.e., damages to vehicle, damages or closure to roadways or bridge and tunnel systems, flooding, etc.

The number of individuals currently employed in the Agriculture and Retail trade industries more closely align to Census numbers from 2010 (Personal communications, Susan McGhee, March 22, 2021). The decline of the civilian employed population is likely due to a high number of County residents retiring.

Table 2: Northampton County Local Workforce Industry

Civilian Employed Population								
Industry	2019*		2014**		2010***		2000****	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Agriculture, forestry, fishing/hunting, or mining	254	5.2%	522	10.5%	627	11.2%	411	7.9%
Construction	384	7.9%	379	7.6%	473	8.4%	359	6.9%
Manufacturing	376	7.7%	346	7.0%	403	7.2%	634	12.2%
Wholesale trade	227	4.6%	340	6.8%	312	5.6%	187	3.6%
Retail trade	647	13.2%	513	10.3%	532	9.5%	498	9.6%
Transportation and warehousing, and utilities	163	3.3%	119	2.4%	300	5.3%	332	6.4%
Information	49	1.0%	22	0.4%	41	0.7%	62	1.2%
Finance, insurance, real estate, and rentals	146	3.0%	195	3.9%	318	0.7%	211	4.1%
Professional, scientific, waste management	258	5.3%	516	10.4%	256	4.6%	240	4.6%
Educational and health care services	1,319	27.0%	1,272	25.6%	1,270	22.6%	1,242	24%
Arts, entertainment, recreation, food	558	11.4%	387	7.8%	537	9.6%	415	8%
Public Admin	283	5.8%	122	2.5%	237	4.2%	295	5.7%
Other	227	4.6%	233	4.7%	307	5.5%	291	5.6%
TOTAL CIVILIAN EMPLOYED POPULATION	4,891	-	4,966	-	5,613	-	5,177	-

Source: *ACS 2014-2019, **ACS 2010-2014, ***U.S. Census 2010, ****U.S. Census 2000

BUSINESSES

Business data provides basic information used in projecting potential economic losses from business and employment disruption, along with wage losses to employees. It can also serve as an indicator of community recovery resources. Finally, it can help to prioritize restoration of utility and infrastructure functions following a high-intensity hazard.

According to Table 3, the County has seen a slow but steady decline in business presence over the last eight years. The total civilian employed population (Table 2) and overall population (Table 1) have also experienced a decline. The County's primary economies are affiliated with agriculture, working waterfronts, and local government (*Northampton County Comprehensive Plan, 2021*), with some of the largest employers in the County being Northampton County Schools, The County of Northampton, the Chesapeake Bay Bridge Tunnel (CBBT), Heritage Hall (now The Citadel), Food Lion, Ballard Fish and Oyster Company, David's Nursery, Eastern Shore Rural Health System (ESRH), Coastal Precast Systems, and several tourism and agricultural based businesses (Virginia Employment Commission, 2020).

Table 3: Northampton County Business Establishment Types

Industry Code Description	Total Establishments			
	2017*	2014	2012	2010
Agriculture, Forestry, Fishing, and Hunting	8	8	8	6
Utilities	-	1	1	1
Construction	22	26	28	33
Manufacturing	9	11	9	9
Wholesale Trade	19	17	20	17
Retail Trade	60	61	70	77
Transportation and warehousing	-	3	2	3
Finance and insurance	17	18	19	18
Information	4	6	2	2
Real Estate and Rental and Leasing	14	15	12	11
Professional, Scientific, and Technical Services	22	23	21	19
Management of Companies and Enterprises	-	1	1	2
Administrative, Support, Waste Management	8	8	9	9
Education Services	4	4	5	5
Health Care and Social Assistance	35	37	40	36
Arts, Entertainment, and Recreation	6	5	7	6
Accommodation and Food Services	40	38	41	43
Other Services (except Public Administration)	38	39	37	40
Industries not classified	-	4	-	-
Total, All Establishments	310	325	332	337

Source: *Census Annual Economic Surveys, 2017, Census Zip Code Business Patterns, 2014, 2012, 2010

BUILT INFRASTRUCTURE

[§201.6\(d\)\(3\)](#) Housing units, community facilities, and transportation are all important factors when considering hazard resiliency. They provide the social services necessary during hazardous scenarios, safe cover for those wanting to stay, and a way to evacuate safely.

HOUSING UNITS

Knowledge of a community's housing base contributes to hazard and vulnerability analysis by identifying how many homes are at risk.

As Table 4 reveals, there has been very little change in the number of housing units in the County in the last decade; however, the number of vacant housing units has been steadily increasing, with over 30% of the total housing units in the County vacant. Often, unoccupied houses are not properly maintained and can cause additional debris hazards during high-wind events. According to the County's comprehensive plan update, nearly one in four of the estimated 7,396 housing units is at least 80-years old (*Northampton County Comprehensive Plan*, 2021). The aging housing stock combined with the high number of vacant housing units could create a significant amount of debris and additional surrounding damage during a high-wind event. The County has been aggressively working on demolishing derelict structures, with dozens having already been demolished since 2016 (Personal communications, Susan McGhee, March 22, 2021). County representatives indicated that families often own multiple homes, and, due to the decreasing population, one or more may be unused. The high percentage of vacant units could also be due to second homes, especially in the incorporated areas of the County, such as Cape Charles and Cheriton. The U.S. Census definition of a vacant housing unit includes those units entirely occupied by persons who have a usual

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residence elsewhere. There has been an abundance of new construction in many of the towns, which would lead to a high number of vacant units as well due to the purchase of second homes. County representatives state there is a housing study currently underway (Personal communications, Susan McGhee, March 22, 2021).

In 2009, 13% of the housing units in the County were single-wide mobile homes (*Northampton County Comprehensive Plan*, 2009). The plan emphasized their vulnerability and inability to maintain value; however, this percentage has been gradually decreasing over the last ten years, whereas in 2019, that number decreased by more than 50% (ACS, 2019). Manufactured homes are typically more susceptible to storm damages incurred from winds and flooding than other types of homes. The current percentage of mobile homes is a great improvement in the resiliency of the housing infrastructure for Northampton County.

In addition, the ACS five-year estimates for 2019 reveal there are 29 occupied housing units without phone service available. These residents are a high risk, as they may not be able to reach out for aid in the event of an emergency.

Table 4: Northampton County Housing

	2019*	2014**	2010***	2000****
Total Housing Units	7,396	7,322	7,301	6,547
Occupied	5,148	5,237	5,323	5,321
Vacant	2,248	2,085	1,978	1,226
Owner-Occupied	3,356	3,662	3,553	3,649
Renter-Occupied	1,792	1,575	1,770	1,672
Median Housing Value	\$176,800	\$162,500	-	-

Source: *ACS, 2014-2019, **ACS, 2010-2014, ***U.S. Census 2010, ****U.S. Census 2000

TRANSPORTATION

The measure of vehicles available to households is one indicator of a household's ability to evacuate when necessary.

In 2019, 10.7% of occupied residences were without a single vehicle (ACS 2019). Although a slight decrease since 2000, a significant number of people remain at high risk of not being able to remove themselves from harm's way in the event of a disaster. This, coupled with the 29 residences without phone service available, should be considered during the event of an approaching storm and potential mandatory evacuation. It is important to note that during times of heavy rain, particularly coupled with high tides and storm surge, many roads become inundated quickly. This situation will only worsen in the coming years with anticipated [sea level rise](#).

The Chesapeake Bay Bridge Tunnel (CBBT) provides residents access to Virginia Beach and the greater Hampton Roads metropolitan area. Although the official evacuation route is north on Route 13, many residents of the County still use the CBBT. During the summer of 2016, proposals for the Parallel Thimble Shoal Tunnel project were received and construction is currently underway. Ideally, this will ensure continued safe continuity between the Eastern Shore and the rest of the Commonwealth for safe travel, tourism, and to serve the over 1,000 residents who commute to work via the CBBT.

Table 5: Northampton County Vehicles Available per Household

Vehicles Available	2019*	2014**	2010***	2000****
None	549	598	563	672
One	1,728	1,731	1,911	1,988
Two	1,762	2,054	1,710	1,898
Three or more	1,109	854	904	763

Source: *ACS, 2014-2019, **ACS, 2010-2014, ***ACS, 2006-2010, ****U.S. Census 2000

Star Transit provides substantial, daily services up and down the Eastern Shore. Star Transit will operate during incoming hazardous events to help assist those without a vehicle and citizens with functional access needs evacuate; however, operations will cease once the hazard reaches a certain level. The Greyhound bus line offers travel times from the Eastern Shore across the Chesapeake Bay Bridge Tunnel, but only provides one stop in the Region. The cost is moderate; however, this service would likely not run during an emergency and it does not have the capacity to evacuate all residents without a vehicle.

Although the Region's airport and the helipad for Riverside Shore Memorial Hospital is located in Accomack County to the north, Northampton County does have Campbell Field, the Cheriton Volunteer Fire Company parking lot, and a parking lot located at the North Toll area of the Chesapeake Bay Bridge Tunnel that is often secured by police and fire personnel as a makeshift landing site for emergency transport via helicopter.

