

Public Version

Dorchester County 2018 Historic & Cultural Resources Hazard Mitigation & Risk Plan



Source: *The Last House On Holland Island*, <http://presurfer.blogspot.com/2015/06/the-last-house-on-holland-island.html>

An addendum to the
Dorchester County
2017 Hazard Mitigation
Plan Update.



**WEATHER IT
TOGETHER**

Acknowledgements

Dorchester County Office of Tourism would like to acknowledge the following individuals for their aid in developing the *2018 Dorchester County Historic & Cultural Resources Hazard Mitigation & Risk Plan*.



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Chapter 1 Introduction

Historic and Cultural Resources Hazard Mitigation Planning

Hazard mitigation planning is the process of determining how to reduce or eliminate the loss of life and property damage resulting from natural and manmade hazards. The hazard mitigation planning process consists of four basic phases:

1. Organize Resources;
2. Assess Risks;
3. Development a Mitigation Plan; and,
4. Implement the Plan and Monitor Progress.

The importance of integrating historic property and cultural resource considerations into hazard mitigation planning due to the potentially devastating effects of disasters, specifically those related to flooding are evident. Oftentimes our historic and cultural resources are irreplaceable and may be lost forever following a disaster event if we do not take action to protect these vital community resources. In fact, historic properties and cultural resources are valuable economic assets that increase property values and attract businesses and tourism. Preservation and mitigation of these important resources are integral to the vitality, sense of place, and economic development of Dorchester County.

Hazard mitigation measures range in complexity and cost. Low-cost improvements include elevating utility and mechanical equipment. Higher-cost improvements include elevation, dry floodproofing, or relocation of the structure outside of the Special Flood Hazard Area.

Benefits from mitigation measures are significant relative to their cost, such as:

- Reduction of flood damages. The buildings may not sustain flood damages or at least those damages will be significantly less than if no mitigation measures were implemented.
- Reduction in flood insurance premiums. Buildings that are elevated to or above the BFE or relocated out of the floodplain can qualify for flood

Historic preservation planning

allows for the protection of historic properties and cultural resources before they are threatened with demolition or alteration.

Hazard mitigation planning allows for the protection of life and property from damage caused by natural and manmade hazards.

Integrating these two planning process will help ensure the future growth of safe and sustainable historic communities.

insurance at actuarial rates that are generally less expensive than even the subsidized flood insurance rates charged to existing structures.

- Long-term preservation of the building. Historic structures that are repeatedly flooded will deteriorate and eventually may have to be demolished unless they are protected from flooding. Mitigation measures can help preserve the building for future generations.

Through this planning effort the county sought to examine the risk of flood hazards including coastal flooding, hurricane storm surge, and sea level rise in relation to cultural and historic resources. While critical facilities and general building stock were the focus of both the overall *2017 Dorchester County Hazard Mitigation Plan* and the *2017 Dorchester County Flood Mitigation Plan*, this planning initiative was undertaken to specifically consider flood hazard risk and vulnerability to cultural and historic resources throughout Dorchester County.

Organizing Resources

Organizing resources involves identifying and assembling the necessary technical information, staff, and political and public support. To that end, Dorchester County hired a consultant who specializes in hazard mitigation planning to assist in the plan development. In addition, two planning teams were formed to assist throughout the plan development process: the Core Planning Team (CPT) and the Stakeholder Committee (SC).

Core Planning Team (CPT) Members:

Amanda Fenstermaker, Dorchester County Tourism

Juli Strohmer, Dorchester County Tourism

Anna Sierra, Dorchester County Emergency Management Agency

Steve Garvin, Dorchester County Emergency Management Agency

Jen Sparenberg, Maryland Historical Trust

Brian Ambrette, Eastern Shore Land Conservancy

Virginia Smith, SP&D

Michele King, SP&D

The CPT acts as an advisory committee, which meets prior to all SC meetings in order to set the agenda for the SC meetings.

CPT meetings were held on the following dates:

- April 25, 2017
- May 24, 2017

- July 5, 2017
- August 15, 2017
- September 26, 2017

Stakeholder Committee (SC) Members:

Brian Soper, Dorchester County Planning & Zoning
Brian Ambrette, Eastern Shore Land Conservancy
LaSara Kinser, City of Cambridge
Midge Ingersoll, Nanticoke Historic Preservation Alliance
Dr. Phillip Hesser, Salisbury University
Nick Ward, Dorchester County GIS
David Harp, Photographer
Jessica Feldt, Preservation Maryland
Chief Donna Abbott, Nause-Waiwash Indians
Steve Dodd, Dorchester County Planning & Zoning
Caroline Cline, Mayor of East New Market
Cindy Smith, Dorchester County Grant Administrator
Pastor Joan Brooks, New Revived United Methodist Church
Amanda Fenstermaker, Dorchester County Tourism
Juli Strohmer, Dorchester County Tourism
Anna Sierra, Dorchester County Emergency Management Agency
Jen Sparenberg, Maryland Historical Trust

The Stakeholder Committee supported and enhanced planning efforts and assisted with community support and outreach efforts. The Stakeholder Committee members had a broad range of backgrounds and experiences which ensured that historic properties and cultural resource considerations were addressed in the hazard mitigation planning process.

Stakeholder Committee meetings were held throughout the plan development process on the following dates:

- June 13, 2017
- July 11, 2017
- August 1, 2017
- August 29, 2017
- November 15, 2017
- February 21, 2018

As part of the overall outreach, collaboration, and information sharing effort, Dorchester County contacted their counterparts within the City of Annapolis. As the City of Annapolis has been working diligently over that last few years on cultural and historic

flood hazard mitigation, obtaining information on best practices and ideas was prudent. To that end, Lisa Craig, City of Annapolis, attended the June 13th Stakeholder Committee meeting. At the meeting, Ms. Craig presented information on the City of Annapolis' planning efforts and accomplishments. This presentation provided context and a sense of excitement to committee members. In addition, Ms. Craig indicated that the logo "Weather It Together", created by the City of Annapolis, is available for use by other jurisdictions and/or entities. In fact, the Maryland Historical Trust has decided to use the logo, with some slight alterations, for its Cultural Resources Hazard Mitigation Planning Program. Dorchester County has decided to use the logo, as well.



Stakeholder meeting held on July 11th and August 1st focused primarily on data analysis and results. Based on initial data analysis six *Area of Concerns* were identified. Following the presentation and discussion of this information at the July 11th meeting, stakeholders identified three additional *Area of Concerns*. Data analysis and results from the three additional *Area of Concerns* along with the results of the *Gap Analysis* was presented and discussed at the August 1st stakeholder meeting.

The presentation, review, and discussion of data analysis results empowered the Stakeholder Committee to focus on projects and outreach ideas at the August 29th meeting. Opportunities for public outreach were identified along with materials that would be needed to accomplish outreach activities. The idea of creating an outreach tool kit was discussed. Meeting attendees provided ideas for the contents of the tool kit. In addition, hazard mitigation ideas for historic properties was discussed along with the threat of sea level rise and how both present and future conditions need to be considered.

Photo of Stakeholder Committee



Photo Source: Smith Planning and Design

The November 15th Stakeholder meeting was primarily focused on the review of the *Maryland Historical Trust-Architectural Survey Form For Hazard Mitigation Planning*. Fieldwork completed for this project included survey work for sixteen prioritized historic properties. These properties met the criteria established for prioritization by the Core Planning Team and Stakeholder Committee. Completed survey forms were reviewed and discussed. In addition, sample items for inclusion into the outreach toolkit were displayed to committee meeting. Following discussion stakeholders provided feedback and additional items were identified for inclusion into the outreach toolkit.

Finally, during the Stakeholder meeting held on February 21, 2018, the Stakeholder Committee discussed plan implementation and established next steps. Members discussed continuation of the Core Planning Team meeting with larger established workgroups within the County. Mitigation measures that balances protection and preservation of historic structures was also a topic reviewed by the committee.

MARYLAND HISTORICAL TRUST
ARCHITECTURAL SURVEY FORM FOR
HAZARD MITIGATION PLANNING

Name of Property: 1516 Swan Island Date of Visit: _____
 Property Address: Street and Number 1814 Hoopersville Road
 City/Town Hoopersville County Dorchester
 Owner(s): Charles T. Jr and Emma Charlotte Rippert
 Owner Address: Street and Number 1814 Hoopersville Road
 City/Town Hoopersville
 State/ZIP MD 21634
 Owner Type: ☐ Public ☒ Private ☐ Both
 Telephone: _____ Email: _____
 Inspector's Name(s): _____ Telephone: _____
 Inspector's Affiliation: _____ Email: _____

A. STRUCTURE TYPE, USE, AND PREVIOUS SURVEY
 Category (e.g. Bldg., site, object): Building Current function: Residential
 MBHP Number D-16 Listed in National Register? ☒ No ☐ Yes
 In Listed National Register Historic District? ☒ No ☐ Yes Contributing Resource? ☐ No ☒ Yes
 Historic District Name: Hoopersville Survey District
 Local District Name: Hoopersville

B. STANDING STRUCTURES ON THE PROPERTY
 Please list the MBHP Number (if applicable), number, type and condition of standing structures on the property.
 Number of Standing Structures: 1
 1. 16 (main structure)
 2. _____ 5. _____
 3. _____ 6. _____
 4. _____ 7. _____

C. GEOLOCATION
 Quad attached: ☒ No ☐ Yes Quad Name: Horns, Maryland Quad Scale: 1:24,000
 Latitude: 38° 15' 44.21" North Longitude: 76° 10' 56.78" West

D. LEGAL DESCRIPTION AND PROPERTY VALUATION
 Tax Map: 0107 Tax Parcel: 0007 Tax ID No.: 000001644
 Market Value (Bldg.): \$62,800.00 Valuation Date: 01/2015 Total Square Feet: 1,240
 Square Footage (SF) Estimated? ☒ No ☐ Yes
 Valuation & SF Source:
 Maryland Department of Assessments & Taxation

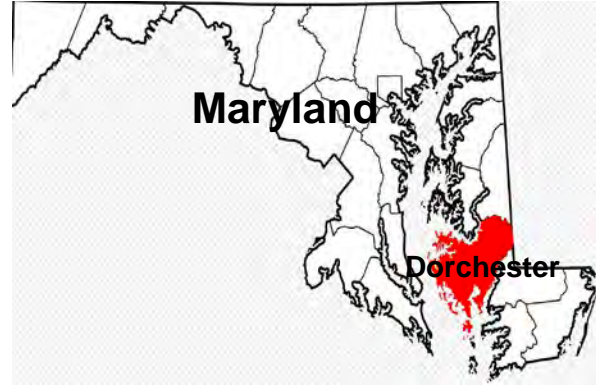
MBHT - Architectural Survey Form For Hazard Mitigation Planning August 2013

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Chapter 2 Community Profile

Location

Located in the central lower portion of the eastern shore along the Chesapeake Bay and adjacent to Talbot, Caroline and Wicomico Counties in Maryland and Sussex County in Delaware, Dorchester also shares a boundary through the Chesapeake Bay with Somerset, Calvert and St. Mary's Counties. According to the Maryland Department of Natural Resources-Maryland Geological Survey,



Dorchester County is the third largest of Maryland's twenty-three (23) counties. The land area of the county contains 593.22 square miles, with 676.75 square miles of water, and 1,539 miles of shoreline. Additionally, Dorchester County is situated between the Choptank and Nanticoke Rivers and is on the Blackwater and Transquaking Rivers, which drains into Fishing Bay and Marshyhope Creek, which drains into the Nanticoke River. Other major water bodies include the Little Choptank, Honga River, Little Blackwater River, Transquaking River, Chicamacomico River and Tar Bay.

