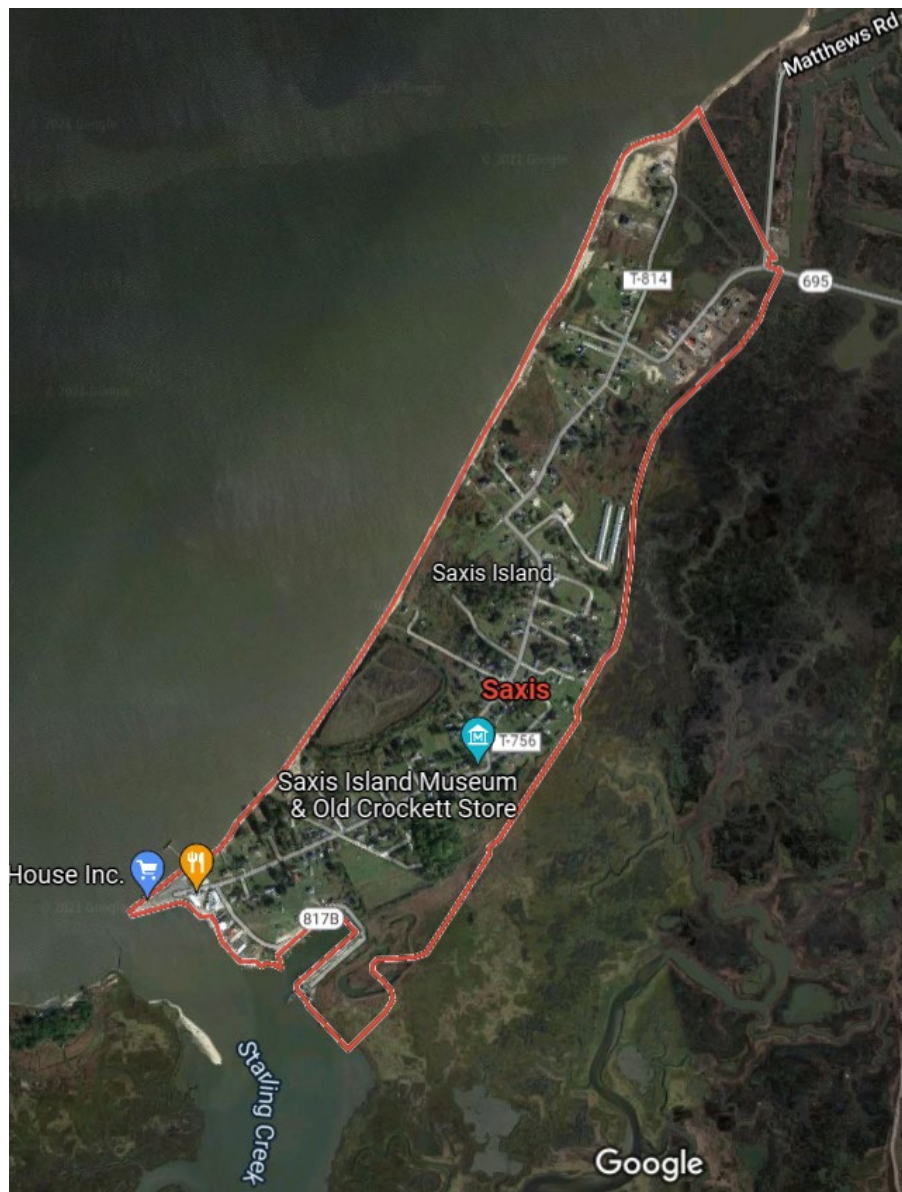


# CHAPTER 21: TOWN OF SAXIS

## TOWN PROFILE

Saxis Island juts into the Pocomoke Sound and is separated from the rest of Accomack County by Freeschool Marsh. The island was first patented in 1666 and a single community existed on the island as a single farmstead that primarily raised cattle until 1800 when four families inhabited the Island. The community grew in size throughout the 1800s and cattle farming declined due to lack of space on the island. It was during this period that seafood became the primary economy. In the 1920s, the causeway connecting the Island to the mainland was constructed and a channel was dredged to the harbor allowing for larger boats to access the Island. Seafood continues to be the main economy for the Town. Saxis was incorporated in 1959 (*Town of Saxis Comprehensive Plan, 1997*).



**Figure 1: Saxis 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 that relate 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. The following sections are intended to provide insight in the make-up and characteristics of the community and how it relates to hazard vulnerability.

### DEMOGRAPHICS

The 2019 American Community Survey five-year estimates indicate that the Town has a population of 238 and has been relatively stable since the 2010 Census. The Town has experienced a decline in population since 1960 when the population was 577 (*Town of Saxis Comprehensive Plan*, 1997). The percentage of individuals who speak a language other than English is likely too high (Personal communications, Donna Croushore, Town Council Member, April 7, 2021) and all residents in the Town are able to access information in a language they are able to understand. As shown in Table 1, the median age for residents in Saxis in 2019 was 56.0. This is a population approximately 18 years older than the national and state average, with 31.5% of the population over the age of 65 (ACS, 2014-2019); however, Town officials believe this number may be too high and stated there has been an influx of young families in the Town (Personal communications, Donna Croushore, Town Council, April 7, 2021). Populations with a high percentage of elderly residents may require additional assistance in the event of a hazard.

**Table 1: Saxis Demographic Information**

	2020	2014**	2013***	2010****	2000*****
<b>Population</b>	172	216	218	241	337
<b>Median Age</b>	56.0*	57.3	57.8	55.5	47.3
<b>Disability</b>	42*	13	20	NA	NA
<b>Income</b>					
Median Household Income	\$39,028*	\$30,500	\$30,500	\$29,545	\$18,125
Poverty Level	13.8%*	13.4%	18.3%	17.6%	NA
<b>Language</b>					
Only English	95.7%*	97.4%	100.0%	NA	99.4%
Other	4.3%*	2.6%	0.0%	NA	0.6%
Spanish	2.1%*	2.6%	0.0%	NA	0.6%
Ind-Euro	2.1%*	0.0%	0.0%	NA	0.0%
Asian	0.0%*	0.0%	0.0%	NA	0.0%
Other	0.0%*	0.0%	0.0%	NA	0.0%

Source: U.S. Census 2020, \*ACS, 2014-2019, \*\*Annual Estimates of the Residential Population, 2010-2014, \*\*\*ACS, 2009-2013, \*\*\*\*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. They can also identify where disruptions in employment and income might occur in the aftermath of a disaster.