Prior to the construction of the railroad in 1884, water-based transportation dominated the Region and is still vital in the County. Used both commercially and recreationally for enjoyment and fishing activities, the waterways are essential to the economy of the County. Maintenance of the channels of the waterway in the County is of concern, particularly after large storm events where wind, waves, and flooding can greatly change the location of channels and increase the amount of erosion and thus, the sedimentation of channels and harbors.

Although the train tracks are no longer active, the Eastern Shore Rail Trail project is underway to turn the abandoned tracks into a bicycle and pedestrian trail that will serve 49.1 miles of the Eastern Shore. The trail will begin in Cape Charles in Northampton County and will follow the abandoned tracks north into the Town of Hallwood in Accomack County. Efforts to seek funding for construction, that would likely begin with the Cape Charles segment, is underway.

COMMUNITY SERVICES AND FACILITIES

Community facilities support the services and functions provided by the County government or in coordination with other public and private entities. These facilities enhance the overall quality of life for the County and its citizens. It is important to note what facilities are available in case of a hazard, and it is important to make an inventory of facilities that could be affected by a hazard.

According to FEMA estimates using Hazus®, none of the fire stations, police stations, or schools would be damaged during either a 1-percent-annual-chance flood or wind event.

PUBLIC SAFETY

Fire protection is provided by five independent all-volunteer fire companies. Community Fire Company (Exmore), Northampton Fire & Rescue Company (Nassawadox), Eastville Volunteer Fire Company, Cheriton Volunteer Fire Company, and Cape Charles Volunteer Fire Company work independently and through mutual aid to provide fire protection throughout the County (Personal communications, Hollye Carpenter, EMS Director/Chief, April 12, 2021). Information detailing apparatus for each locality can be found in their respective chapters.

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Ambulance services for 911 and emergency calls are provided from three locations in the County: Community Fire Company (Exmore), Northampton County EMS (Machipongo), and Cape Charles Rescue Service (Cheriton). While there are a few volunteers still active, services are primarily provided by 27 full-time and 15 part-time medics (Personal communications, Hollye Carpenter, April 12, 2021). The respective Town Chapters have details on the capabilities of each response facility. The relocation of the hospital from Nassawadox to Onancock has forced EMS in Northampton County to expand their workforce in order to maintain services (*Northampton County Comprehensive Plan*, 2021).

The Northampton County Sheriff's Office and the Eastern Shore Regional Jail are located in the Town of Eastville. The Sheriff's Office operates the 24-hour Regional Jail, which employs 53 people and is currently the largest department in the County government ([Northampton County Website](#)). The jail is a 248-bed facility and houses minimum and maximum male and female offenders. In addition, the Sheriff's Office dispatches to all County deputies, the Town of Exmore, Town of Eastville, and Town of Cape Charles and relays calls with Virginia Marine Resource Officers, Game Wardens, State Parks, and more ([Northampton County Website](#)).

The [Department of Emergency Management \(EM\)](#) coordinates efforts to ensure the County can mitigate, prepare for, respond to, and recover from any type of natural or human-caused disaster. The County uses an all-hazards approach to emergency preparedness, which means planning efforts consider all types of natural and human-caused disasters that could occur in the County. Also, the Department of Emergency Management provides disaster preparedness presentations, Emergency Response Training (CERT), and community CPR training. In 2012, the County established a Citizen Emergency Alert Program that provides critical information related to severe weather, road closures, missing persons, and evacuations ([Northampton County EMS Website](#)).

MEDICAL SERVICES

Riverside Shore Memorial Hospital is now located in the Town of Onancock in Accomack County and provides medical services to the Region. Please see the Public Safety section above for information about emergency medical and ambulance services.

There are two Eastern Shore Rural Health System Medical Centers in Northampton County: Eastville Community Medical Center and the Franktown Community Medical Center, which provides only Dental services (Personal communications, Susan McGhee, March 22, 2021).

PARKS AND RECREATION

The Northampton County Department of Parks and Recreation maintains one park, Indiantown Park, located in Eastville (52 acres). Indiantown Park is equipped with picnic shelters, a lit ball field, playground, a soccer field, recreation center, and 36-hole disc golf course. In addition to park maintenance, Northampton County Parks and Recreation offers programs such as summer camp, basketball, volleyball, softball, disc golf, dances, and more. The Northampton Middle School gym and soccer field are also used for summer camps (Personal communications, Susan McGhee, March 22, 2021).

The County maintains four water access sites of varying infrastructure, none which incur any fee for use. These facilities include: Oyster Harbor, Willis Wharf Harbor, Morley's Wharf, and Red Bank Boat Ramp (owned by the VA Department of Game and Inland Fisheries, but maintained by the County). The beaches of Cape Charles, Kiptopeke State Park (which also offers a wide variety of educational programs), and the Savage Neck Dunes Natural Area Preserve provide the only sand beaches publicly accessible by land. The Northampton County Preserve walkway and observation platform is located adjacent to the County landfill (Personal communications, Susan McGhee, March 22, 2021).

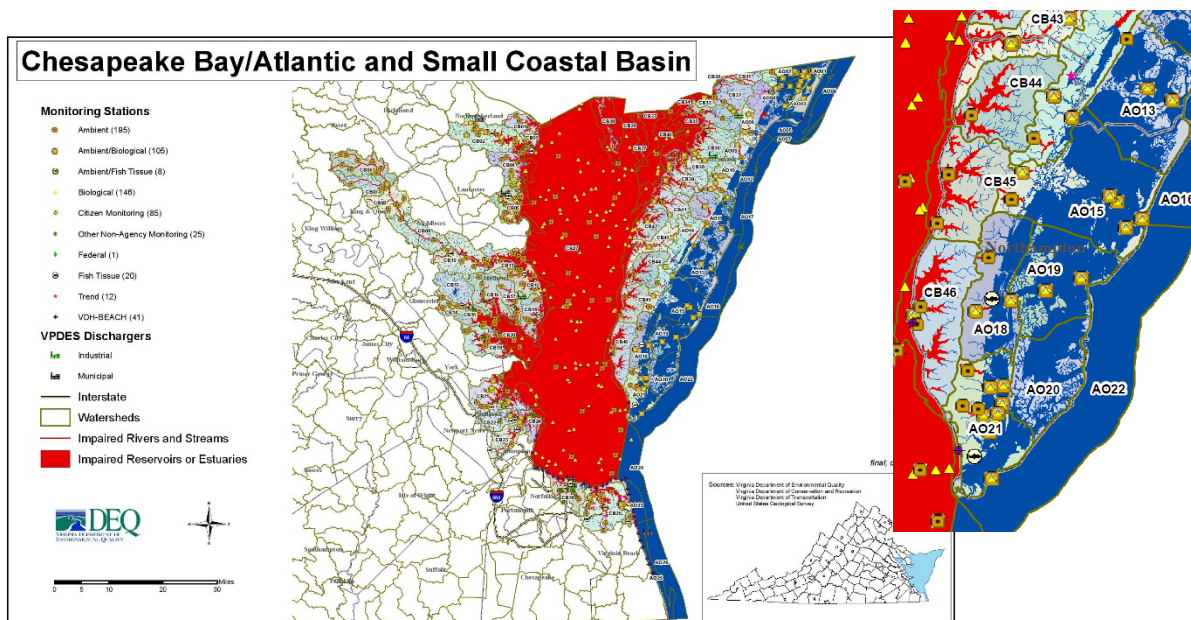
The Eastern Shore of Virginia National Wildlife Refuge (NWR) and Fisherman Island National Wildlife Refuge (NWR) are located on the very southern part of the County. Although there is no public access to Fisherman Island NWR, there is a natural kayak launch and a paved motor boat ramp available as well as walking trails, Refuge Visitor Center, and many public programs. The Nature Conservancy owns the majority of barrier islands on the Seaside of the County and all of their beaches are available for day use activities unless otherwise noted.

WATER SUPPLY AND WASTEWATER

Most residents rely on private wells and septic systems for their water supply and wastewater disposal; however, about a quarter of the County's population relies on the municipal water systems of Cape Charles, Eastville, Exmore, Bayview, Riverside, and the County Complex. There are three waste water treatment plants (WWTP) in the County for residential sewage treatment, located in Machipongo, Exmore, and Bayview. These facilities serve approximately 15-25% of residents (*Northampton County Comprehensive Plan*, 2009). The remaining residents rely on septic tank and drainfield systems and cesspools or pit privies. In the past, poor soils limited development on some vacant parcels of land in the County, but above-ground septic technologies have made some previously undevelopable parcels available; however, these systems are much more expensive to build and to maintain than traditional systems.

Discharge from WWTP and proper maintenance of private systems is important to maintain the health of both the surface and ground water. Although surface water in the County is not used for human consumption, it is important for recreation and shellfish harvesting, and thus water quality must be protected in accordance with the State Water Control Law. According to the 2016 Virginia Department of Environmental Quality (VDEQ) *Water Quality Assessment Integrated Report*, all of the bayside creeks and most of the seaside creeks in the County are considered impaired (see Figure 2) due to various causes such as pH, Enterococcus, Fecal Coliform, benthic-macroinvertebrate bioassessment, E. Coli, dissolved oxygen levels, etc.