The County seat, Cambridge is a regional economic center. The County comprises a mix of residential development and small villages and a strong desire to preserve its agricultural and cultural resources. The County contains nine (9) municipalities:

- Brookview;
- Cambridge;
- Church Creek;
- East New Market;
- Eldorado;
- Galestown;
- Hurlock;
- Secretary; and,
- Vienna.

Calvin Dill Wilson wrote of Dorchester County in the January 1898 edition of Lippincott's Magazine:

A Peninsular Garden

It is a garden and an orchard. Nature seemed unkind when she stewed this sand upon clay without stones; but she repented, clothed it all in verdure, made it yield almost every fruit, vegetable and berry in profusion and of the finest quality, filled even the swamps with cypress, cedar and pine, stored the streams with fishes, filled the waters along the coasts with shell fish...sent flocks of birds into the fields and woods, and flights of wild fowl upon all the waters.

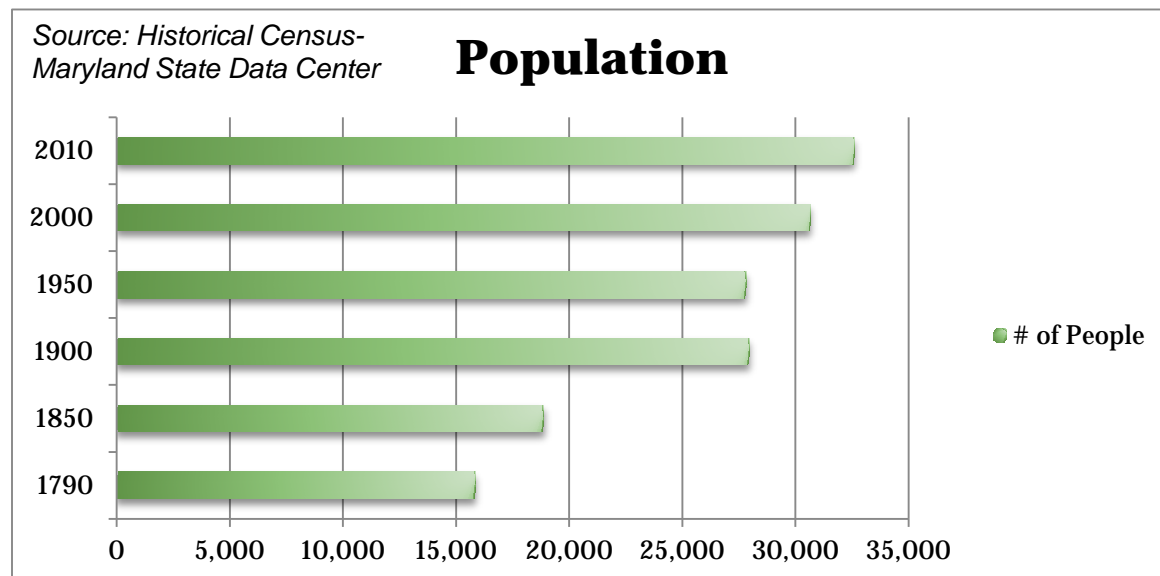
Source: Elias Jones, New Revised History of Dorchester County, Maryland (Cambridge, Md: Tidewater Publication, 1925;1966), p.271.

Naming of the County

Dorchester County was sometimes referred to as “Old Dorset”. The name is thought to have originated from the fourth Earl of Dorset, Sir Edward Sackville. Some say that Dorchester County was named to honor him. He served King James I of England.

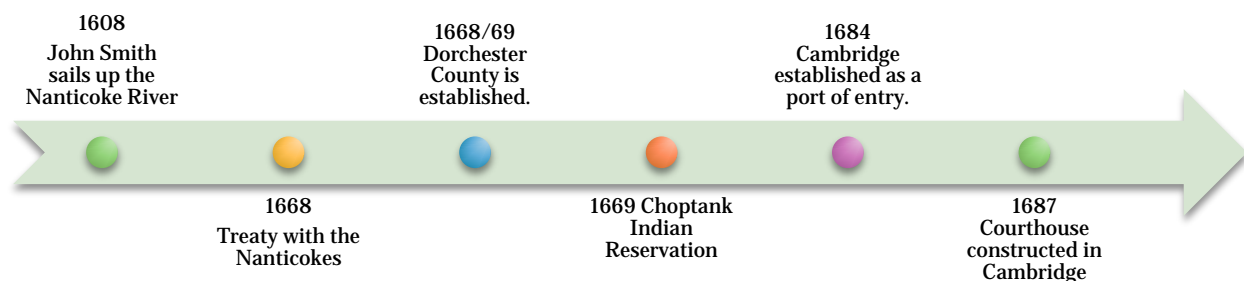
Historical Census Data

Census data for Dorchester County starting in the year, 1790, indicates that 15,875 people resided within the county. The 2010 U.S. Census indicates that the population of the county was 32,618 people, more than double the number of people residing in the county in the year 1790.



Historical Chronology

Pre entries from the Maryland Manual On-Line, the historical chronology for Dorchester County, Maryland began with Captain John Smith's exploration of the Nanticoke River in 1608 and are included on the following pages.



1668, May 1. Treaty with [Nanticokes](#).

NANTICOKE

Named Kuskarawaok by John Smith during his travels of 1608, the Nanticoke primarily maintained villages on the Eastern Shore along the Nanticoke River. The largest village was Kuskarawaok on Chicone Creek near present-day Vienna in Dorchester County. During the mid-1700s, most of the Nanticoke left Maryland. Those that remained purchased land and assimilated with the European settlers.

1668/69. Feb. 16. [Dorchester County](#) known to have been established by this date, when a writ was issued to county sheriff; named for [Sir Edward Sackville](#) (1590-1652), 4th Earl of Dorset.

“The year 1669 is traditionally given as the “birth” of Dorchester County; that was the year Governor Calvert and his council issued a writ ordering an election to be held for delegates of the provincial assembly.”

Source: Between the Nanticoke and the Choptank: An Architectural History of Dorchester County, MD

1669. [Choptank](#) Indian Reservation laid out near Cambridge.

1673. Court sessions held at Harwood's Choice.

1684. [Cambridge](#) on Choptank River laid out by commissioners, made a port of entry.

“Dorchester County has a good Courthouse with brick chimneys, no ordinary is kept therein and the records are kept at the Clerke's House.”

Source: Between the Nanticoke and the Choptank: An Architectural History of Dorchester County, MD

1687. Courthouse constructed at Cambridge.

1698. Nanticoke Indian Reservation laid out near Vienna.

1704. Treaty with [Nanticokes](#).

1744. Many Nanticokes left Maryland to join [Iroquois](#), traveling north to Pennsylvania, New York, and Ontario, Canada.

1750, Nov. [John Henry](#) (1750-1798), Governor of Maryland, born at “Weston”, near Vienna.

1760, Feb. 9. [William Vans Murray](#) (1760-1803), U.S. Representative, 1791-1797, and U.S. Minister to the Netherlands, 1797-1801, born in Cambridge.

1765, July 15. [Charles Goldsborough](#) (1765-1834), Governor of Maryland, born at “Hunting Creek”, near Cambridge.

1767. Nanticokes relinquished their land claims in Maryland.

1770. Second Courthouse built at Cambridge.

1773. [Caroline County](#) erected from Dorchester and Queen Anne's counties.

1776, Sept. 16. Eastern Shore Battalion of [Flying Camp](#) fought under Col. William Richardson at Battle of Harlem Heights in present-day Manhattan, New York.

1793. City of [Cambridge](#) incorporated.

1798. Maryland purchased land still belonging to Choptanks.

1798, Sept. 2. [Thomas Holliday Hicks](#) (1798-1865), Governor of Maryland, born near East New Market.

1815, Feb. 7. Battle of the Ice Mound, Taylor's Island, Dorchester County.

1816, May 21. Stephen Allen Benson (1816-1865), President of Liberia, 1856-1864, born in Cambridge.

1818. New Market Academy founded at East New Market.

1822. Araminta (Minty) Ross (later known as [Harriet Tubman](#)) born south of Madison.

1832. Town of [East New Market](#) incorporated.

1833. Town of [Vienna](#) incorporated.

1849. [Harriet Tubman](#) (1822-1913) escaped to Philadelphia, fleeing slavery in Dorchester County.

1852, May 9. Fire destroyed Courthouse at Cambridge.

1852, Feb. 21. [Henry Lloyd](#) (1852-1920), Governor of Maryland, born in Dorchester County.

1853. Third Courthouse built at Cambridge.

1857, May 14. [Samuel Green](#) (c.1802-1877) of East New Market sentenced at Cambridge to 10 years in [Maryland Penitentiary](#) for possession of [Uncle Tom's Cabin](#).

1858. [John Brown](#) and [Harriet Tubman](#) met at St. Catharine's, Ontario, Canada, to discuss his planned raid on Harper's Ferry. While raising funds for the raid, Tubman did not participate due to illness.

1862. Harriet Tubman moved to Beaufort, South Carolina (then occupied by federal forces), aiding slaves in transition to freedom, as well as acting as a spy and scout for the Union.

1863. Harriet Tubman recruited former slaves to act as spies and scouts for federal forces, guiding Union gunboats in raids against Confederate coastal encampments, and relocating slaves north.

1864, March 26. [Emerson C. Harrington](#) (1864-1945), Governor of Maryland, born at Madison.

1865, Aug. 6. [Phillips Lee Goldsborough](#) (1865-1946), Governor of Maryland, born in Cambridge.

1867. Town of [Church Creek](#) incorporated.

1892. Town of [Hurlock](#) incorporated.

1900. Town of [Secretary](#) incorporated.

1915. Eastern Shore State Hospital (now [Eastern Shore Hospital Center](#)) opened at Cambridge.

1930, May 27. [John Barth](#) born in Cambridge.

1931. Courthouse at Cambridge enlarged.

1933. [Blackwater National Wildlife Refuge](#) established as a waterfowl sanctuary for migratory birds.

1935, Oct. 26. Governor Emerson C. Harrington Bridge crossed Choptank River at Cambridge.

1947. Town of [Eldorado](#) incorporated.

1951. Town of [Galestown](#) incorporated.

1953. Town of [Brookview](#) incorporated.

1962, Jan. 13, 20, 27. Three Freedom Rides from Baltimore to Cambridge organized by Baltimore Civic Interest Group.

1962, Jan. Cambridge Nonviolent Action Committee formed by Gloria Richardson and other parents.

1963, June 11. First [Cambridge riots](#). National Guard remained through May 1965.

1967, July 25. Second [Cambridge riots](#).

1970. Center for Environmental and Estuarine Studies (now [Center for Environmental Science](#)) created at Cambridge by University of Maryland Board of Regents.

1971. County public schools desegregated.

1978. [Jim Richardson](#) (builder) launched replica pinnacle [Maryland Dove](#), LeCompte Creek, Dorchester County.

1987. Frederick C. Malkus Bridge opened across Choptank River at Cambridge.

2002, Sept. 10. Electronic voting machines first used during primary elections in four counties (Allegany, Dorchester, Montgomery, Prince George's).

2002, Dec. 5. [Charter](#) form of county government adopted.