Saxis is primarily a community of working watermen and the fisheries industry has provided the economic base for the community since the 19<sup>th</sup> Century. The fisheries industry is based on soft shell crabs and hard crabs resulting from the soft-shell catch. Some clamming and fin fishing also occur. From April to November, peeler crabs are caught in traps, scrapes, pots, and dip nets, held in floats until they shed, and sold as soft crabs (*Town of Saxis*

*Comprehensive Plan*, 1997). Although Table 2 initially indicated a steep 55% decrease in the fisherman workforce from 2010 to 2014, 2014 was actually the fourth season of improved oyster harvest; therefore, the numbers should have increased. Data from the 2019 ACS depicts the Saxis work force much more accurately, with the agriculture, forestry, and fishing industry accounting for nearly 35% of the workforce. Other dominating industries include educational, health care, and social services and retail.

**Table 2: Saxis Local Workforce Industry**

Civilian Employed Population										
Industry	2019*		2014**		2012**		2010**		2000***	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Agriculture, forestry, fishing/hunting, or mining	40	34.8%	10	12.3%	15	14.9%	22	20.8%	21	16.2%
Construction	2	1.7%	8	9.9%	8	7.9%	5	4.7%	8	6.2%
Manufacturing	7	6.1%	8	9.9%	15	14.9%	13	12.3%	5	3.8%
Wholesale trade	3	2.6%	8	9.9%	9	8.9%	21	19.8%	9	6.9%
Retail trade	18	15.7%	4	4.9%	6	5.9%	2	1.9%	6	4.6%
Transportation and warehousing, and utilities	2	1.7%	3	3.7%	3	3.0%	3	2.8%	0	-
Information	0	0.0%	0	-	0	-	0	-	2	1.5%
Finance, insurance, real estate, and rentals	3	2.6%	4	4.9%	6	5.9%	3	2.8%	3	2.3%
Professional, scientific, waste management	7	6.1%	5	6.2%	10	9.9%	9	8.5%	3	2.3%
Educational, health care, social services	21	18.3%	13	16.0%	10	9.9%	13	12.3%	0	0.0%
Arts, entertainment, recreation, food	3	2.6%	7	8.6%	12	11.9%	8	7.5%	0	0.0%
Public Administration	4	3.5%	8	9.9%	4	4.0%	4	3.8%	2	1.5%
Other	5	4.3%	3	3.7%	3	3.0%	3	2.8%	4	3.1%
TOTAL CIVILIAN EMPLOYED POPULATION	115	-	81	-	101	-	106	-	130	-

Source: \*ACS, 2014-2019, \*\*ACS, 2010-2014, \*\*\*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.

Fisheries have long provided the economic base for Saxis. There are seafood companies in Saxis that are concentrated around the harbor, which pack and package crabs and other seafood (*Town of Saxis Comprehensive Plan*, 1997). Due to the Town's dependence on seafood, the water quality within Chesapeake Bay is an important factor in the Town's economic sustainability. In the harbor, approximately 70% of the 75 slips are used by commercial fisherman and sublet to oystermen (Personal communications, Donna Croushore, Town Council, April 7, 2021). Many people in the Town are hoping that improvements to the public boat ramp, new restaurant options, the Saxis Island Museum, and potential improved public beach access facilities will open the Town to additional visitors and tourism-based businesses. The Town is looking into funding for a public access facility and a recreational area with a pavilion,

picnic area, and grills in hopes to draw additional visitors (Personal communications, Donna Croushore, Town Council, April 7, 2021).

**Table 3: Saxis Business Establishment Types**

Industry Code Description	Total Establishments			
	2021	2013*	2011*	2009*
Agriculture, Forestry, Fishing, and Hunting	2	-	-	-
Utilities	-	-	-	-
Construction	-	-	-	-
Manufacturing	1	1	1	1
Wholesale Trade	1	1	1	1
Retail Trade	1	-	-	-
Transportation and Warehousing	-	-	-	-
Finance and Insurance	-	-	-	-
Information	-	-	-	-
Real Estate and Rental and Leasing	-	-	-	-
Professional, Scientific, and Technical Services	-	-	-	-
Administrative, Support, and Waste Management	-	-	-	-
Education Services	-	-	-	-
Health Care and Social Assistance	-	-	-	-
Arts, Entertainment, and Recreation	1	-	-	-
Accommodation and Food Services	3	-	-	-
Other Services (Except Public Administration)	-	-	-	-
Industries not Classified	-	-	-	-
<b>Total, All Establishments</b>	~9	2	2	2
<b>Total Employees</b>	-	-	-	-

Source: Personal Communications, Donna Croushore, Town Council Member, April 7, 2021, Census Zip Code Business Patterns, 2009, 2011, 2013

Business presence in Saxis is limited other than the fishing industry. A “snack shack”, seafood market, and two restaurants, Martha’s Kitchen and Captain E’s Hurricane Grill and Bar, are located within the Town. Captain E’s also has a food truck that offers catering and frequently visits Tall Pines Campground, a popular camping destination located in the neighboring Town of Sanford, as well as other areas on the Shore. Campers frequently visit Saxis to explore the cultural history, utilize beaches and waterfront areas, eat breakfast at Martha’s Kitchen, and relax with live music by the water at Captain E’s. The loss of crab houses in the Town has resulted in the increase of the individual selling of crabs; however, there is still one crab house in operation. The Town also contains several rental properties, an oyster shucking operation, and kayak rentals at Captain E’s Hurricane Grill and Bar (Personal communications, Donna Croushore, Town Council, April 7, 2021).

**Figure 2: The Saxis Harbor. Photo by Shannon Alexander**



## 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.

### HOUSING UNITS

The majority of homes in Town have previously remained occupied; however, the Town has experienced an increase in the number of vacation homes that remain vacant through the majority of the winter months. The influx of second homes in the Town is represented in Table 4, as estimates show the number of vacant properties has doubled since 2014. Although the number of vacant properties has certainly increased, the number displayed in Table 4 may still be too high, as well as the total housing units (Personal communications, Donna Croushore, Town Council, April 7, 2021). These properties are at greater risk to damage during the times they are vacant. The majority of housing stock in Saxis is in standard condition, although several houses are not maintained properly and could pose a threat to public health and safety. The Town has their own ordinance and the authority to enforce repairs or clearance of dilapidated buildings and has been systematically addressing this issue since the mid-1990s. There are currently two homes scheduled to be demolished and there has been an influx of retirees buying and rebuilding homes in need of repair (Personal communications, Donna Croushore, Town Council, April 7, 2021). These homes are expected to become primary residences.

Within the Town, a special use permit is required for mobile homes, and home age, electric condition, block foundation, etc. are strictly reviewed. There have been no new mobile homes since May of 2008. Because mobile homes are typically more susceptible to damages from winds and flooding, this process of review and permit reduces risks associated with hazards.