Figure 2: Impaired Waters of the Chesapeake Bay/Atlantic and Small Coastal Basin area of Eastern Virginia



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The Eastern Shore's designation as a sole source aquifer is discussed in the 2009 *Northampton County Comprehensive Plan*, and strategies for preventing additional salt water intrusion can be found in the [*Eastern Shore Ground Water Supply Protection and Management Plan*](#). The areas of the County near shorelines are expected to be the most vulnerable to salt water intrusion, which has been experienced in specific areas, such as the Town of Cape Charles, where steps have been taken to treat their water for iron and salinity. The Eastern Shore of Virginia Ground Water Committee has historically and will continue to assist the County in monitoring the quantity and quality of ground water in the County.

In October of 2020, a circuit court determined that Northampton and Accomack Counties could benefit from joining the Hampton Roads Sanitation District (HRSD) and the two counties were incorporated into HRSD's jurisdiction. The Counties are now able to negotiate contracts with HRSD for operation, maintenance, and updates to sewer systems (*Northampton County Comprehensive Plan*, 2021). It is also important to note that localities within both Counties are not obligated to transfer services to HRSD, but have the option if they choose. The first phase is scheduled to be completed in 2023 and will connect the Northampton County towns of Exmore and Nassawadox to the Town of Onancock's treatment facility in Accomack County. Another phase of the project could potentially connect the towns of Eastville and Cheriton to the treatment facility in Cape Charles (*Northampton County Comprehensive Plan*, 2021). This project will have significant effects on Northampton County, as with additional water resource protection, businesses, jobs, and housing are extremely likely to increase throughout the area.

SOLID WASTE

The County operates six waste collection sites, all of which offer recycling, used oil, and scrap metal, including appliances. None accept commercial waste, yard waste, or tire disposal (Personal communications, Susan McGhee, March 22, 2021). The County now operates a single transfer station located adjacent to the previous landfill near the community of Oyster. The waste is regularly transferred to the landfill by tractor trailers. This meets the disposal needs for commercial operations, construction companies, and households.

POWER AND COMMUNICATIONS INFRASTRUCTURE

The main Accomack & Northampton Electric Cooperative (ANEC) power line was replaced in 2014 between Tasley and Exmore. Maintaining and advancing our infrastructure is key to increasing our resiliency in the occasion of a hazard. One 20-megawatt solar project has been completed in Northampton County. This is a new land use and has required rezoning and additional permits.

The Eastern Shore of Virginia Broadband Authority (ESVBA) network of fiber cable stretches from Virginia Beach to the Maryland border and serves as the electronics 'backbone' by providing high-speed internet to both Counties. There is a high percentage of underserved households in the County, as the majority of service is provided along Route 13. Wide-spread high-speed internet provides residents the capability to take advantage of educational opportunities, work from home, apply to jobs, etc.

DRAINAGE DITCHES

VDOT is responsible for the maintenance of ditches along state-maintained roadways and for all ditches along County roads and between properties that drain state ditches. Maintenance of ditches along privately-owned roadways is the responsibility of the owner (Personal communications, Susan McGhee, March 22, 2021).

SCHOOLS

Schools are important to consider for disaster readiness and during an actual emergency. Schools offer an opportunity to teach children and adults how to effectively and efficiently respond to many emergency situations. They are also areas of concentrated high-risk individuals, particularly primary schools with the youngest students.

The Northampton County Public School Division has a Crisis Management Team that is responsible for emergency planning.

There are three schools in the Northampton County School District, two elementary schools, and one comprehensive middle/high school. In addition, there are four private schools in the County, including Broadwater Academy, Montessori School, Shore Christian Academy, and Cape Charles Christian School, all of which also have pre-kindergarten programs (Personal communications, Susan McGhee, March 22, 2021). According to FEMA estimates using Hazus®, during a 1-percent-annual-chance wind event, all eight of the schools would be damaged to some degree. Occohannock Elementary is anticipated to suffer the most, perhaps creating enough damages to cause a closure of 106 days. There are also an estimated 14 daycare facilities in the County, with locations in Cheriton, Exmore, Machipongo, Nassawadox, Franktown, and Cape Charles (Personal communications, Susan McGhee, March 22, 2021). There are no emergency shelters in the County for wind events, but the Northampton High school serves as the designated emergency shelter for non-wind events. Northampton works with Accomack County to share congregate shelter facilities as needed. Additional emergency shelter could potentially be at the old middle school and eventually the Community Center.

CULTURAL RESOURCES

The only County owned museum is in its Administrative Building. The Court House located in Eastville maintains the oldest running court records in the nation. There are several additional cultural and historical entities, resources, and museums, including Cape Charles Historical Society, Eastern Shore's Own Art Center, Barrier Island Center, and Arts Council of the Eastern Shore, to name a few. The Barrier Island Center offers an interpretive art center that comprehensively teaches about the history of the Eastern Shore and its culture.

The County is steeped with history, as 28 buildings are registered with the Virginia Department of Historic Resources (VDHR) as official Historic Places. The County Courthouse Historical District is part of the Eastville Historical District at the county seat of Eastville.

NATURAL ENVIRONMENT

Northampton County, entirely within the Atlantic Coastal Plain, is relatively flat with the elevation ranging from sea level to 50 feet above mean sea level (*Northampton County Comprehensive Plan*, 2021). Flat areas are typically more prone to flooding problems, particularly where the water table is high and the hydric soils dominate.

There are 12 barrier islands in Northampton County, which all play a large role in protecting the area from erosion. There are five large creek basins leading to the Chesapeake Bay and six significantly smaller creeks on the east coast leading to a series of seaside marshes and bays and ultimately, the Atlantic Ocean. The County's natural environment consists of wetlands, dunes, beaches, forests, and waterways.

HAZARD PREPAREDNESS & COMMUNITY CAPABILITIES

PREVIOUS HAZARD MITIGATION PLANS

[§201.6\(b\)\(3\)](#), [§201.6\(d\)\(3\)](#) Northampton County has participated in the hazard mitigation planning process since 2006. The County's Comprehensive Plan was just updated and adopted in April of 2021.

Table 6: Northampton County Hazard Mitigation Resources

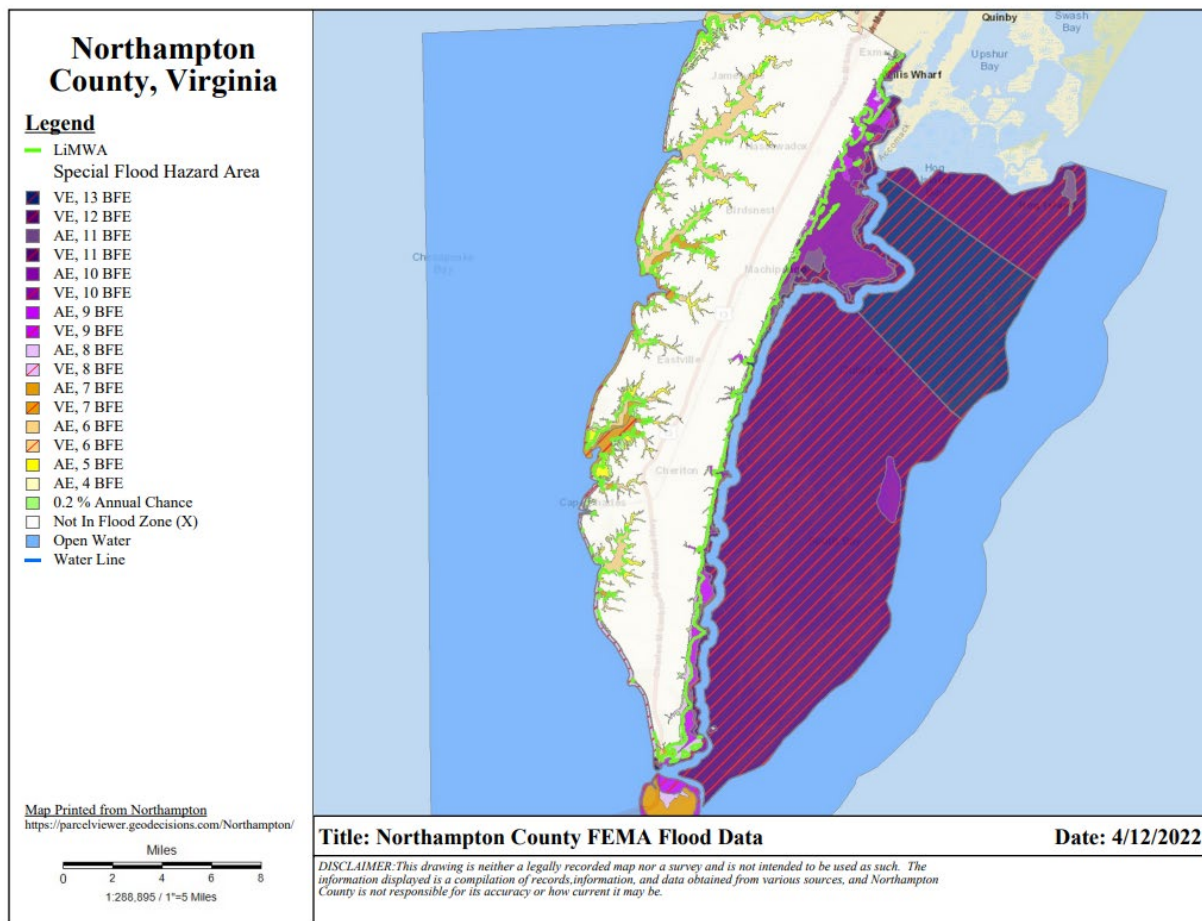
	Ordinances, Plans, & Publications															Resources, Committees			
Authority	Building Code	Chesapeake Bay Act	SWMP	Hazard Mitigation Plan	Comprehensive Plan	Zoning Ordinance	Storm Water Regulations	Transportation Infrastructure Inundation Vulnerability Report	All Hazards Preparedness	Emergency Operations Plans	Mutual Aid	Neighborhood Emergency Help	Viginia Hurricane Evacuation	Oil & HazMat Response Plan; HazMat Commodity Flow		Ground Water Committee	Navigable Waterways Committee	Climage Adaptation Working Group	ES Disaster Preparedness Coalition
County	*		*		*	*													
Regional								*	*	*	*	*		*		*	*	*	*
State		*					*						*						
Federal		*																	