2004, March 2. Electronic voting system used during primary elections at polling places and for absentee ballots in all counties and Baltimore City.

Note: According to the Maryland Historical Society, land records for Dorchester County date back to 1675.

Significant 19th Century Historical Hazard Events

- 1867 Devastating summer hurricane levels almost every tobacco field around the Chesapeake Bay.
- Blizzard of 1888, blew down the windmill, reconstructed thereafter to mimic the original (D-58), built on land donated by the late United States Senator Georges Radcliffe, a descendant of Stephan Gary.
- The “Centennial Tide” of 1876 destroyed miles of coastline and had a devastating effect on agriculture. It forced abandonment of several outlying islands: residents of Barren Island, the lowest of the series of islands collectively known as Hooper Island, used barges to float their homes to safer ground on the mainland.¹
- Two fires, one on November 30, 1882, and the other on July 30, 1892, destroyed large areas of the City of Cambridge and caused thousands of dollars in damages.²

Native Americans

The Indians living in Dorchester County in the seventeenth century were primarily Choptanks and Nanticokes, who rather than living in permanent villages, moved from one seasonal camp to another gathering their food.³ English settlement in the area was possibly encouraged following the signing of a treaty between the Choptank Indians and the government of Maryland in 1659. Native Americans generally viewed the land as being held in common and not transferable in any way that would permanently exclude them from use of the land.⁴ The differing view of land ownership between the Native Americans and English settlers set the stage for the eventual land take-over that occurred. For instance, a thirty square mile tract of land, once reserved for the Choptank Indians, is now the area where the Hyatt Regency Chesapeake Bay Golf Resort, Spa and Marina, Dorchester Memorial Park and Cemetery, and the Cambridge-Dorchester Municipal Airport are sited.⁵

¹ Thomas A. Flowers, ed., *Dorchester Tercentary Bay County Festival*, p.28.

² Christopher Weeks, ed., *Between the Naticoke and the Choptank; An Architectural History of Dorchester County, Maryland*, p. 71.

³ Jacqueline Simmons Hedberg, *Roger Hooper and the Sherriff, Hooper's Island First One Hundred Years*, (Copyright © 2012 by Jacqueline Simmons Hedberg) pg. 8.

⁴ W. Stitt Robinson, “Conflicting Views on Landholding: Loard Baltimore and the Experiences of Colonial Maryland with Native Americans,” *Maryland Historical magazine* 83, no. 2 (1988): 89.

⁵ Jacqueline Simmons Hedberg, *Roger Hooper and the Sherriff, Hooper's Island First One Hundred Years*, (Copyright © 2012 by Jacqueline Simmons Hedberg) pgs.10-11.

A further account of the Nanticoke Indians comes from one of their chiefs—White by name.

“Every Indian being at liberty to pursue what occupation he pleases, my ancestors, after the Lenape came into their country, preferred seeking a livelihood by fishing and trapping along the rivers and bays to pursuing wild game in the forests; they therefore detached themselves and sought the most convenient places for their purpose. In process of time they became very numerous, partly by natural increase, and partly in consequence of being joined by a number of the Lenape, and spread themselves over a tract of land and divided into separate bodies. The main branch of the Nanticokes proper were then living on what is called the Eastern Shore of Maryland. At length the white people crowded so much upon them that they were obliged to seek another abode and as their grandfather, the Delaware, was himself retreating back in consequence of the great influx of the whites, they took the advice of the Mengroe (mingo’s) and bent their course to the large flats of Wyoming, where they settled themselves, in sight of the Shawanos town, while others settled higher up the rivers, even as high as Chemenk (Shenango), and Shummunk, to which places they emigrated at the beginning of the French War. “Nothing,” said White, “equaled the decline of my tribe since the white people came into the country. They were destroyed, in part by disorders they brought with them, by the smallpox and by the free use of spirituous liquors to which great numbers fell victims.”

“The Nanticoke, the Choptanks and the Metapeake Indians, descendents of the Delawares, were first seen along the bay shores of Talbot county by **Captain John Smith** and his exploring party from Virginia in 1608 and later by Claybourne and his trading party four or five years before **Lord Baltimore’s** Colonists landed at Saint Mary’s, near the mouth of Saint Mary’s river. They had a peculiar and sacred respect for their dead. The corpse was buried for some months and then exhumed and the bones carefully cleaned and placed in an ‘Osuary,’ called manot-kump, (Manito) with the local termination or rather signification, “place of the mystery spirit.” When their tribes moved from one place to another they carried the bones of their dead with them. When they emigrated, about the middle of the 18th century and settled in northern Pennsylvania, they carried their sacred relics with them, in bags on their back, and buried them near the present site of Towanda. The Indian name literally meant “where we bury our dear.”

Source: *Eastern Shore Indians*: <http://www.rootsweb.ancestry.com/~mdcaroli/ESIndians.html>

Heart of the Chesapeake Country Heritage Area

The Maryland Heritage Area Authority (MHAA) oversees 13 regions designated as Certified Heritage Areas. These heritage areas leverage public and private partnerships to stimulate economic development through heritage tourism. The Maryland Heritage Areas Authority supports heritage areas with targeted financial and technical assistance. By investing public dollars, MHAA seeks to spark private investment and motivate local leadership to embrace a sustainable level of heritage tourism.

Each of Maryland’s Certified Heritage Areas is defined by its distinctive characteristics that make it different from other parts of the state. Most of Dorchester County is certified as the Heart of Chesapeake Country Heritage Area.

The themes that define the Heart of Chesapeake Country Heritage Area are:

- Agricultural Life;
- Architecture & Artifacts;

- Dorchester Families and Traditions;
- Harriet Tubman and African American History;
- Maritime Villages, Trades, and Life;
- Outdoor Adventure: Chesapeake Landscapes and Waterscapes; and,
- Native American Heritage.

Notable Historic Buildings and Sites

The Town of East New Market's historic district contains many of the early founders' homes: Friendship Hall, House of the Hinges, Smith Cottage, Edmondson House, New Market House and Little Manning House to name a few. Buckland, a New England salt-box design, is unique to the area.

Vienna was founded in 1706 but existed prior to 1669. It was known by other names in early years: Emperors Landing, or simply Town on the Nanticoke. The Calvert family apparently intended that it be called Baltimore. The original customs house stands at the south end of Water Street, next to Nanticoke Manor House. "Something the damn Yanks can't burn," boasted Captain James Lewis when he built his home of brick in 1861. Other historic structures include the former home of Governor Holiday Hicks, the Tavern House, Captain C. E. Wright House, Thomas Higgins House and the Ferry House. St. Paul's Episcopal Church is one of the oldest houses of worship in Dorchester County. The Vienna Heritage Museum is home to the last mother of pearl button machine equipment in use in the U.S.

North of Vienna, Indian Town Road bisects what was once the largest Indian reservation in Maryland. Chicacone was abandoned by the last of the Nanticokes in the eighteenth century.

Beyond Horn Point, six miles west of Cambridge on MD Route 343, is Spocott, once a self-contained village and today the site of the only post windmill used for grinding grain in Maryland. An eighteenth century tenant house, a Victorian school and a country market create a museum setting to showcase local history.

Six miles southwest of Cambridge, Church Creek straddles Rt. 16. Here, Old Trinity, the oldest Episcopal church in the United States, was constructed around 1675 and has been meticulously restored. In the church yard, among the shaded graves of generations of Dorchester residents, the curious will discover heroes from all of America's wars, a Maryland governor and his daughter, Anna Ella Carroll – advisor to Abraham Lincoln, and the enigmatic "miller's grave."

A few miles beyond Church Creek, Blackwater National Wildlife Refuge sprawls across more than 27,000 acres of tidal marsh and mixed forest. At the peak of the fall migration, visitors can view thousands of geese and ducks. Shorebirds and warblers assume top billing in spring. The refuge is also home to the endangered Delmarva fox squirrel and is the best location in the East to observe bald eagles.

17th Century Architecture

According to *Between the Nanticoke and the Choptank: An Architectural History of Dorchester County, MD*, the architecture of the colonial years was predominantly British in inspiration. The willingness for the colonists to build new architecture fitted to the natural environment as the Indians had done before them was never strong. Colonists tended to build some version of farmhouses found in England, which they remembered and reproduced to an extent. One of the oldest construction methods in Maryland was “puncheoning,” in which puncheons (stout pieces of wood) were set upright into the ground to form a palisade, the spaces between the wooden posts were filled with wattle and daub.”⁶

In addition, the following information was found pertaining to 17th century architecture in Dorchester County within the book, *Between the Nanticoke and the Choptank: An Architectural History of Dorchester County, MD*, “An indication of building materials commonly used in the turn-of-the-eighteenth century architecture in Dorchester County is given by the Elsing House, often simply called “the Old House on Church Creek.” The earliest portion of the house is the brick west end, which is two bays long and two deep. Rising above the steeply pitched roof is the original brick chimney, while a belt course runs at the second-floor level on the gable side. The once-beautiful Flemish bond brickwork is covered by stucco, and the house itself is engulfed in nineteenth century additions. Nevertheless, there remains much that is original in this house, possible the oldest in the county.”

⁶ H. Chandlee Forman, *Old Buildings, Gardens, and Furniture in Tidewater Maryland* Cambridge, Md.: Tidewater Publishers, 1967, p.6.



Photo Source: Paul Touart, 10/2012

Elsing

Other examples of eighteenth century architecture include the Richardson House, near the Trinity Church on Church Creek, the Hull, or Woolford House, and the Hill in Cambridge.

18th Century Architecture

A prime example of an 18th century structure in Dorchester County is Carthegena, built in or around 1720, when the prosperous landowner, Henry Trippe, acquired the property. The principal portion of Carthegena is laid in Flemish bond on a stone foundation. The building has steeply pitched roof with three dormers, and a large chimney.



Other examples include the Travers House, on Taylor's Island, the Hallie Seward House, in Church Creek, and Jarvis Hill, on Horn Point.

Dr. Henry Chandlee Forman, in his *Early Manor and Plantation Houses in Maryland*, identified the “one and a half story house types” as one of the five (5) principal building types of Dorchester County. Jones Regulation, located in the Neck District, a prime example of the one and a half story frame building with a chimney at each gable end.



Another example of early 18th century architecture is Yarmouth, which sits very high off the ground, 44 inches. Dr. Henry Chandlee Forman categorized this type of building as the Transquaking type. Yarmouth is further identified by its end chimneys placed flush to the gables and by the arched heads over the first floor windows.



Friendship Hall, located in east New Market, represents late eighteenth-century architecture. A brick, L-shaped structure, with a west gable, two oval windows displaying classical design, categorized by Dr. Henry Chandlee Forman as an “East New Market house.” The East New Market house” is one of five Dorchester County housing types categorized by Dr. Forman.