**Table 4: Saxis Housing**

	2019*	2014**	2010***	2000****
<b>Total Housing Units</b>	211	168	179	193
Occupied	111	118	117	148
Vacant	100	50	62	45
<b>Owner-Occupied</b>	91	98	93	127
<b>Renter-Occupied</b>	20	20	24	21
<b>Median Housing Value</b>	\$112,500	\$103,000	NA	NA

Source: \*ACS, 2014-2019, \*\*ACS, 2009-2013, \*\*\*U.S. Census 2010, \*\*\*\*U.S. Census 2000

### TRANSPORTATION

Saxis is connected to U.S. Route 13 by State Route 695, a rural road approximately 11 miles long. Most of the Town's streets are maintained by the Virginia Department of Transportation; however, there are several unpaved private lanes that are not in adequate condition due to pot holes and regular flooding (*Town of Saxis Comprehensive Plan*, 1997). Frequent flooding near the Harbor has also resulted in several pot holes (Personal communications, Donna Croushore, Town Council, April 7, 2021).

Table 5 reveals that there are fewer households without a vehicle available than there were in 2000; however, ACS estimates show that there are still 13 residences without a vehicle in 2019. This is thought to be an overestimate

and the number of households without a vehicle is likely under 5; however, these households have family and friends that would be able to assist in the event of a necessary evacuation (Personal communications, Donna Croushore, Town Council, April 7, 2021). There is no public transportation that serves the Town, but the company Shore Ride provides transportation services up and down the Eastern Shore of Virginia and Maryland. State Route 695 provides the only road access to the Town and portions of the route are often inundated during storm events and astronomically or wind-driven tides. There are approximately 20 golf carts in Saxis, which are permitted on roads in Town. Although there is not ferry service to or from Saxis, transportation by water is often utilized.

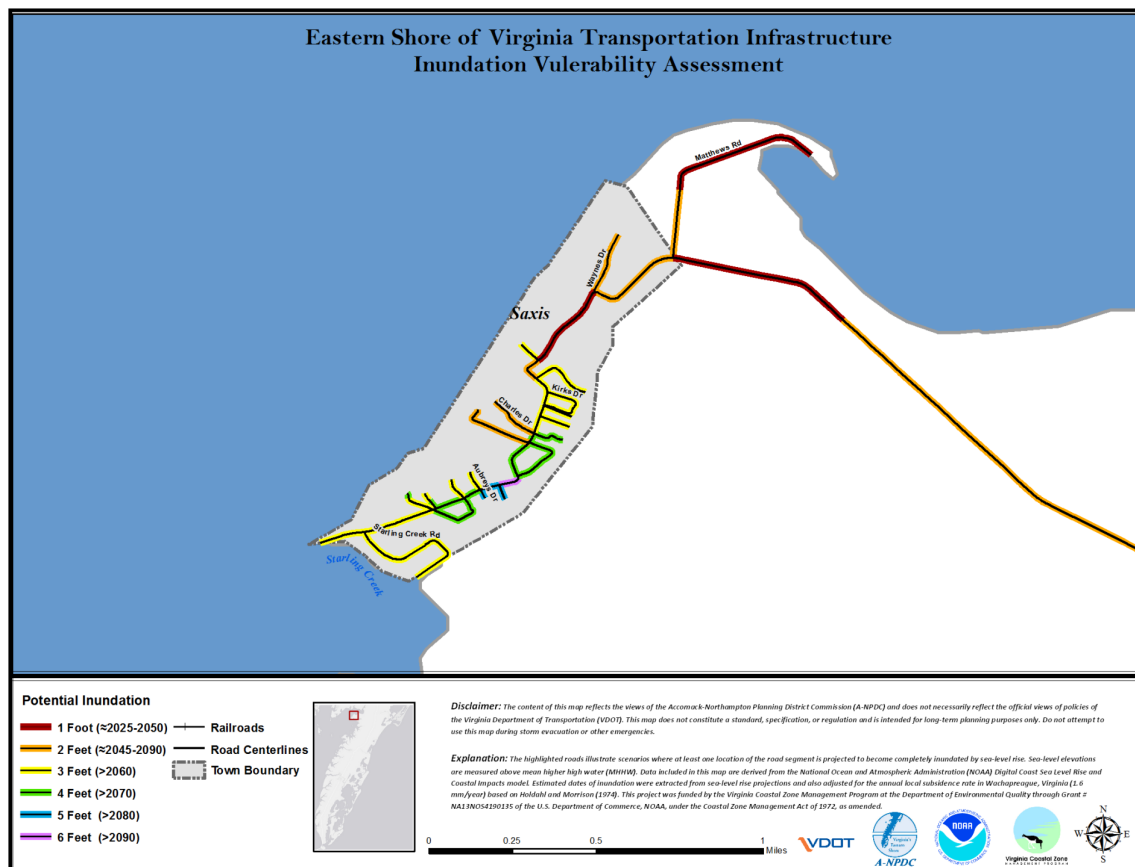
**Table 5 : Saxis Vehicles Available per Household**

Vehicles Available	2019*	2014**	2010**	2000***
None	13	16	13	23
One	49	51	77	55
Two	29	33	52	53
Three or more	20	18	19	17

Source: \*ACS, 2014-2019, \*\*ACS, 2009-2014, \*\*\*U.S. Census 2000

With only one foot of sea level rise (SLR), it is estimated that the part of State Route 695 will be submerged with one foot of water. This is important to note, as it also reflects that with one foot of flooding about mean high tide, this section of the road would also be inundated, and the remainder of Route 695 leading towards Sanford vulnerable to two feet of SLR or flooding above mean high tide.

**Figure 3: Town of Saxis Transportation Infrastructure Inundation Vulnerability**





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## COMMUNITY SERVICES AND FACILITIES

Community facilities are facilities required to support the services and functions provided by the Town government or in coordination with other public and private entities. These facilities enhance the overall quality of life for the Town 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 impacted by a hazard.

Most of the community facilities within the Town of Saxis focus upon the harbor and seafood industry. The Town has been looking for opportunities to increase tourism on the island and improve the lifestyle of residents with a library, cultural center, and a pavilion.

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### PUBLIC SAFETY

Fire protection for the Town is provided by the Saxis Volunteer Fire & Rescue Company, Inc. The fire company also provides ambulance service and includes one ALS ambulance, two engines, one tanker, and one brush unit. The brick building itself, a renovated schoolhouse, has five bays, one facing in the other direction in order to increase EMS response time, and the building contains the Town office. Police protection is provided by Accomack County Sheriff's Office and the intention is to utilize the patrol units as needed. The Town has initialized an emergency response communication effort to ensure the safety of residents and seasonal visitors in the wake of an impending hazard (Personal communications, Donna Croushore, Town Council, April 7, 2021).

***Figure 4: Saxis Firehouse and Town Office – Located in Flood Zones.  
Photo by Elaine Meil***



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### PARKS AND RECREATION

A public harbor and boat launch with public restrooms are located in Town as well as a public pier. There are two other boat launch facilities nearby, just outside of Town limits. The Saxis Wildlife Management Area, which borders the eastern half of the Town, offers opportunities for hunting, fishing, and bird watching. As part of a coastal resilience project, the Town is working towards constructing a public recreational area adjacent to the U.S. Army Corps of Engineers (USACE) leased dredge spoil site that will include a designated parking lot, restrooms, a native garden, covered picnic facilities, beach access, a boat ramp, a pier, and a playground (Personal communications, Donna Croushore, Town Council, April 7, 2021). A pavilion located at the Harbor was completed in 2016 and is accompanied by a restroom facility. These improvements to the Town will accommodate special Town events, such as popular oyster roasts, as well as personal events, such as weddings and picnics.