NATIONAL FLOOD INSURANCE PROGRAM & HAZARD MITIGATION GRANT PROGRAM

NFIP

§201.6(d)(3) As of 2022, there have been 15 Federal Disaster Declarations for flooding in the County for hurricanes, flooding, and severe storms ([FEMA Disaster Declarations, 2022](#)). According to the 2022 FEMA NFIP Data Report, the County contains one severe repetitive loss (SRL) and 11 repetitive loss (RL) properties, which is a substantial increase from having no SLR or RL in 2015. Similar to Accomack County, there has been a steady decrease in the total number of insurance policies as more homeowners learn of the changes to the 2015 Flood Insurance Rate Map (FIRM).

Figure 3: Northampton County FIRM Base Flood Elevation (BFE)



With the 2015 updates to the FIRM, there were changes to the associated Special Flood Hazard Area (SFHA) for the unincorporated areas of the County. The total area of the SFHA is now 221.8 square miles, representing a gain of 2.9 square miles and loss of 6.9 square miles for a net decrease of 4.0 square miles including 341 buildings. The area within the V zone is now 181.7 square miles, representing a gain of 2.9 square miles and a loss of 29.3 square miles for a net decrease of 25.7 square miles including 65 buildings. The 406 total buildings removed from the SFHA and V zone are no longer required to have flood insurance when under a mortgage (FEMA Flood Risk Report Northampton County, 2016). The number of buildings with policies, as shown in Table 7, decreased significantly from

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2011 to 2016, which is extremely important as there are 139 previously insured buildings that no longer carry flood insurance. Without insurance, should a major storm cause flooding, it would take the resident, business, and overall community much longer to rebound following a disaster. Net loss of lands and buildings that are in the FIRM SFHA and V zone may give the residents and communities a misconception about vulnerability.

The County does not participate in the Community Rating System (CRS) program. The only Town in the County that participates in the program is Cape Charles. More information on repetitive loss properties, NFIP policies and claims, and the CRS program can be found in Chapter 6: Coastal Flooding and Chapter 9: The Region.

HMGP

The County of Northampton has historically participated in the Hazard Mitigation Grant Program. To date, 24 structures in the County have been elevated out of the flood plain, but no houses have been relocated or razed under the program. See Table 7 for more details.

HAZARD PROFILE

§201.6(d)(3) The County’s primary risk is associated with coastal and stormwater flooding.

PANDEMIC RESPONSE AND READINESS

Northampton County followed guidelines put forth by the Commonwealth. The [Northampton County website](#) provided residents updates and educational resources in regards to mask requirements, closures/openings, businesses, available grants, vaccine information, symptoms and quarantine protocols, fact sheets, executive orders, town orders, food, housing, and energy assistance, elections, schools, mental health, and so-on. Residents were encouraged to stay home and were provided information on complimentary delivery services for prescriptions, food, and other supplies. Visitors were encouraged to delay their vacation and return once it was safe. Northampton County public schools provided free meals for students that were on a 5-day virtual plan during the 2020 school year. Students were able to receive both breakfast and lunch through curbside pick-up.

WIND

The peak wind gusts predicted by Hazus® during a 1-percent-annual-chance wind event are between 90 and 93 mph for the County. Hazus® damage estimates are flawed, as the input data is flawed. Because the data used to run the Hazus® simulation for the County did not include the number of stories of the buildings, the Hazus® estimate can be assumed to be a gross underestimate of damages that the County would incur. Hazus® estimates approximately 92 buildings will be at least moderately damaged. This is over 1% of the total number of buildings in the region. There are an estimated 7 buildings that will be completely destroyed. Figures 4, 5, and 6 summarize the expected building damage by occupancy and type as well as the expected loss resulting from wind damage.