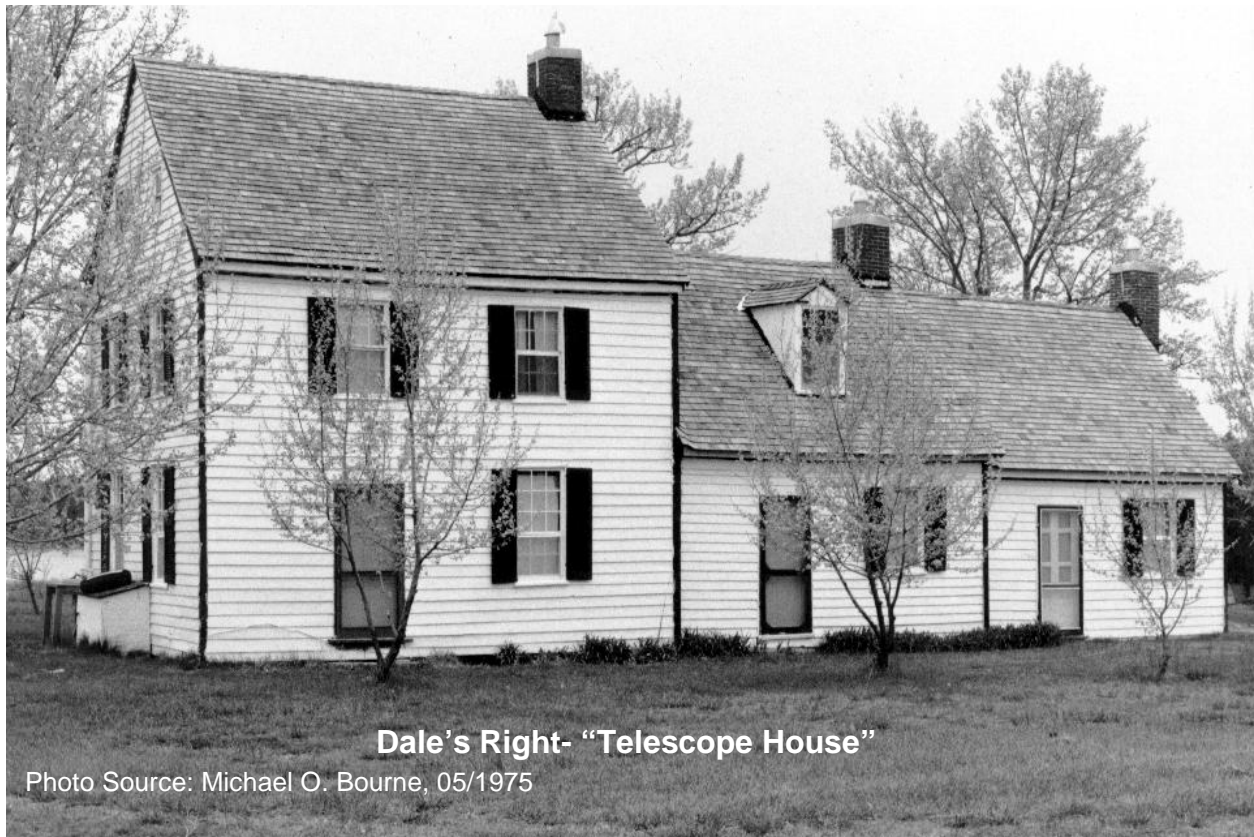
There are many examples of Federal house built in the 1700's, which continued to be a popular style for houses well into the 1800's. In particular, East New Market and Cambridge boast many examples. High Street in Cambridge contains several houses in the 200 block of this housing type.

19th Century Architecture

Following a period of peace after the War of 1812, various revival styles, such as Italianate, Greek, Gothic, and Romanesque appeared throughout the county. However, despite the construction of buildings displaying revival styles, the Federal style remained the preferred style.

One of the more popular revival styles used in the county was Italianate. The county courthouse in Cambridge, located on High Street, erected in 1852, was designed in the Italianate style. The Tanyard Farm, located near Salem, was built with Gothic Lancet windows. The National Bank of Cambridge, on High Street, is an excellent example of Romanesque architecture. Finally, the Goldsborough House at 200 High Street possesses features such as a classical portico and columns that are decidedly Greek in style.

Farmhouses did not change in style in as much as size. Rural farmhouses were enlarged during this time period: a house would be raised one-story or perhaps a wing may have been added to the back or side. On the Eastern Shore, a housing form known as the “telescope house” was recognized. The “telescope house” refers to two or more progressively smaller additions attached to one side of the original home. Deal’s Right, or Dale’s Right on Casson’s Neck, is a classic telescope house.



20th Century Architecture

An internationally popular style of architecture, Queen Anne style, was prominent in the late nineteenth and early twentieth centuries. An example of a Queen Anne house is located at 305 Mill Street, Cambridge. Displaying the requisite Queen Anne architectural features, including: a two-story bay window; pedimented gables; a mixing of surface material and window styles; and columns and balconies.



Another fine example of twentieth century architecture if the colonial revival style, a departure from the international popular Queen Anne style, indicating a shift to the classicism of the post-Victorian years. The bungalow style houses are another twentieth century style found throughout the county, however, this style is not very common Maryland. According to *Between the Nanticoke and the Choptank: An Architectural History of Dorchester County, MD*, Dorchester's bungalows are slightly atypical from their western counterparts. Differences include slight variations and additional style elements, not seen on a traditional bungalow.



Differences from a traditional bungalow noted from *Between the Nanticoke and the Choptank: An Architectural History of Dorchester County, MD*, states, “Its massing, porch, and pier-support column are pure bungalow, but its jerkinhead roofs on the house and porch are individual touches.”

Chapter 3 Risk Assessment

Hazard Identification

In Dorchester County, flood origins include riverine flooding from a number of rivers, creeks and streams and coastal flooding from the Chesapeake Bay. Riverine flooding sources include the Choptank River, the Nanticoke River, Marshyhope Creek, Miles Branch, Honga River, Chicamacomico River, Blackwater River, Transquaking River, Hunting Creek, Gales Creek, Chicone Creek, Writes Millpond Branch, Otter Pond Branch, Davis Millpond Branch, South Davis Millpond Branch, and North Davis Millpond Branch.

The topography of Dorchester County is relatively flat and near sea level resulting in a “high” flood vulnerability. Nearly 75 percent of land in the county has an elevation under 20 feet above sea level and 55 percent of the land in the county lies in the 1-percent-annual-chance floodplain (also known as the 100-year floodplain or Special Flood Hazard Area). Historically, flooding problems in the county are largely the result of impacts from major thunderstorms, hurricanes, or tropical storms during the summer and fall. Notable major flood events include Hurricane Isabel in 2003, and Hurricane Irene in 2011.

Inventory of Historic Properties & Cultural Resources

The county floodplain management ordinance definition for historic structures is compliant with the National Flood Insurance Program’s definition for historic structures, however, there are some slight differences.

Dorchester County 2015 Floodplain Management Ordinance **Historic Structure**

Any structure that is:

- [1]** Individually listed in the National Register of Historic Places (a listing maintained by the United States Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listings on the National Register;
- [2]** Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district; or
- [3]** Individually listed on the Maryland Register of Historic Places.

Dorchester County Code uses the exclusion method to exempt historic structures from meeting SD/SI requirements:

Substantial Improvement

Any reconstruction, rehabilitation, addition, or other improvement of a building or structure, the cost of which equals or exceeds 50% of the market value of the building or structure before the start of construction of the improvement. For regulatory requirements that are not set forth in these regulations, the most current edition of FEMA publication P-758, "Substantial Improvement/Substantial Damage Desk Reference," shall be used. The term includes structures which have incurred substantial damage, regardless of the actual repair work performed. The term does not, however, include either:

[1] Any project for improvement of a building or structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official prior to submission of an application for a permit and which are the minimum necessary to assure safe living conditions; or

[2] Any alteration of an historic structure, provided that the alteration will not preclude the structure's continued designation as an historic structure.

Source: Dorchester County Code §155-37 Floodplain Management District, A. General Provisions, 10. Definitions.

This definition is important to note as mitigation measures must be appropriate and adhere to the regulatory framework. There are extra regulatory reviews for mitigation projects for properties that meet the definition of historic structure when those projects are funded by the federal agencies, including FEMA's Hazard Mitigation Assistance Grant Program, and by state agencies.

Dorchester County historic property and cultural resources data was queried and cross-referenced from sources including, but not limited to: Maryland Inventory of Historic Properties (MIHP), locally designated historic properties and cultural resources including cemeteries, Maryland's military monuments, Maryland's Archeological Synthesis Project, Maryland Property View, and 2017 *Dorchester County Hazard Mitigation Plan*-Geodatabase. Data was exported into a Historic and Cultural Resources Mitigation Geodatabase that was used throughout the assessment.

The Historic & Cultural Resources Geodatabase (H&CRG) developed during this planning process included 1,880 buildings and sites listed within the Maryland Inventory of Historic Properties (MIHP) and of those buildings and sites 1,099 are listed in the

National Register of Historic Places (NRHP). In order to analyze the potential risk of flood, hurricane, and sea level rise to MIHP and NRHP buildings, additional flood hazard data was reviewed and incorporated into the H&CRG. Results were developed as shown on the tables on pages 3-4, 3-7, and 3-8.

Hazard Prone Flood Areas and Magnitude

Identifying where a flood will occur does not necessarily convey flood risk; the most common method in determining flood risk and vulnerability is to determine both **probability** and **consequences**. The probability of a flood is the likelihood that a flood will occur. The consequences of a flood are the estimated impacts associated with the flood occurrence.

Through Risk MAP, FEMA provides communities with updated Flood Insurance Rate Maps (FIRMs) and Flood Insurance Study (FIS) Reports that focus on the probability of floods and that show where flooding may occur as well as the calculated 1-percent-annual-chance flood elevation. The 1-percent-annual-chance flood, also known as the base flood, has a 1 percent chance of being equaled or exceeded in any given year.

Digital Flood Insurance Rate Map (DFIRM) contains flood inundation areas that are depicted as flood zones. Flood zones include: Zones A, AE, VE, and X (shaded and un-shaded).

Flood Zone	Description
SFHA-High Risk Areas	
A	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.
AE	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
VE	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
Moderate Risk Areas	
X (Shaded) 0.2% or 500 yr.	Moderate flood area(s), shaded area(s) shown on FIRM, are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood
Minimum Risk Areas	
X (Un-shaded)	The areas of minimal flood hazard, which are areas outside the SFHA and higher than the elevation of the 0.2 percent-annual-chance flood, are labeled Zone X (un-shaded).

- 0.2-percent-annual-chance flood: The flood elevation that has a 0.2-percent chance of being equaled or exceeded each year. Sometimes referred to as the 500-year flood.
- 1-percent-annual-chance flood: The flood elevation that has a 1-percent chance of being equaled or exceeded each year. Sometimes referred to as the 100-year flood.