**Figure 5: The Saxis Town Pier is located on the western shore of the island.**  
**Photo by Curt Smith**



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### HARBOR

A public harbor was built in 1962 at the south end of Town adjacent to Starling Creek and funds were reinvested in 2005 to upgrade and maintain the facility. The harbor contains 75 boat slips rented out on a yearly basis for a fee. The harbor is equipped with electricity, lights, restrooms, a concrete boat ramp, and a working stall with a hoist. Approximately 70% of the boat slips are used by commercial boats (Personal communications, Donna Croushore, Town Council, April 7, 2021). While water depths within the Harbor appear to be adequate, maintaining the channel navigability is extremely important.

The entrance channel and turning basin were authorized by the River and Harbor Act of 1935. The Harbor was designated as a federal Harbor of Refuge by the USACE in July 1960. A jetty has been installed to protect the Island from erosion by trapping moving sand with the expectations that a beach will develop on the Island. The last time that Starlings Creek and the harbor were dredged was in 2015 utilizing Hurricane Sandy funds at a cost of almost \$700,000 which removed 82,500 cubic yards of sediment (*Starlings Creek Dredging*, 2015). Dredge spoils were used for beach nourishment and the finer sediments were pumped into the dredge spoil site on the property that the USACE leases from the Town.

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### CULTURAL RESOURCES

Saxis Island Museum was created in 2014 in the larger portion of the same building that hosts the Post Office. Saxis just received state and federal historical designation, leading to additional funding for mitigation and resilience projects. A federal grant allowed the Crockett Store to be fully renovated and house the museum's new location where they sell t-shirts, hats, koozies, and other items (Personal communications, Donna Croushore, Town Council, April 7, 2021). Outdoor public Wi-Fi is also available at the museum. The Town kept a small portion of the Post Office building to utilize as a "Life Museum" with a decorated window to peer into. The small room acts as a living museum, showing the Saxis way of life.

In Town and along the shoreline, arrowheads are frequently found, particularly following storms with high winds and associated erosion. To date, there have been no surveys to document these findings; however, this is a desired project, as it would create additional knowledge about Native American history in the area.

The cemeteries are a cultural resource in the Town. During Hurricane Floyd in 1999, and again during an extremely high-tide occurrence in July of 2020, several graves floated up on the north area of Town (Personal communications, Donna Croushore, Town Council, April 7, 2021). Cemeteries will be at increased risk as sea level continues to rise, increasing frequency and duration of inundation and erosion rates.



## Town of Saxis

There are two curbside “little libraries” in the Town, as the nearest public library is approximately 25 miles away (Personal communications, Donna Croushore, Town Council, April 7, 2021). They are located one half of a mile from each other and are maintained on a weekly basis. The libraries are available for anyone to give and take any type of media including books, cd’s, DVD’s, VHS tapes, etc. and are often utilized by beach goers. The libraries have been knocked down during high-wind events and the Town is looking into cementing the poles into the ground (Personal communications, Donna Croushore, Town Council, April 7, 2021).

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### WATER SUPPLY AND WASTEWATER

Town residents obtain their water from private wells and dispose of wastewater with private septic systems. Due to Saxis’ location near the coast, there is an increased chance of saltwater intrusion into the York-Eastover Aquifer, from which private wells source the residents’ water, although no impacts have been measured to date. The majority of the developed portions of the Town are on Bojac sandy loam and Munden sandy loam soils, which are considered to be most and fairly suitable, respectively, for development on the Eastern Shore as they drain well, particularly the Bojac.

Public health risks may be encountered during and following coastal flooding events as septic system drainfields are inundated with flood waters. The Town’s emergency response is working towards the ability to distribute potable water using pre-purchased sanitary containers from the water supply at the Saxis Fire House in the event of power loss, salt water intrusion, or contamination (Personal communications, Donna Croushore, Town Council, April 7, 2021).

The Town has applied for a USDA grant to obtain their own back hoe for maintenance and will be looking into additional grants for a building to house the back hoe and the mosquito truck that they own already; however, these projects have been delayed due to COVID-19 (Personal communications, Donna Croushore, Town Council, April 7, 2021).

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### SOLID WASTE

The Town now contracts out Davis Disposal to provide weekly trash pick-up for Saxis residents (Personal communications, Donna Croushore, Town Council, April 7, 2021). The nearest convenience center is located off Saxis Road in Temperanceville.

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### POWER AND COMMUNICATIONS INFRASTRUCTURE

Mobile service in Town can be inconsistent, depending on the service provider. There have not been issues with long-time power outages; however, the power lines are suspended along the Saxis Road (Rt. 695), the only road accessing the Town, which is prone to flooding, saturated marsh soils, and the risk of downed power line poles that accompanies these conditions. Eastern Shore of Virginia Broadband Authority is available in every incorporated Town in both Accomack and Northampton Counties, including the Town of Saxis.

The Saxis fire house is the designated staging area following an emergency and has a raised generator.

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### SCHOOLS

There are no schools in the Town of Saxis. There are some school-aged children home schooling; however, the majority primarily attend Kegotank Elementary and Arcadia Middle and High Schools (Personal communications, Donna Croushore, Town Council, April 7, 2021).

## NATURAL ENVIRONMENT

Saxis is situated on a ridge of sand-rich soils on the western perimeter of Freeschool Marsh. It has a 9,000-foot-long shoreline, including a narrow beach along the Pocomoke Sound. The Town is adjacent to the Saxis Wildlife Management Area to the east and is bound by Starling Creek to the south. The entire Town lies within the Chesapeake Bay Watershed.

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### LAND USE LAND COVER

The Town of Saxis encompasses approximately 210 acres. Excluding the dredge spoil site, the highest elevation is five feet above mean low water (*Town of Saxis, VIMS*). The predominant land use is residential, while commercial land uses are mainly concentrated around the harbor and revolve primarily around the seafood industry (*Town of Saxis Comprehensive Plan, 1997*). Public and semi-public land uses are the recreational areas and churches, as well as a parcel of land leased to USACE for the placement of dredge material from Starling Creek. Vacant parcels in the Town are likely restricted from development due to physical constraints such as hydric soils and wetlands. Tidal wetlands are located along the northern half of the shoreline at the northern edge of Town. Soil types on the island are a major limiting factor in regards to development as most soils in Saxis are not suitable for septic tank use (*Town of Saxis Comprehensive Plan, 1997*). New above-ground septic tanks or the potential to connect to the Hampton Roads Sanitation District (HRSD) sewer line may allow for future development. HRSD will be running sewer from the Town of Nassawadox in Northampton County to the Wastewater Treatment Plant (WWTP) in the Town of Onancock, connecting towns in between. Future phases of the project also include towns located in northern Accomack County, although specifics have not yet been determined and these phases would not occur for several years.