Figure 4: Hazus® Expected Building Damage by Occupancy

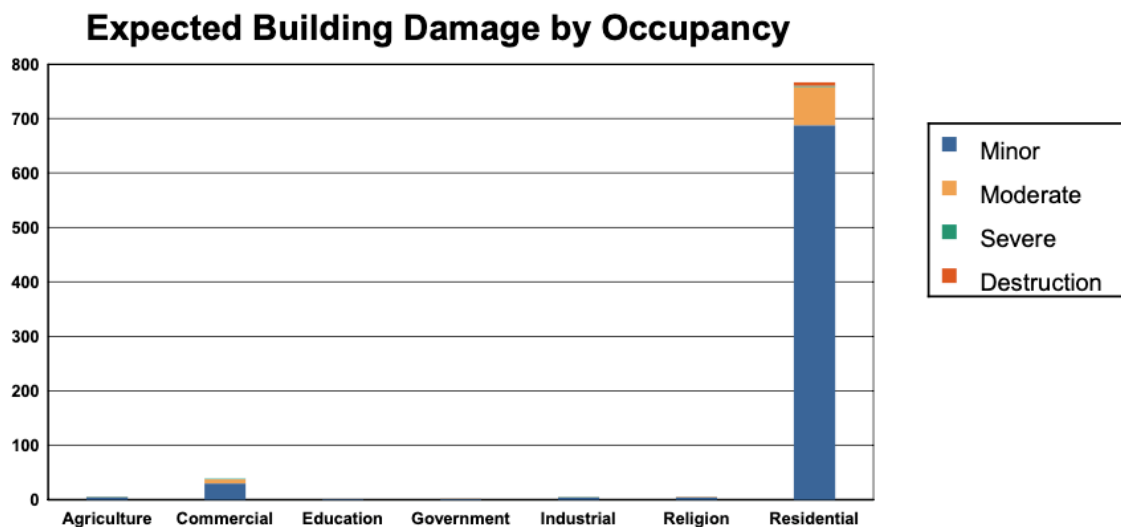


Table 2: Expected Building Damage by Occupancy : 100 - year Event

Figure 5: Hazus® Building Exposure by Type

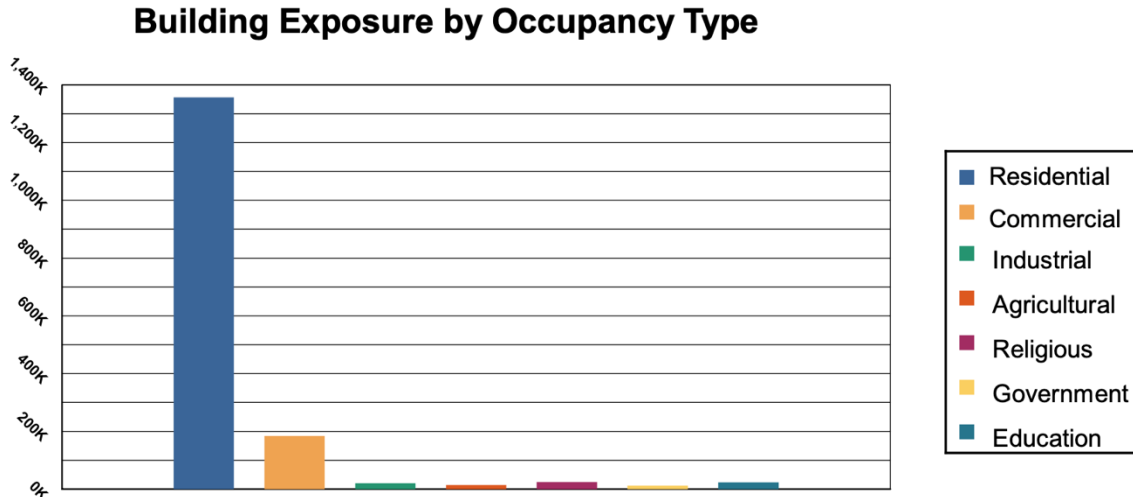


Table 1: Building Exposure by Occupancy Type

Figure 6: Hazus® Expected Loss Estimates

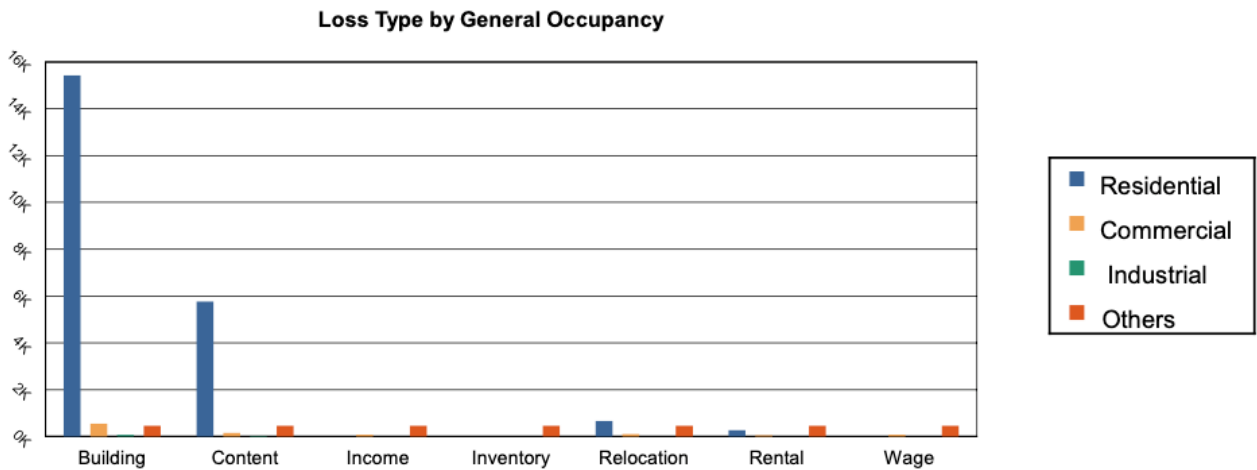


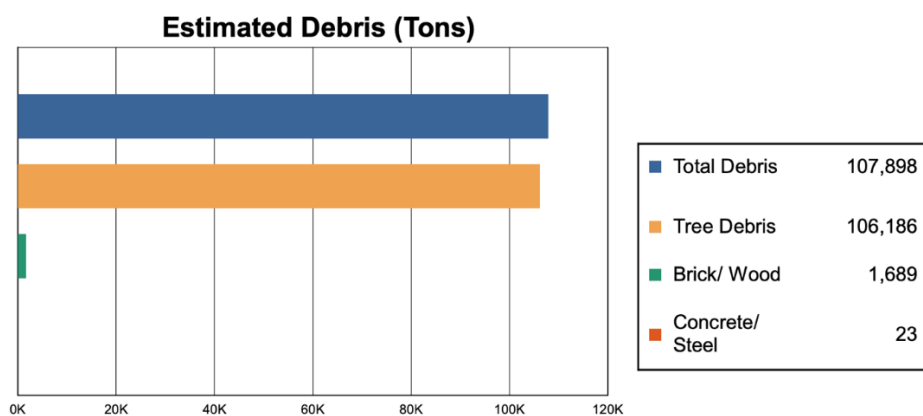
Table 5: Building-Related Economic Loss Estimates

(Thousands of dollars)

Hazus® estimates the number of households that are expected to be displaced from their homes due to a 100-year hurricane and the number of displaced people that will require accommodations in temporary public housing shelters. The model estimates that 9 households will be displaced and five people will seek temporary shelter.

The Hazus® model also estimates debris generated by a 100-year event and breaks down the debris into four general categories: brick/wood, reinforced concrete/steel, eligible tree debris, and other tree debris. This distinction is due to different equipment being needed to handle different type of debris. The model estimates that a total of 107,898 tons of debris will be generated. Of the total amount, 95,921 tons (89%) is Other Tree Debris. Of the remaining 11,977 tons, Brick/Wood comprises 14% of the total, Reinforced Concrete/Steel comprises of 0% of the total, with the remainder being Eligible Tree Debris. If the building debris tonnage is converted to an estimated number of truckloads, it will require 68 truckloads (@25 tons/truck) to remove the building debris generated by the hurricane. The number of Eligible Tree Debris truckloads will depend on how the 10,265 tons of Eligible Tree Debris are collected and processed. The volume of tree debris generally ranges from about 4 cubic yards per ton for chipped or compacted tree debris to about 10 cubic yards per ton for bulkier, uncompacted debris.

Figure 7: Hazus® Estimated Debris



After the 2014 tornado that ripped through Cherrystone Family Campground and RV Resort, a large amount of clean-up and debris removal was required and VDOT came in to assist (Personal communications, Susan McGhee, March 22, 2021).

The Chesapeake Bay Bridge Tunnel (CBBT), the County's connection to the rest of the Commonwealth, has travel restrictions and will close to all traffic when winds exceed 65-mph; therefore, the official evacuation route is north. The Virginia Department of Emergency Management (VDEM) provides residents with clarity on whether they should evacuate. This information can be accessed through their website: [Know Your Zone \(vaemergency.gov\)](http://vaemergency.gov).

COASTAL EROSION

Northampton County is experiencing erosion along the bayside shoreline and the barrier island shorelines on the seaside. The inland seaside shoreline is relatively protected from erosion by the barrier islands, marshes, and bays to the east. That said, the shifting and erosion of the barrier islands and loss of marshes to habitat migration and rising seas may leave the inland seaside shoreline in a more exposed position in the future. Ongoing dredging and living shoreline projects around these barrier islands have helped to protect the land inland.

The erosion rates on the barrier islands range on average from 7 to 17 feet per year, but a single high intensity nor'easter or hurricane could erode more than that in just a few days. The "Resilient Environment" chapter in the 2020 Northampton County Comprehensive Plan seeks to ensure that existing shorelines are preserved to the maximum extent possible. The Plan lists strategies to help mitigate erosion which includes enforcing regulations and land conservation programs, providing education on conservation and shoreline management, pursuing funding to complete shoreline restoration projects such as living shorelines, and more (Northampton County Comprehensive Plan, 2020). Considering the barrier islands protect the peninsular shorelines, it is important to continue to target high erosion areas and have a plan to address these issues.

Table 8 illustrates the areas in the County identified by the 2002 VIMS *Shoreline Situation Report* and updated with 2016 information from local County representatives. Arlington Plantation, not listed in Table 8, is also experiencing coastal erosion at unknown rates (Personal communications, Susan McGhee, March 22, 2021).

Table 7 : Northampton County Areas Experiencing Coastal Erosion

Area	Location Description	Erosion Rate (feet/year)	Mitigation Strategy
Critically Eroding Areas			
Tankards	Savage Neck, southwest of Eastville	20	
Moderately Eroding Areas			
Smith	Savage Neck, north of Tankards	with maintained groins & bulkheads, ~0	Groins, bulkheads
Silver Beach	Occohannock Neck	with maintained groins, bulkheads, rip-rap, ~1	Groins, bulkheads, rip-rap (since the 1940's)
Pickett's Harbor Beach	Between William b. Trower Bayshore NAP & Butler's Bluff	>1	None
Butler's Bluff	Between Kiptopeke State Park & Arlington, bayside	with maintained groins, bulkheads, and breakwaters, ~ 0	Groins, bulkheads, and breakwaters

COASTAL FLOODING

According to the 2016 FEMA Flood Risk Report, 222.2 square miles of the County are in the SFHA and 181.8 square miles are in the V zone. There are an estimated 7,556 buildings in the County with a total building replacement value (excluding contents) of \$1.637 billion dollars. Approximately 92.79% of the building exposure are associated with residential housing (FEMA Hazus®).

Hazus® estimates that approximately 3 buildings will at least be moderately damaged in the event of a 1-percent chance flood event. This is over 8% of the total number of buildings in the scenario. It's estimated that at least one building will be completely destroyed.

Figure 8: Hazus® Expected Building Flood Damage

Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0	0	0	0	1	100
Education	0	0	0	0	0	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0	0	0	0	0	0
Religion	0	0	0	0	0	0	0	0	0	0	0	0
Residential	0	0	1	50	1	50	0	0	0	0	0	0
Total	0		1		1		0		0		1	