Source: *Fema.gov*

Buildings and sites documented in the Maryland Inventory of Historic Properties (MIHP), including historic districts, within a FEMA Flood Zone:

Flood Zone	# of Buildings
High Risk (SFHA)	
AE	383
A	18
VE	0
Moderate Risk	
X 500 yr.	143
Minimal Risk	
X	1,338
Total # MIHP building within FEMA flood zones: 1,880	

MIHP Buildings in Special Flood Hazard Area (SFHA) High Risk (Zone AE Only)					
AE Flood Zone	Depth of Flooding - MIHP Buildings				
	3 ft. ↑	2.5 ft.- 2.9 ft.	2.0 ft.- 2.4 ft.	1.5 ft.- 1.9 ft.	1.4 ft. ↓
	121	87	51	48	75

Data presented within tables were derived from the following sources: MHT, FEMA Flood Risk Map Products, and Smith Planning and Design

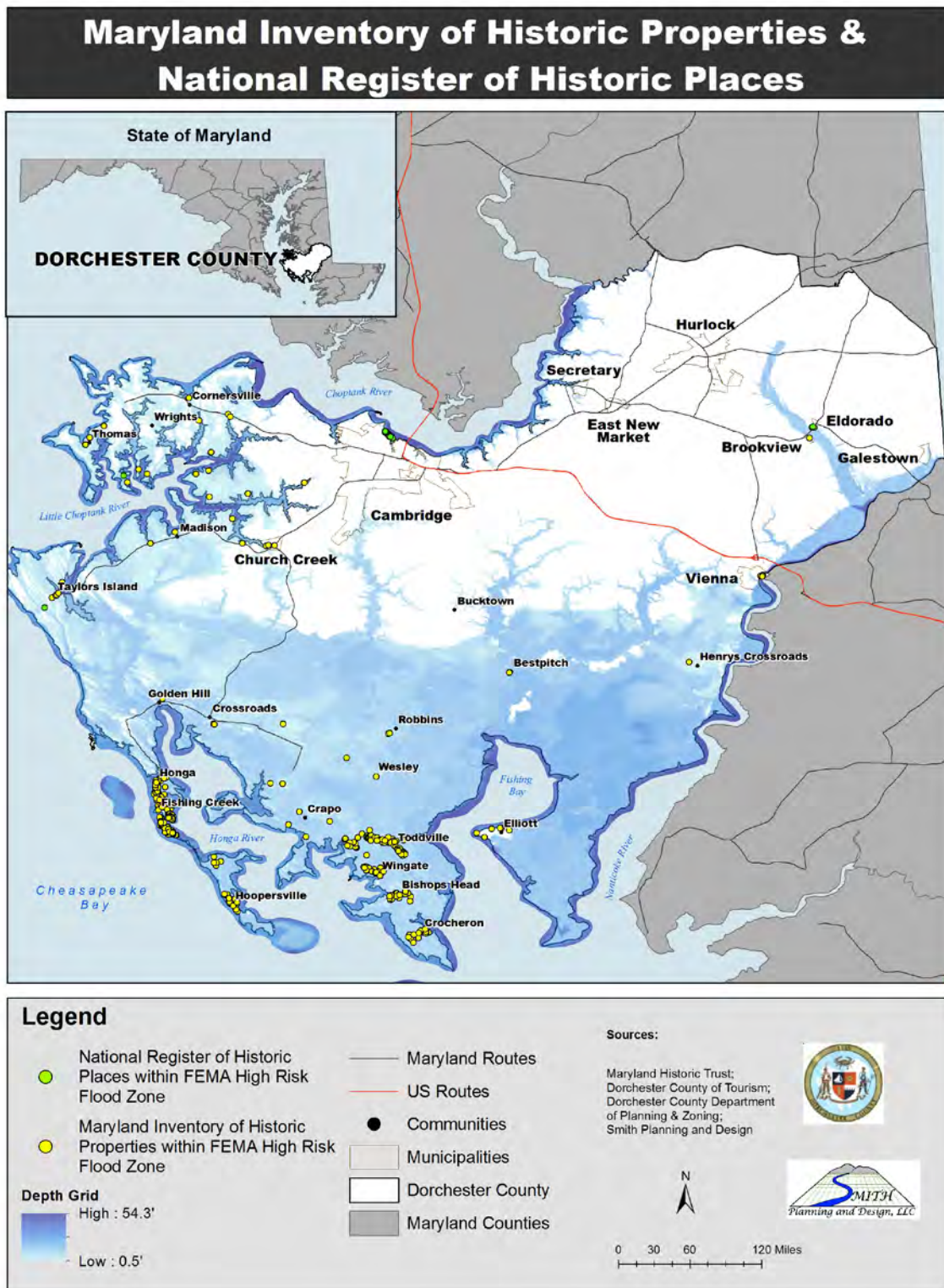
Buildings and sites listed within the National Register of Historic Places, including historic districts, within a FEMA Flood Zone:

Flood Zone	# of Buildings
High Risk (SFHA)	
AE	39
VE	0
Moderate Risk	
X 500 yr.	37
Minimal Risk	
X	1,023
Total # NRHP building within FEMA flood zones: 1,099	

NRHP Buildings in Special Flood Hazard Area (SFHA) High Risk (Zone AE Only)					
AE Flood Zone	Depth of Flooding - NRHP Buildings				
	3 ft. ↑	2.5 ft.- 2.9 ft.	2.0 ft.- 2.4 ft.	1.5 ft.- 1.9 ft.	1.4 ft. ↓
	0	3	16	9	11

Historic buildings and sites located within FEMA flood zones are primarily in southern Dorchester.





Hazus Flood Loss Estimations

Flood loss estimations for historic properties were calculated utilizing FEMA's Hazus.

Hazus is a nationally applicable standardized methodology that contains models for estimating potential losses from earthquakes, floods, and hurricanes. Hazus uses Geographic Information Systems (GIS) technology to estimate physical, economic, and social impacts of disasters. It graphically illustrates the limits of identified high-risk locations due to flood. Users can then visualize the spatial relationships between populations and other more permanently fixed geographic assets or resources for the specific hazard being modeled, a crucial function in the pre-disaster planning process.

Hazus is used for mitigation and recovery, as well as preparedness and response. Government planners, GIS specialists, and emergency managers use Hazus to determine losses and the most beneficial mitigation approaches to take to minimize them. Hazus can be used in the assessment step in the mitigation planning process, which is the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage. Being ready will aid in recovery after a natural disaster.



Source: <https://www.fema.gov/hazus>

All parcels containing structures were assessed to determine which structures were built in or prior to 1967. (Note: these properties are further assessed in *Chapter 4 Areas of Concern* and *Chapter 5 Gap Analysis*). These properties were then imported into Hazus as User Defined Facilities (UDF's) along with the flood depth grids for an **enhanced hazus analysis**.

FEMA's Hazus program was utilized to determine flood losses for the 1-percent-annual-chance flood event. In order to accurately calculate loss estimates, user defined data, including UDF's were imported into Hazus. First, depth grids were developed using the high-resolution digital elevation model (DEM) and FIRM Zones AE and VE with a static base flood elevation (BFE) for the approved Digital Flood Insurance Rate Maps (DFIRM). FEMA's new Flood Insurance Rate Maps (FIRM) for Dorchester County became effective in March 2015. Flood depths were obtained by subtracting the water surface from the ground elevation; resulting in depth grids.

Hazus flood loss estimations for historic structures in Dorchester County built in or prior to 1967 are presented on the data table below.

Location	Building Loss	Content Loss	Total
Unincorporated Areas	\$12,386,218	\$8,312,048	\$20,698,266.00
Town of Brookview	\$0	\$0	\$0
City of Cambridge	\$847,637	\$74,053	\$921,690.00
Town of Church Creek	\$54,719	\$19,830	\$74,549.00
Town of East New Market	\$0	\$0	\$0
Town of Eldorado	\$11,074	\$3,942	\$15,016.00
Town of Galestown	\$307	\$992	\$1299.00
Town of Hurlock	\$0	\$0	\$0
Town of Secretary	\$38,310	\$33,061	\$71,371.00
Town of Vienna	\$39,037	\$101,120	\$140,157.00
Total Loss	\$13,377,302.00	\$8,545,046.00	\$21,922,348.00

Source: 2016 FEMA Dorchester Flood Risk Product Database & Smith Planning and Design

Hazard Prone Hurricane Areas and Magnitude

According to the National Hurricane Center-Storm Surge Overview, **storm surge** is an abnormal rise of water generated by a storm, over and above the predicted astronomical tides. Storm surge should not be confused with storm tide, which is defined as the water level rise due to the combination of storm surge and the astronomical tide. This rise in water level can cause extreme flooding in coastal areas particularly when storm surge coincides with normal high tide, resulting in storm tides reaching up to 20 feet or more in some cases.

The southern portion of Dorchester County along with the Towns of Brookview, Church Creek, Eldorado, Galestown, Secretary, Vienna, and the City of Cambridge are affected by storm surge. In addition, unincorporated areas vulnerable to storm surge include the Neck District, Fishing Creek, Taylors Island, Hoopersville, Crocheron, Toddville, and Wingate.

Buildings listed documented in the MIHP, including historic districts, within the storm surge inundation area (hurricane categories 1-4): 834

Hurricane Category	# of Buildings
Category 1	474
Category 2	127
Category 3	172
Category 4	61

Data presented within table were derived from the following sources: MHT, USACE, Planning Division, Baltimore District 2016, and Smith Planning and Design

Buildings listed in the NRHP, including historic districts, within the storm surge inundation area (hurricane categories 1-4): 278

Hurricane Category	# of Buildings
Category 1	62
Category 2	75
Category 3	76
Category 4	65

Data presented within table were derived from the following sources: MHT, USACE, Planning Division, Baltimore District 2016, and Smith Planning and Design

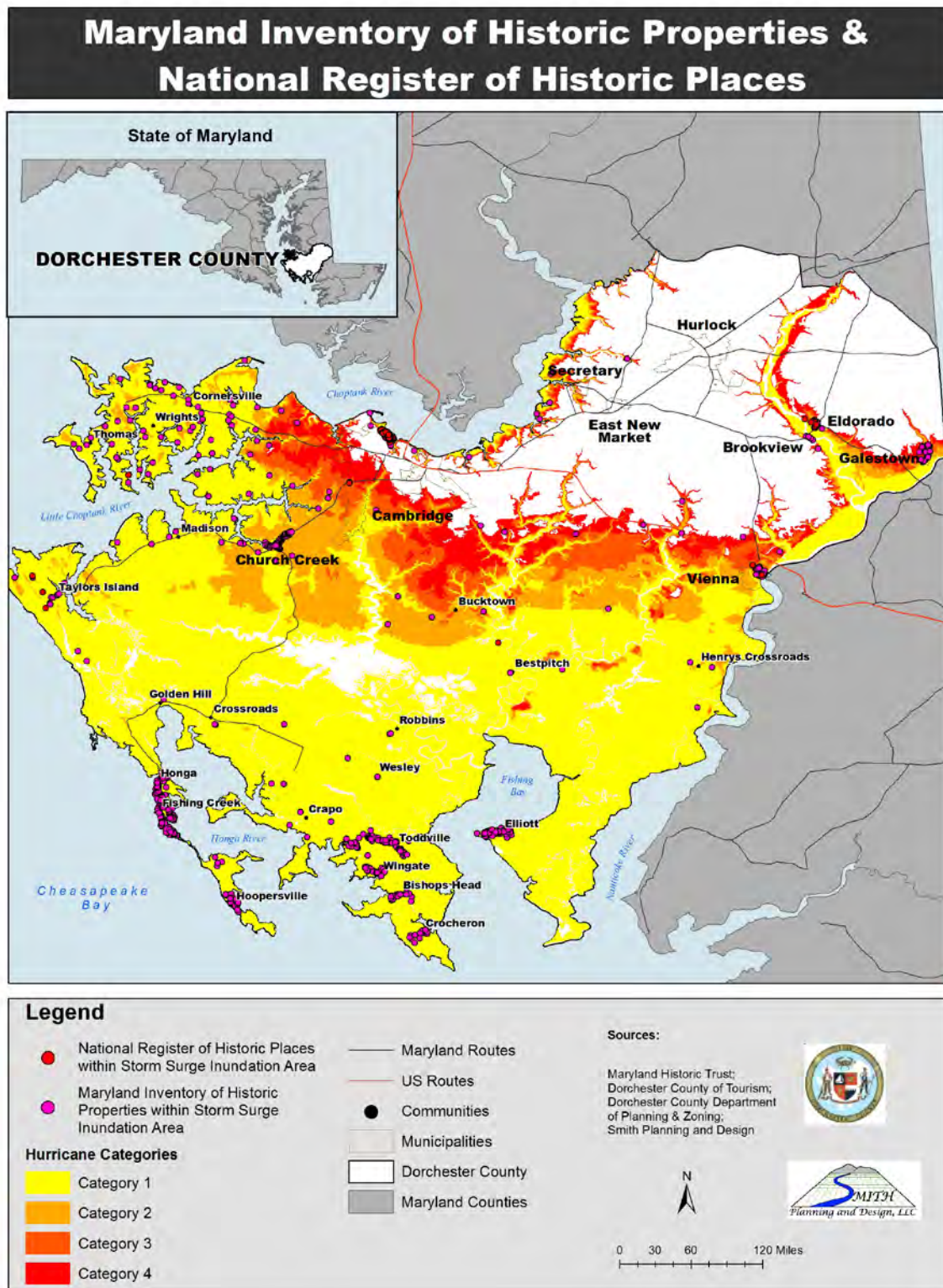
Holland Island residents were forced to abandon the eroding island in the early 1900s. Before they left, many families disassembled their houses and barged them to the mainland of the Eastern Shore, where some of these structures still stand today.