## HAZARD PREPAREDNESS & COMMUNITY CAPABILITIES

### PREVIOUS HAZARD MITIGATION PLANS

§201.6(b)(3) §201.6(c)(3), §201.6(d)(3) Saxis has participated in the hazard mitigation planning process since 2006. The Town's primary risk is associated with coastal erosion and flooding.

**Table 6 : Town of Saxis Hazard Mitigation Resources**

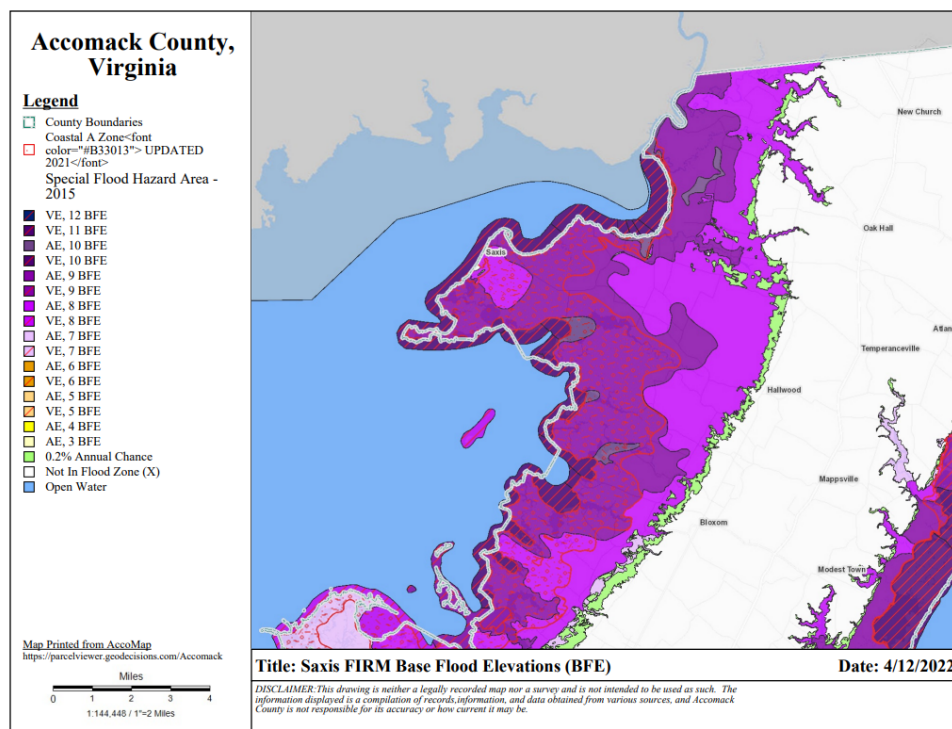
Authority	Ordinances, Plans, & Publications														Resources, Committees
	Building Code	Chesapeake Bay Act	SWMP	Hazard Mitigation Plan	Comprehensive Plan	Zoning &/or Subdivision Ordinance	Storm Water Regulations	Transportation Infrastructure Inundation Vulnerability Report	All Hazards Preparedness Brochure	Emergency Operations Plans	Mutual Aid Agreements/Documents	Neighborhood Emergency Help Plan	Virginia Hurricane Evacuation Guide	Oil & HazMat Response Plan; HazMat Commodity Flow	
Local	*				*	*						*			
County			*												
Regional				*				*	*	*	*			*	
State		*					*						*		
Federal		*													

## NATIONAL FLOOD INSURANCE PROGRAM & HAZARD MITIGATION GRANT PROGRAM

### NFIP

§201.6(c)(2)(ii), §201.6(c)(3)(ii), §201.6(d)(3) The Town joined the NFIP on November 17, 1982. Saxis has had 37 flood insurance claims since 1982 (FEMA NFIP Data Report, 2022). There was only one claim in the Town from 2003 to 2011, with the average claim settled being \$6,314 (FEMA NFIP Flood Insurance Report, May 2011), while there were 12 claims totaling approximately \$210,000 between 2011-2016. All of these claims were likely from damage incurred during Hurricane Sandy (Personal communications, Denise Drewer, Town Mayor, June 9, 2016). 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.

**Figure 6: Town of Saxis FIRM Base Flood Elevation (BFE)**



With the 2015 FIRM, the majority of the Town is still designated to lie within the A-zone of the Special Flood Hazard Area (SFHA), meaning that they will be inundated by the 1-percent-annual-chance flood (or 100-year storm) event. The base flood elevation (BFE) has increased throughout the Town to a current designation of eight-foot BFE, with the very southern and northern parts of Town designated at nine feet. The northern part of Town, although not yet built upon, is already subdivided with over 50 parcels, all of which fall within the 9-foot BFE, some of which have the shoreward portions of the lot in the velocity zones with a ten-foot BFE. This is a significant change from the previous FIRM, which indicated only the northern part of Saxis with a nine-foot BFE and the developed portion of Town as about evenly proportioned with seven- and eight-foot BFE's. Therefore, homes that were raised to the previous BFE are often either one or two feet below the new 2015 FIRM BFE. Although their policy premium should not increase due to these changes, if a storm event occurs which damages their home and/or contents, their policy cost will increase the following year. The Town zoning requires homes to be built at two feet above the FEMA BFE.

## HMGP

The Town elevated 16 houses following Hurricane Isabel in 2003 using HMGP funds. Currently, there are three additional homes on the list to be elevated as well (Personal communications, Donna Croushore, Town Council, April 7, 2021).

## HAZARD PROFILE

§201.6(c)(2)(i), §201.6(c)(2)(ii), §201.6(d)(3) Coastal erosion, coastal flooding, and high winds are the biggest threat to the Town. Storm water flooding is primarily tidally dependent and thus considered more of a coastal flooding issue.

## PANDEMIC RESPONSE AND READINESS

The Town of Saxis responded to the COVID-19 Pandemic in several ways. Cleaning and sanitizing materials were provided to every resident and the Town followed mask mandates and social distancing guidelines set forth by the State of Virginia. The Town Office remained closed and communications with residents occurred via postage letters, social media, emails, and fliers posted around Town (Personal communications, Donna Croushore, Town Council, April 7, 2021). CARES Act funds were issued to qualifying businesses and watermen in the Town and almost every waterman qualified. Funds were also used for the purchase of sanitizers and additional PPE.