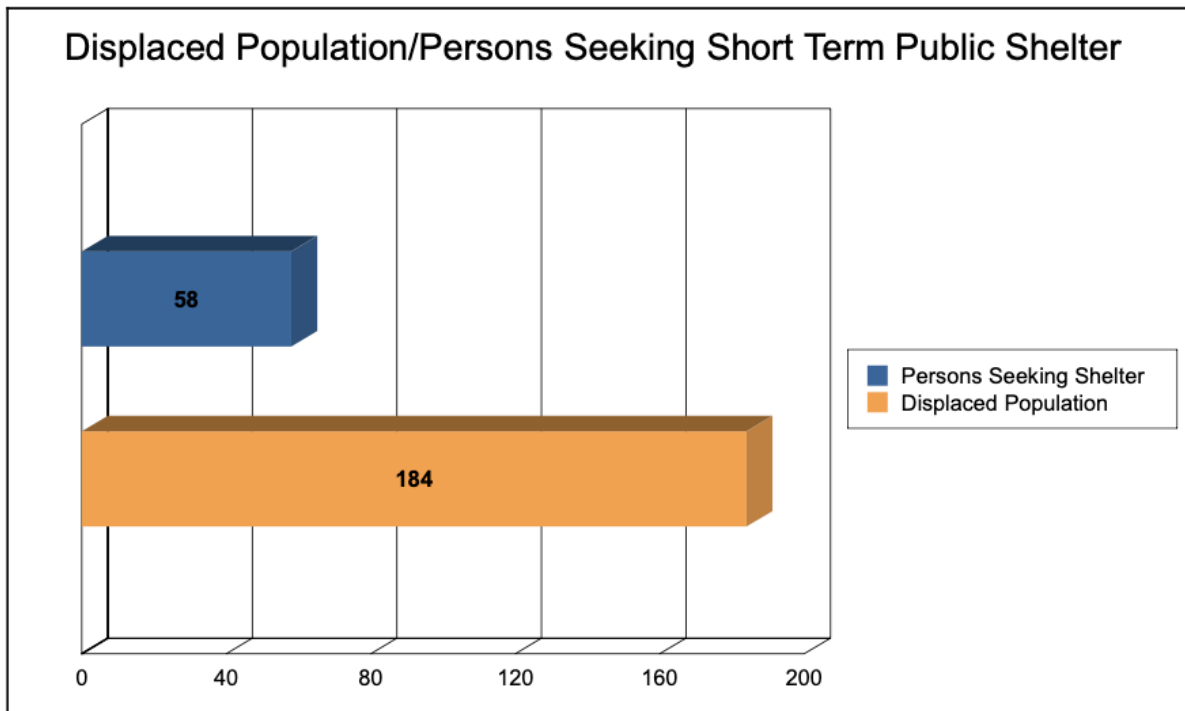
Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	0	0	0	0	0	0	0	0	0	0	0	0
ManufHousing	0	0	0	0	0	0	0	0	0	0	0	0
Masonry	0	0	0	0	0	0	0	0	0	0	0	0
Steel	0	0	0	0	0	0	0	0	0	0	0	0
Wood	0	0	1	50	1	50	0	0	0	0	0	0

Northampton County

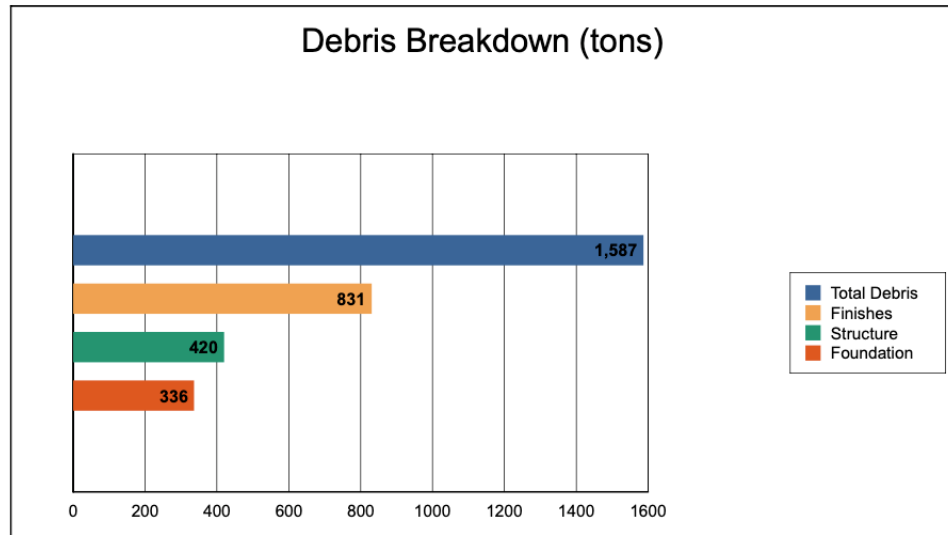
The model estimates the number of households expected to be displaced from their homes, the associated potential evacuation, and the number of those displaced that will require accommodations in temporary public shelters. The model estimates 61 households (or 184 of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 58 people (out of a total population of 12,389) will seek temporary shelter in public shelters.

Figure 9: Hazus® Estimated Displaced Population



Hazus® also estimates the debris generated by a 1-percent-annual-chance flood event. This model breaks down debris into three categories: finishes (dry wall, insulation, etc.), structural (wood, brick, etc.), and foundations (concrete slab, block, rebar, etc.). The model estimates that a total of 1,587 tons of debris will be generated. Of the total amount, Finishes comprises 52% of the total, Structure comprises 26% of the total, and Foundation comprises 21%. If the debris tonnage is converted into an estimated number of truckloads, it will require 64 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Figure 10: Hazus® Estimated Debris Generated from a 1-percent-chance-flood



The total economic loss estimated in this scenario is \$10.49 million, which represents 2.13% of the total replacement value of the buildings. Building losses are broken down into two categories: direct building losses and business interruption losses. Direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. Business interruption losses are associated with the inability to operate a business due to damage sustained during the flood event as well as the temporary living expenses for those displaced from their homes. Total building related losses totaled \$6.55 million with 38% related to business interruption. Residential occupancies made up 65.45% of the total loss. Figure 11 provides a summary of the losses associated with building damage while Figure 12 provides a visual of risks to infrastructure.

Figure 11: Hazus® Estimated Losses Associated with Building Damage

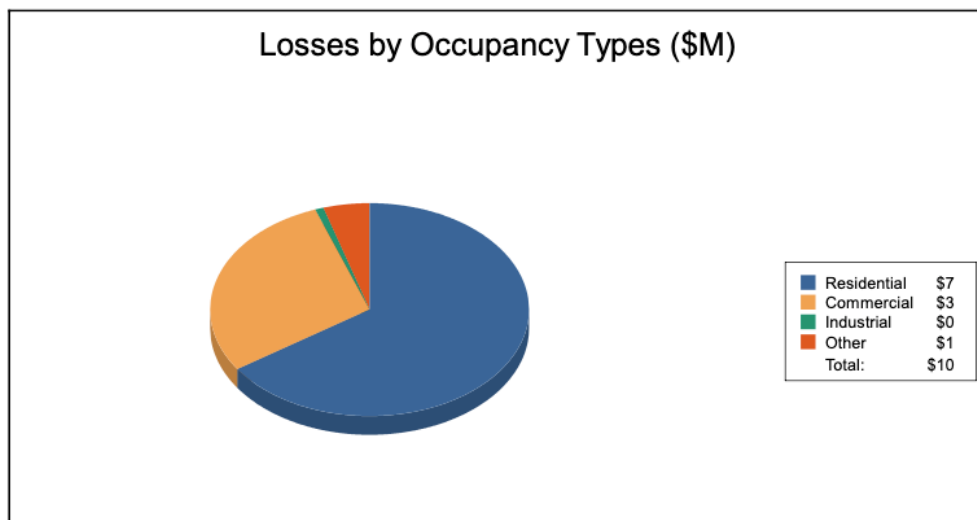
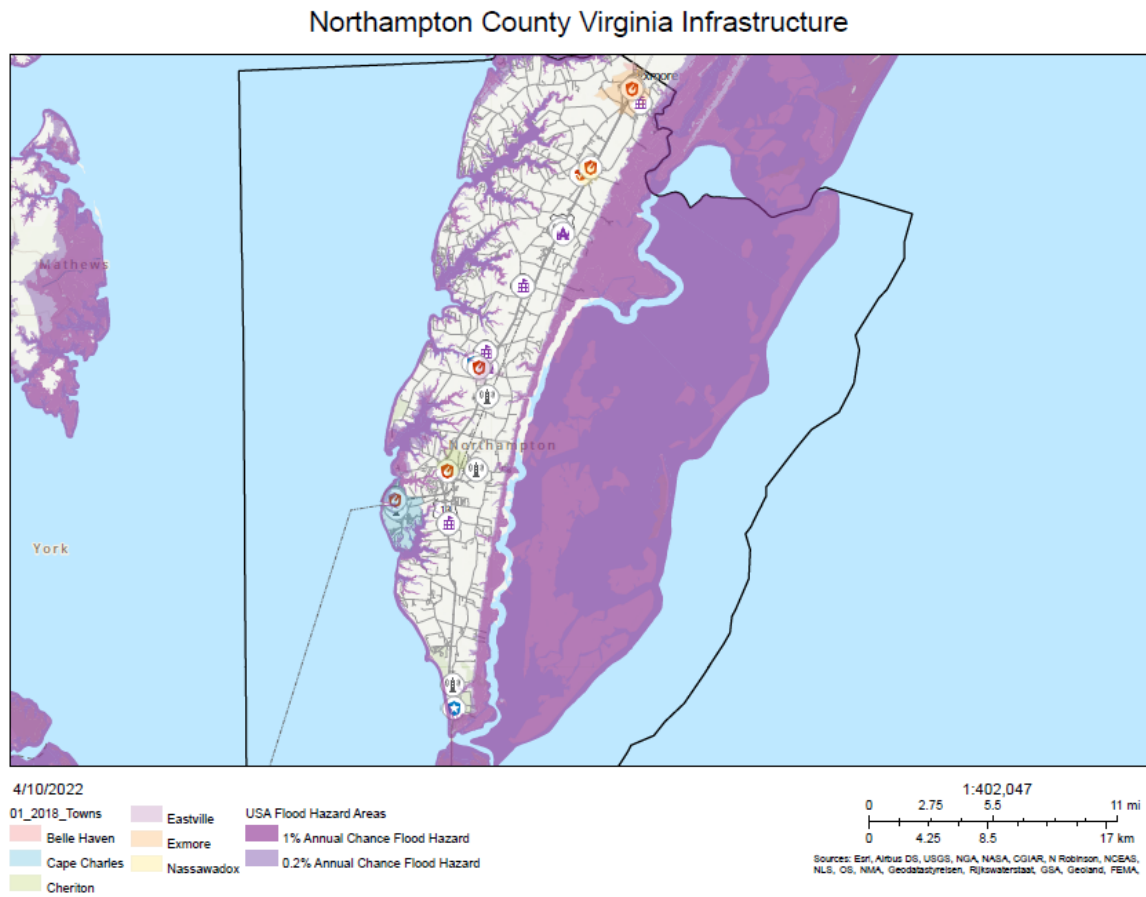