Source: Snapshots From The Edge by Rona Kobell, A Special Report From Chesapeake Quarterly, Maryland Sea Grant's magazine and Bay Journal newspaper.



In this photograph, the last house on Holland Island was still standing;
— in 2010 it collapsed into the Chesapeake Bay, a victim of sea level rise and erosion.

Photo Source: David Harp



2050 Sea Level Rise

Relative sea level rise by the year 2050 projections for Maryland indicate 2050 high estimation of 2.1 feet according to the 2013 Maryland Climate Change Commission projections. With this in mind, the 2.1 feet of mean sea level rise was used as the basis of this risk assessment.

There is no justification based on current scientific understanding for anticipating anything less than a 0.5 meter or 1.6 feet rise in global mean sea level by the end of the century.

Source: Updating Maryland's Sea-level Rise Projections Scientific and Technical Workgroup- Maryland Climate Change Commission June 26, 2013

All over low-lying Dorchester County, residents are living on the edge. One skid off the road puts a car in a marsh. Parking in the wrong place during the wrong arc in a tide cycle can lead to a flooded car. Water that used to just graze residents' yards now comes up to the porches; it's just a matter of time, they know, before it comes into the houses.

Here, in the land of narrow marshes and proud working waterfront towns, the high water isn't just coming. It's already here.

Source: Snapshots From The Edge by Rona Kobell, A Special Report From Chesapeake Quarterly, Maryland Sea Grant's magazine and Bay Journal newspaper.

Sea level rise could reshape coastlines across the Bay, including along the narrow spit of land that makes up Hooper's Island in Maryland. The island loses about 24 acres each year to erosion.

Source: Snapshots From The Edge by Rona Kobell, A Special Report From Chesapeake Quarterly, Maryland Sea Grant's magazine and Bay Journal newspaper.



Photo Source: Dave Harp

Three hundred buildings documented in the Maryland Inventory of Historic Properties, including historic and survey districts, are within the 2050 Mean Sea Level Rise inundation area. No buildings listed in or eligible for listing in the National Register of Historic Places are within the 2050 Sea Level Rise inundation area. Six Areas of Concern that will be affected by projected 2050 Mean Sea Level Rise and are susceptible to the present-day 100-year flood and hurricane storm surge inundation include:

- Todd Town-Toddville Survey District;
- Wingate Survey District;
- Bishops Head Survey District;
- Crocheron Survey District;
- Hoppersville Survey District; and,
- Fishing Creek Survey District.



Areas of Concern Designation

Following the review and analysis of known historic resources, specific areas were determined to be at-risk to all flood hazards including: coastal flooding, hurricane storm surge inundation, and 2050 mean sea level rise. Risk assessment methodology, analysis, and results were reviewed at the Stakeholder meeting held on August 1, 2017. It was determined, based upon risk assessment results and review, that six (6) areas are at-risk, not to just one (1) flood hazard, but all three (3) flood hazards analyzed during the assessment. These areas of concern have been further analyzed in detail within *Chapter 4 Areas of Concern*. In addition, a gap analysis has been completed for at-risk historic and cultural resources not within known historic and/or survey districts. These results have been included in *Chapter 5 Gap Analysis*.

Chapter 4 Areas of Concern

Please note the Privacy Act protects the information within Chapter 4 of this plan. Therefore, Chapter 4 is for Official Use Only and not for public dissemination. If there is interest in Chapter 4 Areas of Concern, please contact:

Amanda Fenstermaker, Director
Dorchester County Tourism
Heart of Chesapeake Country Heritage Area
2 Rose Hill Place
Cambridge MD 21613
410.228.1000 (office)
443.477.0292 (cell)
visitdorchester.org

Chapter 5 Gap Analysis

Please note the Privacy Act protects the information within Chapter 5 of this plan. Therefore, Chapter 5 is for Official Use Only and not for public dissemination. If there is interest in Chapter 5 Gap Analysis, please contact:

Amanda Fenstermaker, Director
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Chapter 6 Other Historic Resources

Cemeteries

Flood hazards are a significant threat to cemeteries. For instance, hurricanes result in both wind and water damages. Debris may be blown into cemeteries, including vegetation, and building materials. Even boats have been known to wash into cemeteries by hurricanes. In addition, sand may scour headstones, while trees that topple over may crush monuments. Excessive rain associated with severe storm events saturates the ground and may cause vaulted burials to float to the surface.



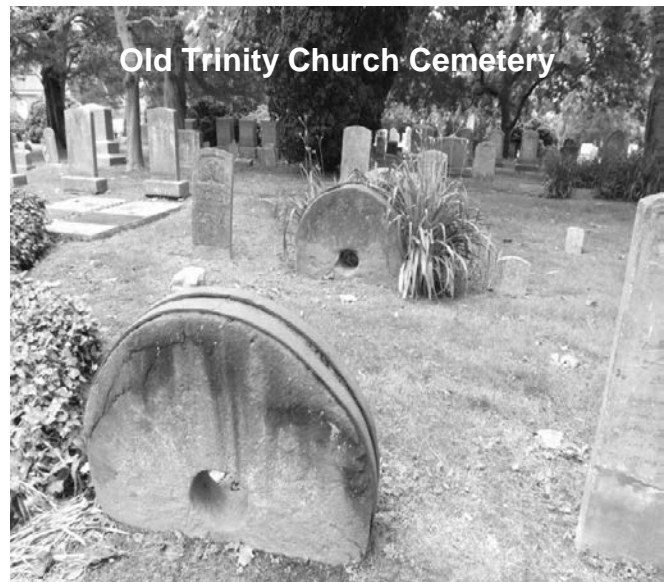
Displaced Caskets & Vaults
Source: FEMA News Photograph

Example of Wind Damage to Cemetery
Source: FEMA News Photograph



Dorchester County contains numerous cemeteries and churchyards. According to *Tombstone Records of Dorchester County 1678-1964*, compiled by Nellie Marshall, many rural graveyards have been destroyed by man, cultivation, or other methods. Many have been lost due to erosion and are now underwater. An excellent example of an existing cemetery is the Old Trinity Church Graveyard, pictured right. The burial site with marker of a man, who served and was killed in action during the Revolutionary War, may be found within the Old Trinity Church Graveyard.

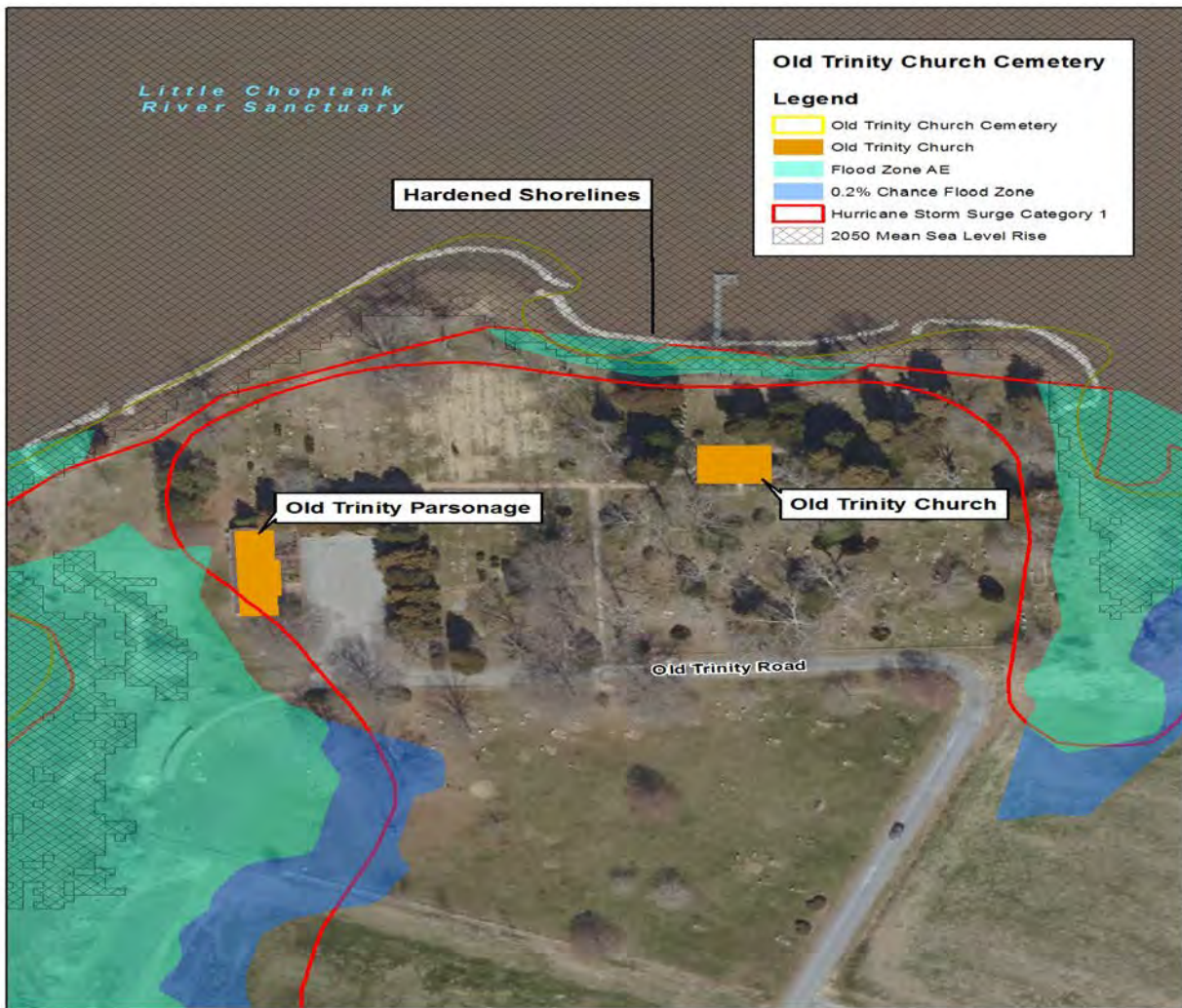
The Old Trinity Cemetery is vulnerable to flood hazards. While the shoreline has been hardened immediately along the north shore of the property, as shown on the map below, areas on either side, where the hardened shoreline ends, are problematic. The cemetery is vulnerable to coastal flooding, hurricane storm inundation, and sea level rise. While the church parsonage may be impacted by a hurricane category 1 storm surge, the church building is located outside of the mapped flood hazard areas. However, it is important to note, 2050 mean sea level rise coupled with severe coastal flooding and/or hurricane storm surge, may result in damages to the church.