Economic effects were seen primarily in the restaurant industry, specifically, Captain E's Hurricane Grill and Bar (Personal communications, Donna Croushore, Town Council, April 7, 2021). Restaurants in Virginia were closed for indoor seating until restrictions were lifted allowing limited occupancy. Although take-out and delivery were still options for restaurants, the majority of patrons that would normally visit Captain E's likely do not live in Town and would have to travel approximately 20+ minutes for pick-up. Restaurants all over the Region have struggled to keep their doors open throughout the Pandemic. As limited occupancy restrictions began to ease, restaurants in Saxis and other coastal towns with economies focused on tourism began to struggle with worker shortages due to the fact that many businesses in the Region previously hired employees on Temporary Work Visas.

## HIGH WIND

The entire Town is located in the wind-borne debris hazard area. This area extends one mile inland. In 2006, the Eastern Shore of Virginia Wind Vulnerability Assessment estimated approximately \$838,000 in wind damages.

Hazus® estimates are calculated as a single Census tract with a geographical size of the 49.69 square miles and a total population of 2,335 people (2010 Census). The Town of Saxis is part of this tract. Hazus® estimates a total of \$2,850,000 in damages could occur within this Census Tract from a 1% probabilistic wind storm event.

The model estimates that a total of 25,587 tons of debris will be generated within the defined Census Tract. If the building debris tonnage is converted to an estimated number of truckloads, it will require 6 truckloads at 25 tons per truck to remove the building debris generated by the wind event. The number of Eligible Tree Debris truckloads will depend on how the 1,621 tons of Eligible Tree Debris is collected and processes. The volume of tree debris generally ranges from approximately 4 cubic yards per ton for chipped or compacted tree debris to approximately 10 cubic yards per ton for bulkier, uncompacted debris.

In addition to wind threats from hurricanes, there is also the potential for nor'easters, tornados, water spouts, and straight-line winds. The public pier has been destroyed and rebuilt two separate times due to damages caused by

high-wind events (Personal communications, Donna Croushore, Town Council, April 7, 2021). The Town Zoning does require 120-mph-gust zoning standards for renovations and new construction.

### COASTAL EROSION

The Town recognizes that it has a serious erosion problem and has been working to resolve the issue since 1972. The average long term erosion rate for Saxis' 9,000-foot-long shoreline is 4.9 feet per year (*Town of Saxis*, VIMS); however, the Town believes it is possible the erosion rate has increased. The Town is only 1,590 feet-wide at the widest point. With every bit of erosion, the Town's flood hazard also increases. There are approximately 9 structures in Saxis that are located close to the Bay facing shoreline with little buffer if erosion were to occur in the immediate vicinity of these structures.

The US Army Corps of Engineers (USACE) in Norfolk proposed building a series of seawalls along the western shoreline of the Island to restore protective wetlands and, in turn, control erosion. The proposal indicated that the Town must match 35% of construction costs, which was \$2.3 million. The Town has unsuccessfully explored multiple funding options and does not expect to be able to secure the needed funds to protect their Island. In 2015, the USACE did place sand derived from the dredging of Starling Creek along the shoreline adjacent to the dredge spoil basin within Town to mitigate erosion occurring along that portion of the Town.

### COASTAL FLOODING

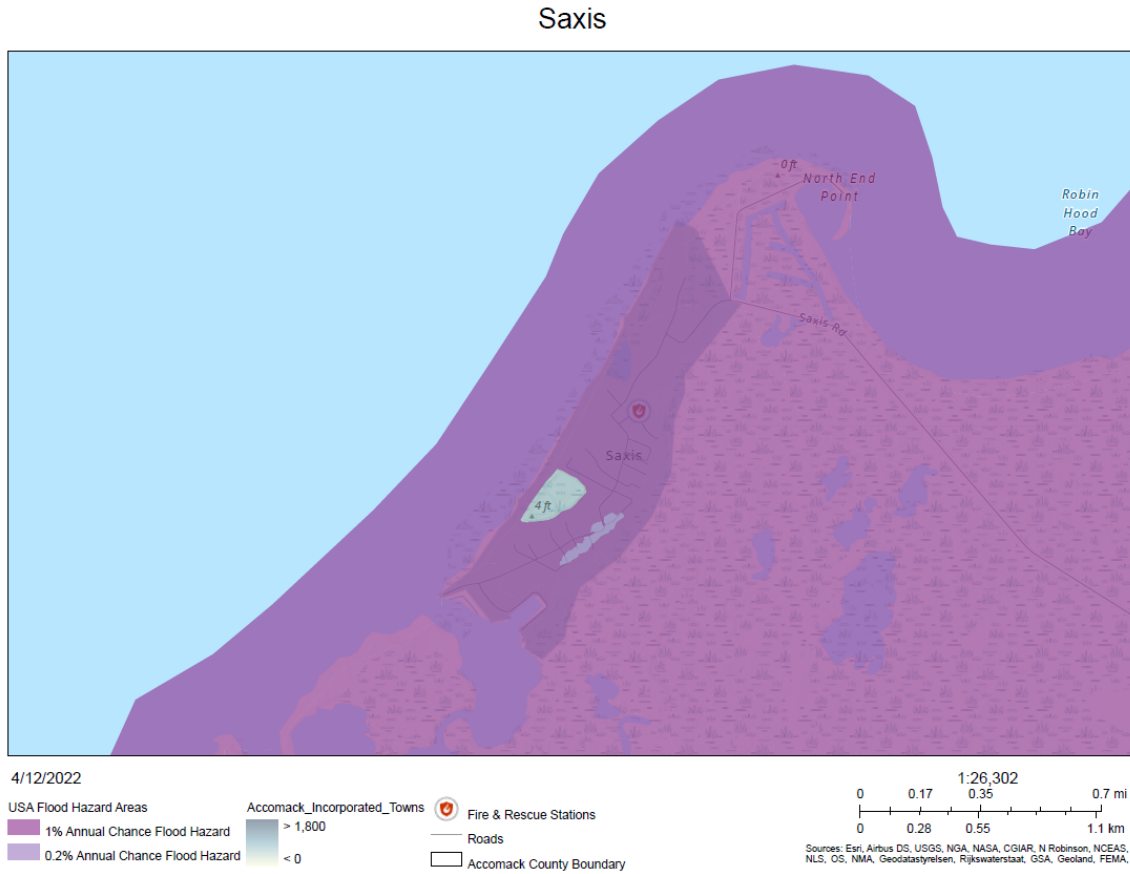
The Flood Insurance Study (FIS) for Saxis identifies that the greatest threat of flood inundation comes from hurricanes. The August 1933 hurricane, September 1936 hurricane, Hurricane Hazel in 1954, and Hurricane Donna in 1960 all caused flooding in the Town (Saxis FIS, 1982). Since this study, the Town has also experienced flooding during Hurricane Floyd in 1999, Hurricane Isabel in 2003, Nor-Ida in 2009, Hurricane Irene in 2011, and Hurricane Sandy in 2012.