Figure 12: Flood Hazards to Infrastructure in Northampton County



SEA-LEVEL RISE

Of the County's 502 miles of roads, two miles (0.4%) is projected to be inundated with one foot of sea-level rise (SLR) (estimated year 2025-2050), 16 miles (3.2%) with two feet (within 2045-2090), and 26 (5.2%) with three feet (sometime after 2060) (*Eastern Shore of Virginia Transportation Infrastructure Inundation Vulnerability Assessment (TIIVA)*, 2015). Even small amounts of SLR make rare floods more common by adding to tides and storm surge. With three feet of SLR, there are many communities and economically critical facilities (including various working waterfront areas) that would be disconnected, inaccessible, or have the majority of the roads inundated. Without significant engineering solutions in the coming years, it should be expected that the livelihood and safety of communities and the integrity of these roadways in the County will largely decline. Figure 5 shows a map from the TIIVA assessment of the areas more susceptible to SLR effects in the County.

Figure 13: Northern Northampton County Transportation Infrastructure Inundation Vulnerability Assessment

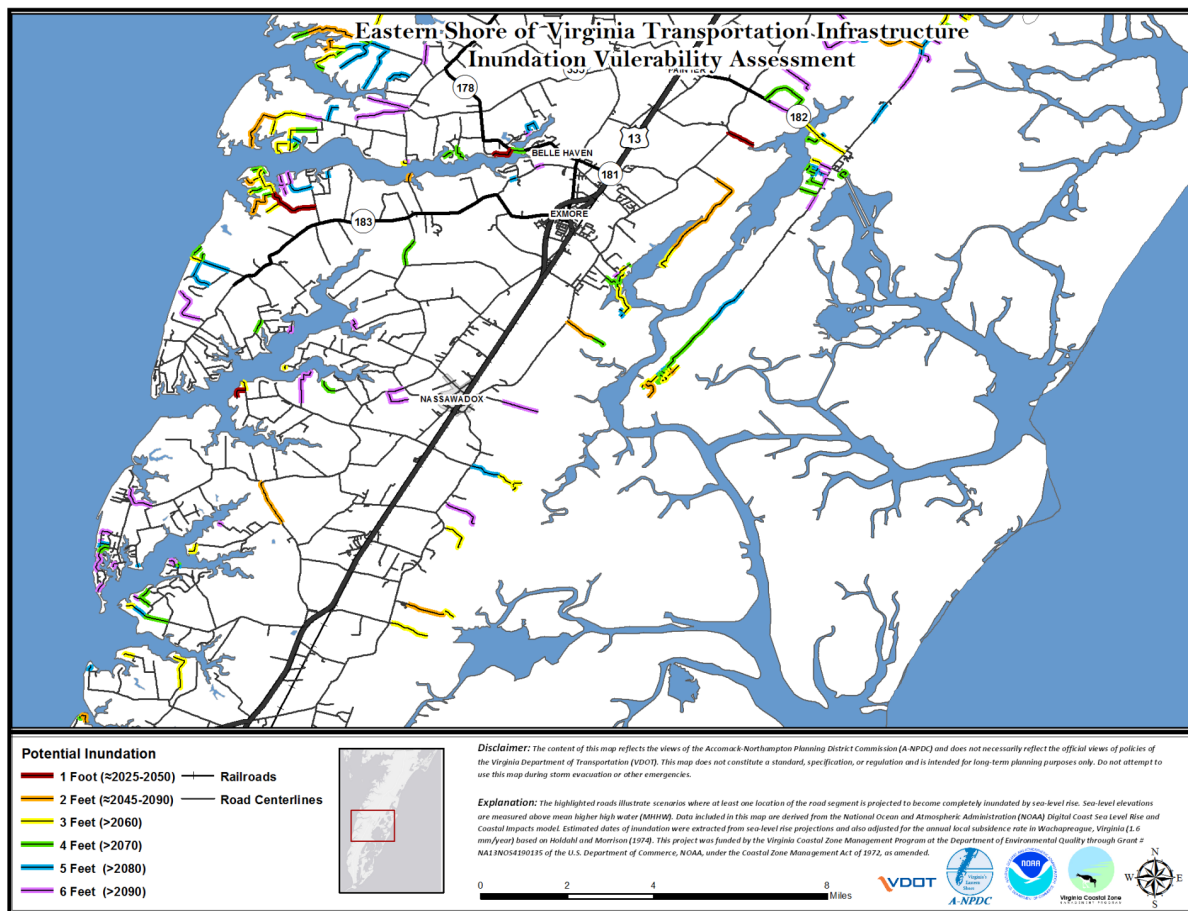


Figure 14: Northampton County, 2040 Conditions

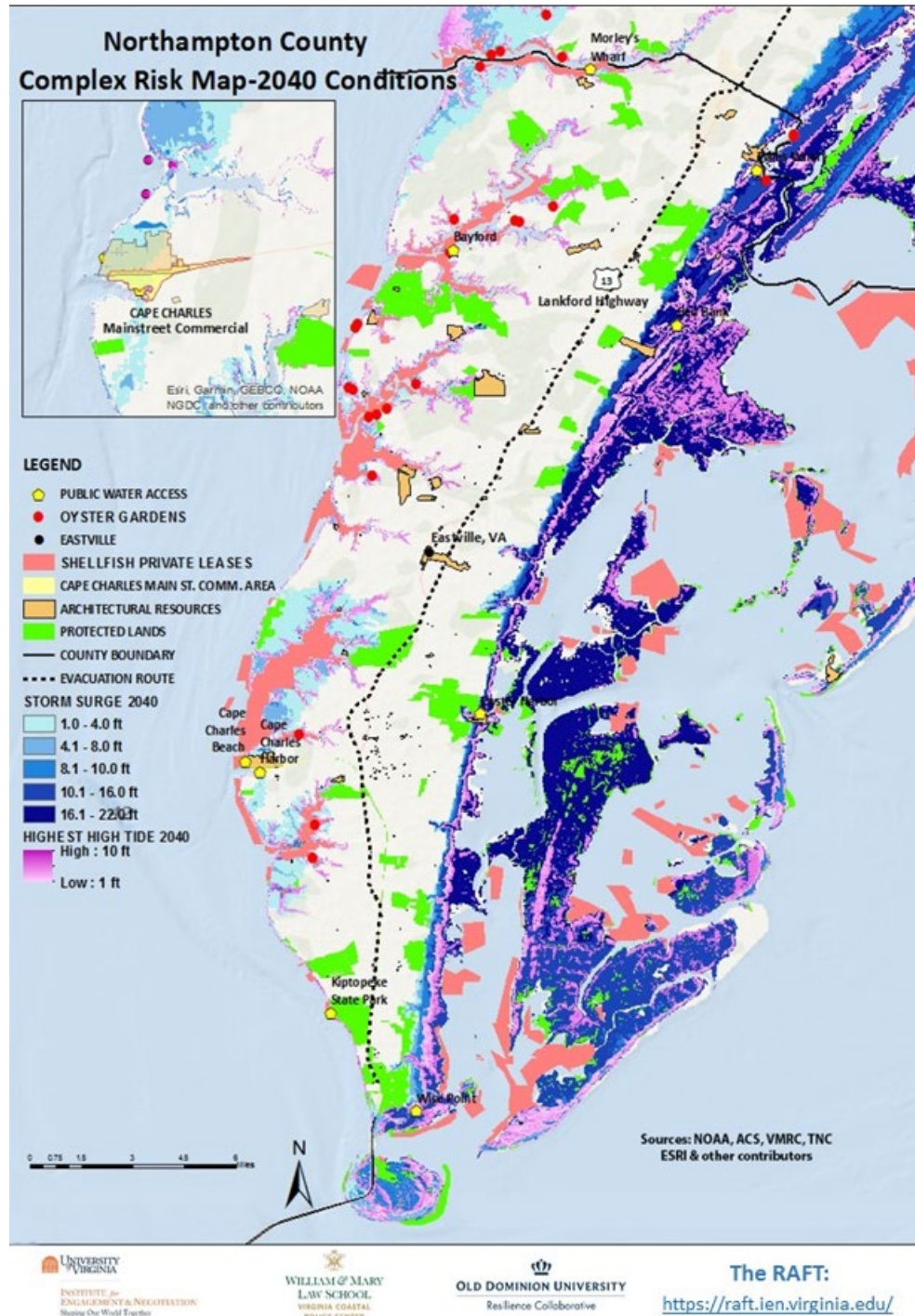
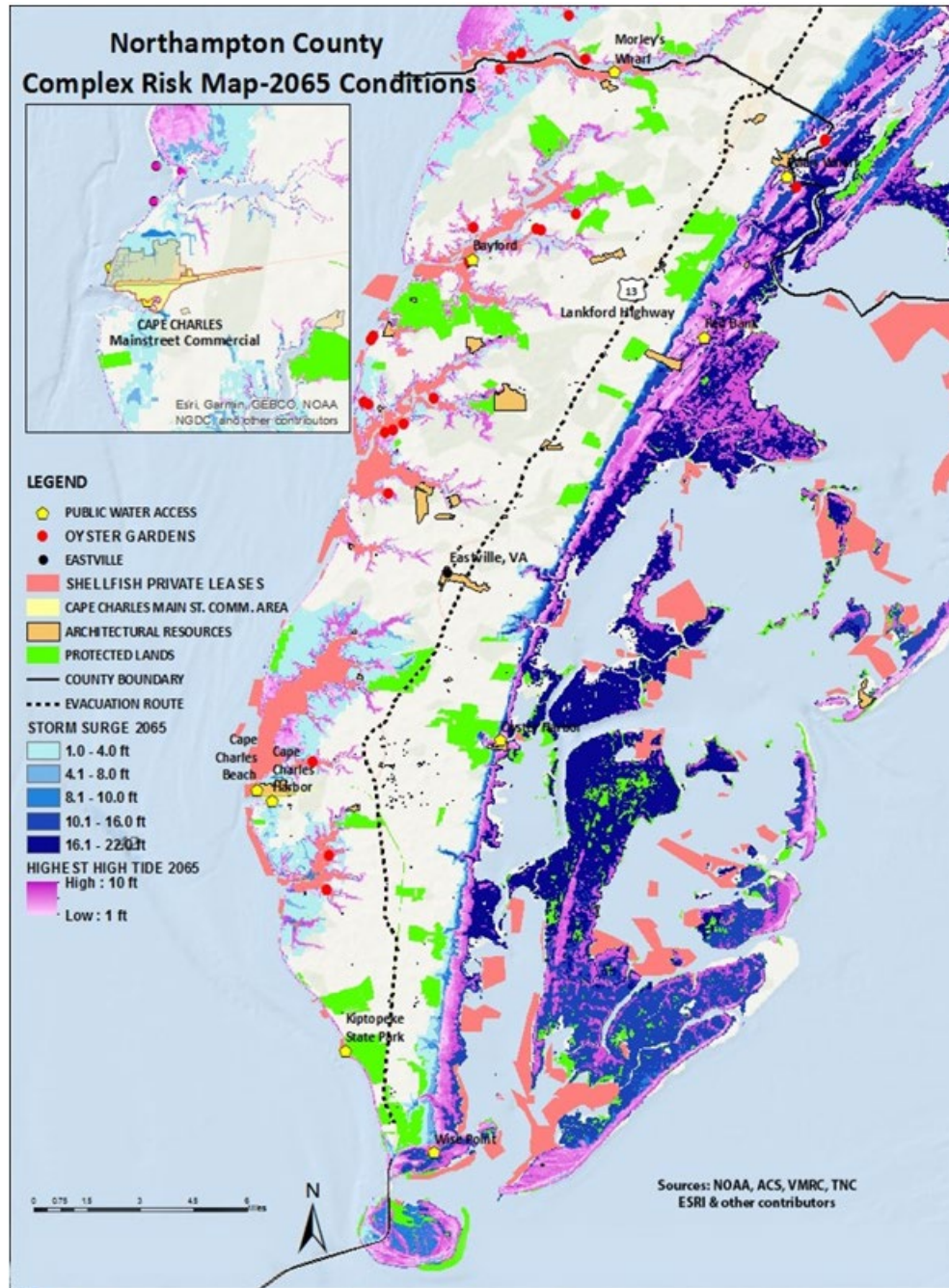


Figure 15: Northampton County, 2065 Conditions



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STORMWATER FLOODING

Educating residents about the risks associated with stormwater flooding and standing water, such as septic contaminants and mosquito-borne illnesses, is an important step in mitigating potential negative impacts to the population.

Local officials identified various areas in the unincorporated portions of the County that have stormwater flooding problems. These areas include, but are not limited to:

- Village of Hare Valley
- Village of Weirwood
- Village of Cheapside - Between Arlington and Rt 13, septic systems and private wells
- Village of Townsend
- Village of Johnsontown

HAZARDS OF LOCAL SIGNIFICANCE

Additional hazards to those included below can be found in Chapter 9: The Region.

WATER QUALITY

Since County residents all rely on private wells and many people in the County rely on the fisheries and aquaculture industries, fish kills and the declining health of the Chesapeake Bay impact the residents and the economics of the Region. In addition, bacterial impairments can discourage tourism and recreational use of our beaches and waters.

MOSQUITOS-BOURNE ILLNESSES

Mosquito-borne illnesses such as West Nile and Zika virus pose a potential risk, especially with standing water from intense rain events and subsequent stormwater flooding.

SNOW AND ICE STORMS

With snow and ice storms there are often school closures, power outages, CBBT closures, and economic issues from damages to agriculture.

FIRE AND SMOKE

According to 2019 ACS five-year estimates, the majority (61.6%) of residents in Northampton County rely on electricity to heat their homes. Other County residents heat their homes with fuel oil, kerosene, etc. (15.3%), bottled, tank, or LP gas (18.2%), or wood (3.1%). In times of low humidity and high winds, the County is susceptible to field and forest fires as well.

CRITICAL FACILITIES

The following table lists the critical facilities and their relative importance to the County.

Table 8: Northampton County Critical Facilities