Source: <https://dorchestergraves.com/churchyards/old-trinity-church-creek/>



Photo Source: Maryland Historical Trust;
<http://mht.maryland.gov/historicalmarkers>



Many of churches listed on the table below have previously been surveyed and documented in the Maryland Inventory of Historic Properties (MIHP). It should be noted that only some of the cemeteries documented in the MIHP are recorded on the same MIHP form as their associated church.

Cemeteries	MIHP No.	Churchyards	MIHP No.
Andrews Cemetery-Hurlock	D-770	Antioch Church-Cambridge	D-241
Beech Ground Burial Site		Bethel Union AME Church-Cambridge	D-591
Bestpitch Cemetery		Betheny UM Church-Crocheron	D-838
Bethel Cemetery		Bethlehem Brick Church	
Bishops Head Cemetery		Bethlehem Methodist Episcopal Church-Taylor's Island	D-24
Cambridge Cemetery	D-199	Blackwater Church	
Camp Henson Cemetery		Brookview UM Church	D-751
Cassons Neck Cemetery		Bucktown Methodist Church	
Dorchester Memorial Park		Chapel of Ease-Taylor's Island	D-796
Drawbridge Cemetery	D-323	Christ Episcopal Church & Cemetery-Cambridge	D-140

East New Market Cemetery		Christ Rock Church	
Eastern Shore Veterans Cemetery		Cokebury ME Church	D-763
Elliott's Island Cemetery		Crapo Ebenezer Church	D-824
Flowers Road Cemetery		Eldorado UM Church- (Demolished)	
Fork Neck Cemetery		Elliott's Island UM Church	
Friendship Hall Cemetery	D-2	Galestown Methodist Church	D-753
Galestown Cemetery		Gethsemane Methodist Protestant Church-Madison	D-258
Greenlawn Cemetery		Gun Swamp Church- (Demolished)	
Harrisville Malone Cemetery	D-816	Hargis ME Church- (Demolished)	D-220
Hooper's Back Cemetery		Hooper's Island Methodist Church	D-317
Hooper's Island Cemetery		Hosier Methodist Church	
Hooper's Neck Cemetery		Little Zion Methodist Church-Henry's Crossroad	D-789
Hoopersville Cemetery		Mount Zion Methodist Church Yard	D-602
Hoopersville Waterfront Cemetery		Oak Grove Methodist Episcopal Church-Taylor's Island	D-221
Hurlock Cemetery		Old Field Church-Church Creek	
McKendree (Corkan) Cemetery		Old Trinity Church-Church Creek	D-282
Petersburg Cemetery		Reid's Grove UM Church-Rhodesdale	
Spedden-Seward Cemetery	D-255	Scott's Chapel –Bucktown UM Church	D-270
Vienna Cemetery		St. John's Church-Hudson	
Woolford-Mace Cemetery		St. John's Methodist Church- Church Creek	
Zion Methodist Cemetery-Wingate	D-402	St. Mary's Star of the Sea-Church Creek	
		St. Thomas Church Road Cemetery, Toddville	D-320
		Thomas Chapel-Rhodesdale	
		Wesley Church-Vienna	D-590
		Zoar ME Church-Hudson (Demolished)	D-332

Source: <https://dorchestergraves.com>

Additional Cemeteries not listed on the website, Dorchester Graves, include:

- Airey Cemetery-East New Market
- Duke Cemetery-Rhodesdale
- Ebenezer Cemetery-Wingate (MHIP # D-824)
- Grace Episcopal Church-Taylor's Island
- Hooper's Island Memorial Church Hall-Hoopersville- small burial plot next to church (MIHP # D-317)
- Joppa Methodist Cemetery-Church Creek
- Mount Pleasant Cemetery-East New Market
- Salem Cemetery-East New Market
- Richardson Graveyard and House- Church Creek (MIHP # D-184)
- Washington Chapel & Cemetery-Waddell's Corner Road-Hurlock (MIHP # D-135)
(Note: contains WWI Monument)
- Washington Methodist Church-110 North Main Street (MIHP # D-610)
- Waugh Cemetery-Cambridge 429 High Street (MIHP # D-605)

The Hooper's Island Memorial Church Hall (D-317), was built in 1886, as a single story, gable front frame chapel or meetinghouse type structure. The rectangular church is the smallest form of Methodist meetinghouse erected for rural congregations across the Eastern Shore. The former church is accompanied by a small burial ground with nineteenth and twentieth-century burials, and decorative cast iron fence frames a few markers.



Hooper's Island Memorial Church Hall
Hoopersville, MD
Photo Source: September, 2013 Paul B. Touart

Memorials

The Maryland Historical Trust Inventory of Military Monuments lists eight (8) monuments and their locations as follows:

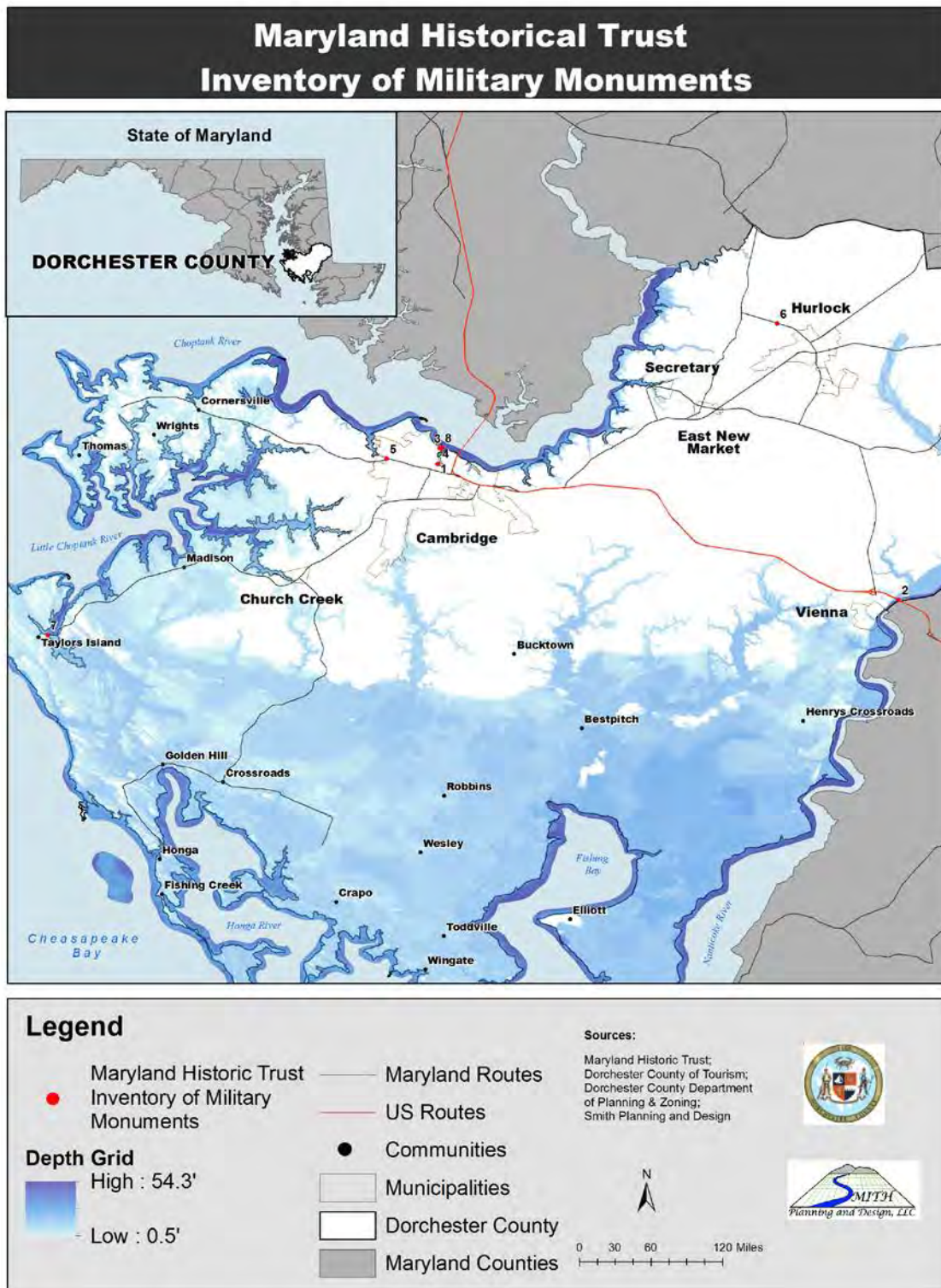
Military Monuments			
Monument	Commemorates	Location	MIHP No.
Hicks Monument	Civil War	Cambridge Cemetery	D-199
Nanticoke River Memorial Bridge	Combat Veterans	US 50 over Nanticoke River Vienna, MD	
World War I Memorial Fountain	WWI	Long Wharf Cambridge, MD	D-621
World War II Monument	WWII	Long Wharf Cambridge, MD	
Leonard Monument	WWI 1918	Greenlawn Cemetery Cambridge, MD	
World War I Doughboy Monument	WWI 1930	Washington Cemetery Hurlock, MD	D-703
Becky Phipps Cannon	War of 1812	North Side of Rt. 16 Taylor Island, MD	D-213
Distinguished Service Cross Monument	WWI	Long Wharf Cambridge, MD	

Source: www.mht.maryland.gov/monuments

A flood hazard risk and vulnerability assessment of military monuments was completed. The assessment indicated that five military monuments within Dorchester County are located within the FEMA 100-year floodplain. Those same five monuments are also at-risk to hurricane storm surge from a Category 1 hurricane. Finally, two monuments are at-risk to 2050 mean sea level rise. The table below and adjacent map provide further details.

Military Monuments & Flood Risk					
Id	Monument	Flood Zone	Flood Depth	Hurricane CAT	SLR
1	Hick Monument	X	0	--	No
3	World War I Memorial Fountain	AE	0.7	CAT 1	No
6	World War I Doughboy Monument	X	0	--	No
4	World War II Monument	AE	1.4	CAT 1	No
5	Leonard Monument	X	0	--	No
7	Becky Phipps Cannon	AE	1.1	CAT 1	Yes
8	Distinguished Service Cross Monument	AE	0.9	CAT 1	No
2	Nanticoke River Memorial Bridge	AE	10.8	CAT 1	Yes

Source: www.mht.maryland.gov/monuments, FEMA Flood Risk Products & Smith Planning and Design



Chapter 7 Mitigation Strategies

Minimizing the Impacts of Flooding on Historic Structures

According to FEMA P-467-2 Floodplain Management Bulletin-Historic Structures, the primary damage to historic buildings in a flood disaster is from immersion of building materials in floodwaters and the moving force of floodwaters that can cause structural collapse. Storm and sanitary sewer backup during flooding is also a major cause of flood damage to buildings. In addition, floods may cause ruptured utility lines leading to a secondary hazard, fire. Floods impacts may also include the growth of mold and mildew leading to swelling, warping, and disintegration of materials due to prolonged presence of moisture.

Hazard mitigation measures range in complexity and cost. Low-cost improvements include elevating utility and mechanical equipment. Higher-cost improvements include elevation, dry floodproofing, or relocation of the structure outside of the Special Flood Hazard Area, all of which can have a negative impact on the integrity of historic buildings.