In 2013, the Town was able to secure funding from the Virginia Port Authority for a 322-foot jetty to protect the Town, namely the harbor, from wave and storm action. During Hurricane Sandy, a year earlier, the Town pier was devastated, as were several crab shanties that are vital for many residents' livelihoods. Involvement by the Governor allowed for the reconstruction of some of the shanties. Up to 3 ½ feet of water flooded residents' garages and Saxis Road, the only road to and from the Island, was impassable for 24 hours due to vegetation covering the road as a result of salt water flooding (Personal communications, Donna Croushore, Town Council, April 7, 2021). A National Guard Truck was needed in order to provide assistance during the storm. In addition, about 60 mature trees were downed during the rain and winds. Town officials believe that if the jetty had been installed prior to the storm, there probably would have been much less damage (Personal communications, Mayor Denise Drewer, June 6, 2016). There has also been a USGS tide gauge installed at the public boat ramp, so more consistent and accurate data will be available.

According to the 2015 FEMA Flood Insurance Rate Map (FIRM), almost the entire Town lies within a Special Flood Hazard Area (SFHA), except for a small ridge and the dredge spoil deposit location on the west side of Town that are both in the 500-year flood or 0.2%-annual-chance zone, as revealed by Figure 6. Most of the structures lie within an A Zone, with Base Flood Elevations ranging from 8 to 9 feet. The Flood Insurance Study for the Town notes that the development within the floodplain is extensive and includes numerous family dwellings, small businesses, and seafood related industries.



**Figure 7: Town of Saxis Flood Hazards to Infrastructure**



The causeway, Route 695, provides the only vehicular access to Saxis from the mainland. This road regularly experiences coastal flooding during storm events, putting residents at great risk. In addition, storm water commonly floods the road in low lying areas near Sanford and Messongo to the east of Town. Saxis is the highest point of land for approximately 4.4 miles inland. Both the villages of Sanford and Messongo located inland are lower in elevation than Saxis. Sanford is 2.6 miles from Saxis and Messongo is 4 miles from Saxis. The Town serves these areas with its fire station, but would be unable to do so during a flood event.

**Figure 8: Westward View of Saxis Causeway. Photo by Curt Smith**



The harbor at Saxis is a local hub of economic activity. A disastrous flood would adversely affect the Town and surrounding area. Worker productivity would be cut drastically since many persons live and work within the 100-year floodplain. Many employment activities also occur through small businesses and/or self-employment. FEMA notes that small businesses are particularly vulnerable after a disaster with some 30% not surviving (*Planning for Post Disaster Recovery and Reconstruction*, 1998).

The fisheries industry is based around the southern end of Saxis near the harbor. This area is classified as an Intensely Developed Area (IDA) according to the requirements of the Chesapeake Bay Preservation Act. It is also zoned commercial-waterfront (C-W). This area is intended to provide space for activities and services relating to the seafood industry (*Saxis Zoning Ordinance*, 1993). This area lies in a regulated flood zone.



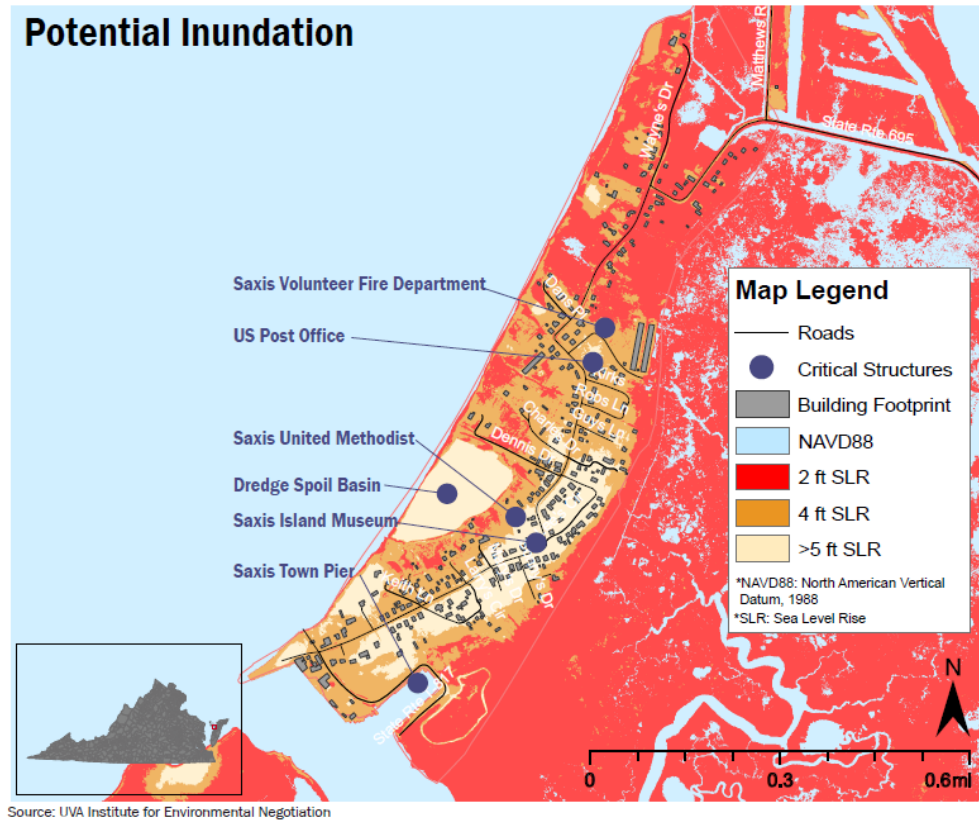
**Figure 9: Captain E's Hurricane Grill and many fisheries businesses are located in the Intensely Developed Area (IDA) in Saxis. Photo by Shannon Alexander**

A small commercial area is located in the center of the Town on Saxis Road. This area previously was classified as Zones A, B, and C; however, with the 2015 FIRM, this area is now primarily A Zone, with a small amount of area in the 0.2%-annual-chance flood. In the event of a 100-year or 1%-annual-chance flood, Hazus® predicts that Saxis would suffer a total of about \$7.55 million dollars in building loss and business interruption. Twenty three percent of the loss is related to the impact of business interruption.

The Town participated in the 2018 Resilience Adaptation Feasibility Tool (RAFT) workshop where several priority projects for the Town were identified. The RAFT map displayed in Figure 10 below shows the potential inundation of roads and other critical infrastructure in Saxis. The repair of the causeway and erosion mitigation, as well as the 14 culverts under the causeway that are crushing and filling and not allowing water to go back and forth, are high priority projects that were identified for the Town (Personal communications, Donna Croushore, Town Council, April 7, 2021). An additional RAFT project includes reforestation in order to help mitigate flooding. The Department of Forestry donated over 100 trees, assessed properties, and selected the best trees for salt marsh areas to help mitigate tidal flooding. Trees were given to every resident that signed up and agreed to care for the trees. In February of 2020, the Department of Forestry came back to help the Town plan additional mitigation efforts regarding reforestation and coastal resilience gardening and will again return to assist the Town. The RAFT Committee also instituted the Emergency Response Program in order to ensure the safety of residents and visitors in preparation for hazards. This allows the Town to know who is at risk, who is on the island, whether residents and visitors are able to evacuate if necessary, and who needs to be contacted regarding impending hazards.