Facility	HMP 2021	Hazards	No of People Affected	Loss potential	Relocation Potential	Retrofit Potential
County-Owned Properties						
County Courthouse Complex	X	Wind	11,885+	Devastating	No	Yes
Sheriff's Department/Emergency Operations Center	X	Wind	11,885+	Devastating	No	Yes
Fire/EMS	X	Wind	11,885+	Devastating	Yes	Yes
Regional Jail	X	Wind	11,885+	Devastating	No	Yes
Not County-Owned						
Chesapeake Bay Bridge	X	Wind, Flooding, Ice	45,000+	Devastating	No	Yes
Eastville Center	X	Wind	11,885+	Devastating	Yes	Yes
Cape Charles VORTAC Beacon	X	Wind, Flooding, Ice, Erosion	Transcontinental air traffic	Inconvenience	No	No
Schools	X	Wind, Flooding	5,000+	Major Disruption	Yes	Yes
County Courthouse Complex Water Tower	X	Wind, Ice	500+	Devastating	No	No
County Courthouse Complex Waste Water Treatment Plant	X	Wind, Flooding	500+	Disruption	No	Yes
Oyster, Willis Wharf Harbors	X	Wind, Flooding, Ice	11,885+	Disruption	No	Yes
Cell Phone/Communication Towers	X	Wind, Ice	11,885+	Devastating	No	Yes
Broadband Network	X	Wind, Flooding	11,885+	Disruption	No	No
Bayview Waste Water Treatment Plant	X	Wind, Flooding	81 Residential Connections	Disruption	No	Yes

FINDINGS

1. The greatest threats to Northampton County are coastal flooding and high wind events. Erosion, stormwater flooding, winter storm events, and water quality issues also pose significant threats to the County.
2. Established neighborhoods in the County are at great risk to damage in a wind event, not solely from wind, but from wind-damaged trees and other airborne debris. Damages reflected by Hazus® are inaccurate, as they only assume single story buildings (based on County data).
3. Private flood insurance policies for homes within Special Flood Hazard Areas are becoming increasingly difficult to attain within the County. The new FIRM includes 406 fewer buildings in the SFHA and V zones. A combination of these factors has resulted in 139 fewer buildings being insured in 2016 than in 2011. This creates a vulnerability in the County and lessens the ability to rebound following a flood event.
4. The 2015 FIRM shows a reduction in area within the SFHA and the V zone, which does not take into account erosion rates and relative sea level rise, and may instill a false sense of security in the County in regards to risk from flooding.
5. Hurricane Isabel in 2003 proved to be an extremely damaging event for Northampton County, despite being a Tropical Storm that did not make direct landfall within the County. The storm caused approximately \$10 million in damages and \$3 million to the County's agricultural and aquaculture industries, respectively; widespread damage to trees; extensive coastal flooding; and destroyed the Ocean Cove Seafood building in Magotha that had withstood the great hurricane of 1933. Storms of similar or greater magnitude are likely to occur in the future and Isabel should serve as a great lesson for the County.
6. The Chesapeake Bay Bridge Tunnel is a critical facility that affects the local economy, communications, and emergency response capabilities.
7. It is expected that a bayside-focused disaster would be worse than a similar seaside disaster considering current pattern of development in the County and the greater exposure to storm-related hazards on the bayside.
8. The County currently does not have a designated emergency shelter. The lack of an emergency shelter could put thousands of residents at risk if evacuations are ordered or homes become flooded or destroyed.