**Figure 10: RAFT 2018 Potential Inundation Map - Saxis, VA**

## Saxis | 2018 RAFT Workshop



## STORM WATER FLOODING

Storm water flooding also occurs in the Town. During heavy rains, the Town's roads are frequently flooded (*Town of Saxis Comprehensive Plan*, 1997). The Town's drainage ditches empty directly onto the western shore and often become clogged with sand from tides. Ditches in the Town are also commonly filled with debris and invasive plant species, such as phragmites. Phragmites, or common reed, can completely overtake a ditch preventing proper drainage and is almost impossible to eradicate. The Town also contends with tidal influence on the drainage system. When tides are high, the storm water remains in the ditches until the tide goes out. The County Department of Public Works recently cleaned out one of the main ditches, and VDOT cleaned out several additional ditches in early 2016. The drainage is actually efficient so long as trash and yard debris are disposed of properly in order to avoid the clogging of ditches. Storm water flooding in the Town is tidally dependent. The Town has previously expressed interest in the ability to maintain their own ditches; however, it is currently still the responsibility of VDOT (Personal communications, Donna Croushore, Town Council, April 7, 2021).

## HAZARDS OF LOCAL SIGNIFICANCE

### WATER QUALITY

Since many people rely on the fisheries industry, fish kills and the declining health of the Chesapeake Bay greatly impact the Town. In July 1999, fish kills near Saxis caused 500,000 young-of-the-year menhaden to be affected. The cause of this fish kill was low dissolved oxygen in the water linked to the prolonged drought Virginia was experiencing at the time. Town Officials also indicated that residents have been historically impacted by concentrations of the pathogenic bacteria, *Listeria monocytogenes*, which originated in the Pocomoke River upstream of the island. These water quality hazards represent a threat to the livelihood of residents in Saxis and northern Accomack County.

### MOSQUITOS

The Town also has a significant mosquito problem and residents could potentially be at risk to mosquito-borne illnesses such as West Nile and Zika virus. In 2012, the Town purchased a mosquito control truck and has implemented a mosquito control abatement program. Weather depending, the truck generally sprays at least once weekly (Personal communications, Donna Croushore, Town Council, April 7, 2021).

### SNOW AND ICE STORMS

Winter weather has historically had adverse impacts on the Town's seafood industry. The Town's harbor has frozen during extreme cold snaps, bringing the seafood-based local economy to a halt. Ice also poses a threat to the causeway and access to the Island.

### WATERSPOUTS/TORNADOES

The Town of Saxis is also susceptible to waterspouts and tornadoes. In 2012, there were reports of several waterspouts, tornadoes, and funnel clouds forming up and down Accomack County. Multiple watermen reported to local news stations that they were working on the water near Saxis when the first waterspout touched down (*Va. Watermen Get Eyeful of Waterspouts*, 2012). More than one waterspout formed in the Saxis area as well as in the Chincoteague and Chesapeake Bays as a result of two slow-moving storm systems (*Waterspouts Spotted Over Accomack County*, 2012). The National Weather Service issued two tornado warnings on August 1, 2012 after Doppler Radar indicated a waterspout came onshore and a local law enforcement officer reported a tornado southeast of Onley. Although there were no damages or injuries were reported, it is extremely important to be prepared and ready for these types of hazards.

## CRITICAL FACILITIES

Town officials evaluated the hazards that have or could affect critical facilities in Saxis. The Town's office and fire station are located in the 100-year floodplain. When floodwaters come up, the Town's equipment is moved to the Methodist Church located on the highest point of land in the Town.

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

**Table 7 : Town of Saxis Critical Facilities**

Facility	HMP 2006	HMP 2011	HMP 2016	HMP 2021	Hazards	No of People Affected	Loss potential	Relocation Potential	Retrofit Potential
<b>Town-Owned Facilities</b>									
Town Office	-	-	X	X	Flooding, Wind, Fire	238+	Minor Disruption	Yes	Yes
Saxis Harbor	-	X	X	X	Flooding, Wind, Erosion, Ice	10,000+	Devastating	No	Yes
Saxis Town Pier	-	X	X	X	Flooding, Wind, Erosion, Ice, Collision	400+	Minor Disruption	No	Yes
Pavilion	-	-	X	X	Flooding, Wind	400+	Inconvenience	No	Yes
Dredge Spoil Basin	-	-	X	X	Flooding, Erosion	10,000+	Devastating	Yes	Yes
Saxis Town Park/Beach	-	-	X	X	Flooding, Wind, Erosion	400+	Minor Disruption	No	Yes
Public Restroom Facilities	-	-	-	X	Flooding, Wind, Erosion	400+	Inconvenience	Yes	Yes
Public Boat Ramps	-	-	-	X	Flooding, Erosion, Ice	400+	Major Disruption	No	Yes
<b>Other Facilities (Not Town-Owned)</b>									
Saxis Volunteer Fire Company	-	X	X	X	Flooding, Wind, Fire	2,000+	Devastating	Yes	Yes
Saxis Causeway	-	X	X	X	Flooding, Erosion	400+	Devastating	No	Yes
Churches	-	X	X	X	Flooding, Wind, Fire	238+	Inconvenience	Yes	Yes
Saxis Island Museum	-	-	X	X	Flooding, Wind, Fire	400+	Minor Disruption	No	Yes
Post Office	-	-	X	X	Flooding, Wind, Fire	238+	Major Disruption	Yes	Yes
USGS Tide Gauge	-	-	X	X	Flooding	10,000+	Major Disruption	No	Yes

## FINDINGS

1. The community appears to have coastal A Zones where structures built to previous NFIP requirements can still suffer flood damage in the 100-year flood.
2. Storm water flooding issues are tidal-dependent and often related to debris and invasive plant species, such as phragmites, clogging up ditches and drains.
3. Locally, Saxis provides services to the surrounding area and serves as an economic center in northern Accomack County. The Town of Saxis is threatened with erosion although it sits at the highest location in the area. The loss of the harbor, fire station, and causeway would adversely impact the entire area including Saxis, Sanford, and Messongo.
4. The Town's office and fire station building has previously flooded and is located in the 100-year flood plain with a base flood elevation of 8 feet.
5. The Town is experiencing erosion and is actively pursuing projects and funding to construct protective wetlands to mitigate the problem. Reforestation and coastal resilience gardening RAFT projects are ongoing, as well as causeway repairs.
6. The Town's residents and FEMA need to document damages sufficiently in order for the various flood prone homes to receive mitigation assistance.
7. Structures are being built in the local hazard areas and older structures are being added to and remodeled, therefore, the amount of property at risk is increasing.
8. The Town has implemented an Emergency Response Program to ensure the safety of residents and visitors in preparation for hazards.