Benefits from mitigation measures are significant relative to their cost, such as:

- Reduction of flood damages. The buildings may not sustain flood damages or at least those damages will be significantly less than if no mitigation measures were implemented.
- Reduction in flood insurance premiums. Buildings that are elevated to or above the Base Flood Elevation (BFE) or relocated out of the floodplain should qualify for lower flood insurance premiums.
- Long-term preservation of the building. Historic structures that are repeatedly flooded will deteriorate and eventually may have to be demolished unless they are protected from flooding. Mitigation measures can help preserve the building for future generations.

A challenge associated with mitigating flood risk to a historic structure is the need to ensure that the structure does not lose its historic designation. For example, when completing an elevation project on a historic structure care should be taken so that new designs and new materials do not obscure or alter existing significant historic features, that the new foundation is compatible in appearance and materials with the building, and that landscaping is designed to minimize the visual impact of the new foundation and first floor height. Whereas, retrofitting a historic structure to reduce flood damages

can be done so that it has minimal to moderate impact on the structure's historic integrity and so that it maintains its historic designation.

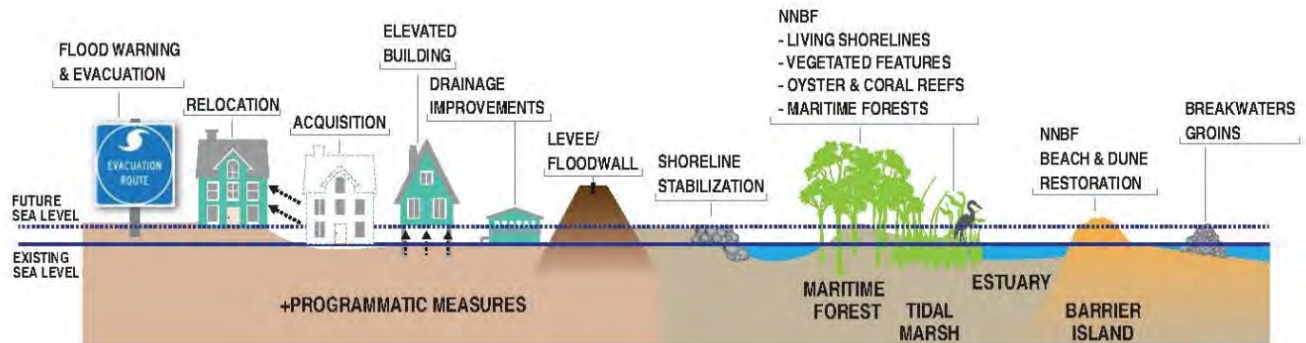
Mitigation measures that may be undertaken to minimize the effects of flooding, although they may not eliminate flooding altogether are as follows:

- Relocate contents to a safer location. For example, heirlooms and other cultural resources should be located above the BFE. At a minimum, valuable contents should be removed from basements and other flood-prone areas.
- Create positive drainage around the building. In places where ground slope against the building facade is either flat or cants toward the building, increase the grade immediately adjacent to the façade to achieve positive drainage away from the building. In some situations, existing masonry and concrete window wells around basement windows may need to be built up to retain the extra height of the fill.
- Protect mechanical and utility equipment. Elevating mechanical and utility equipment (including electrical, heating, ventilation, plumbing and air conditioning equipment) above the BFE can protect them from flood damage.
- Remove modern finished materials from basements or other areas that are floodprone. Often historic structures are constructed from materials that are relatively flood-resistant. For example, basements often had stone or rubble walls and dirt floors. These buildings often were repeatedly flooded with minimal flood damages except to building contents. In more recent years many of these areas have been finished off using modern materials that are less resistant to flood damage and building utilities added. It may be possible to wet floodproof the building merely by removing these modern materials and restoring these areas to their original configuration.
- Use flood resistant materials below the BFE. When rehabilitating or repairing a damaged historic structure, use flood resistant materials below the BFE to improve the structure's ability to withstand flooding. Guidance for using flood resistant materials can be found in Technical Bulletin, Flood-Resistant Materials Requirements for Buildings Located in Special Flood Hazard Area in accordance with the National Flood Insurance Programs.
- Fill in the basement. For historic structures with basements, a simple solution to minimize flood damage and reduce the potential for structural damage is to abandon the basement, raise any mechanical and utility equipment, and fill in the basement with sand or gravel.
- Wet floodproofing the basement. This measure allows the internal flooding of a basement. Flooding of a structure's interior is intended to counteract hydrostatic pressure on the walls, surfaces, and supports of the structure by equalizing

interior and exterior water levels during a flood. Inundation also reduces the danger of buoyancy from hydrostatic uplift forces. Such measures may require alteration of a basement's design and construction, use of flood-resistant materials, adjustment of the basement's maintenance, relocation of equipment and contents, and emergency preparedness. Guidance for wet floodproofing a basement can be found in Technical Bulletin 7-93 Wet Floodproofing Requirements for Structures Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program.

- Where prudent, retrofit crawlspace constructed on a continuous foundation with flood openings to permit passage of floodwaters and alleviate hydrostatic pressure on the building, and use flood damage-resistant materials in crawlspace.
- Install "mini"-floodwalls to protect openings, such as a window well. For low level flooding, a type of "mini"-floodwall can be used to permanently protect various types of openings. Possible materials for this use include brick, concrete block and poured concrete. They should be supported by and securely tied into a footing so that they will not be undercut by scouring and the soil under these walls should be fairly impervious to control seepage. Some form of sealant may be needed on the outside to control seepage.
- Temporary measures. Where it is not possible to use the above measures to protect a building from flooding, it may be possible to use temporary measures to reduce flood damages. Examples include sandbagging openings, installing temporary barriers or flood shields in openings, and evacuating building contents to floors above the flood level. In order for this approach to work, one must develop an emergency plan and stockpile the required materials ahead of time. The amount of flood warning time available for the site is critical and it must be ensured that adequate personnel are available to install the measures. Do not try to keep water out of buildings unless an engineering analysis is conducted to ensure that the walls are strong enough to withstand flood forces (hydrostatic, hydrodynamic, debris, and buoyancy)

If there is a likelihood of significant or more frequent flood damage to the historic structure, a more extensive mitigation measure may be undertaken. These mitigation measures could include elevating, floodproofing, or relocating the structure to a site that is outside of the Special Flood Hazard Area. These mitigation measures are described below.



A combination of strategies has been developed to help manage the risks of coastal flooding. Some, like elevating buildings, are structural. Others, like “living shorelines,” are nonstructural and rely on natural resources (marked in the drawing above as NNBF, for natural and nature-based features). A number of experts have urged federal and state governments to devise a national, coordinated plan to manage flooding risks using a variety of methods.
Source: U.S. Army Corps of Engineers

Elevation

There are two types of elevation to consider: (1) The entire building is lifted and placed on a new elevated foundation (columns, piers, posts, or raised foundation walls such as a crawl space). (2) In situations where it is possible to leave the exterior of the building the same, raise the interior floor of the building above the BFE. This may be an alternative for older stone buildings with high ceilings and elevated window sills. Both types will have a negative impact on the integrity of a historic structure. Consultation with the Maryland Historical Trust is recommended early during the design phase of an elevation project to discuss how to reduce the impact of the project on the integrity of the building.

Floodproofing

There are two types of floodproofing commonly called “dry floodproofing” and “wet-floodproofing.” Dry floodproofing means making a building watertight, substantially impermeable to floodwaters. This form of floodproofing requires that the building be properly anchored to resist flotation, collapse, and lateral movement. It also may require the reinforcement of walls to withstand flood forces and impact forces generated by floating debris; the use of membranes and other sealants to reduce seepage of floodwater through walls and wall penetrations; the installation of pumps to control interior water levels; the installation of check valves to prevent entrance of floodwater or sewage flows through utilities; and the location of electrical, mechanical, utility, and other valuable vulnerable equipment and contents above the expected flood level. *A registered professional engineer or architect must implement Dry-floodproofing with an appropriate design. This is especially important for historic structures, many of which were constructed before the creation of building codes and before the production of standardized/regulated building materials.*

Wet-floodproofing allows for the flooding of a structure's interior to equalize hydrostatic pressure on exterior walls, surfaces, and supports of the structure during a flood. Application of wet floodproofing as a flood protection technique should be limited to specific situations in AE Zones. Flooding of a structure's interior is intended to counteract hydrostatic flood forces on the exterior walls, surfaces, and supports of the structure during a flood. Inundation also reduces the danger of buoyancy from uplift forces. Use of wet floodproofing for historic structures requires careful consideration of protection techniques and educating property owners on proper drying and cleaning techniques for flooded historic structures after the floodwaters recede.

Relocation

Relocation is the mitigation measure that can offer the greatest security from future flooding. Relocation involves moving the entire structure out of the floodplain or it may involve dismantling a structure and rebuilding it elsewhere. It may be possible to relocate a building to a higher part of the same parcel or lot, but often it will be necessary to move the building to another site. In either case, it is the most reliable of all mitigation measures. In addition to relieving the property owner from future anxiety about flooding, this method can offer the opportunity to significantly reduce or even eliminate the need for flood insurance. Relocation may be the best option in cases where the building site is subject to repeated flooding or severe flooding, where flood depths and velocities can have significant impact on the building.

This is one of the most drastic impacts to a historic structure because it removes that building from its historic context. Care should be taken to relocate the building to a similar setting, orientation, and environment. Consultation with the Maryland Historical Trust is necessary early in the process of planning a relocation project due to the complexity of managing the impact to a property's integrity and the potential for the property's de-listing if the project does not have the prior approval of the Keeper of the National Register.

Flood Damage-Resistant Materials

"Flood damage-resistant material" is defined by the National Flood Insurance Program (NFIP) as "any building product [material, component or system] capable of withstanding direct and prolonged contact with floodwaters without sustaining significant damage." The term "prolonged contact," means at least 72 hours, and the term "significant damage" means any damage requiring more than cosmetic repair. "Cosmetic repair" includes cleaning, sanitizing, and resurfacing (e.g., sanding, repair of joints, repainting) of the material. The cost of cosmetic repair should also be less than the cost of replacement of affected materials and systems. In addition to these requirements, individual materials that are considered flood damage-resistant must not

cause degradation of adjacent materials or the systems of which the material is a part. Replacement of historic materials with modern materials should be approached with caution as it results in a loss of integrity and if properly dried and cleaned, many historic materials can be retained in situ with few detrimental effects.

FEMA Hazard Mitigation Assistance Programs

FEMA's Hazard Mitigation Assistance (HMA) Program administers several programs that provide grant funding for hazard mitigation projects that reduce or eliminate long-term risk to people and property from natural hazards and their effects. These programs are authorized under the Robert T. Stafford Disaster Relief and Emergency Assistance Act or the National Flood Insurance Act, and as such all programs are subject to changes in statutory requirements and amounts of authorized assistance. All mitigation projects must be cost effective and technically feasible, and meet Environmental Planning and Historic Preservation requirements in accordance with HMA Program requirements. These programs comply with local, State, or national building codes, standards, and regulations. States, Territories, federally recognized Indian Tribal governments, and communities are eligible and encouraged to take advantage of funding provided by the following HMA Programs in both the pre- and post-disaster timeframes:

- **Hazard Mitigation Grant Program:** The Hazard Mitigation Grant Program (HMGP) provides grants to implement long-term hazard mitigation measures *after* a major disaster declaration in a given State. The purpose of HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during recovery from a disaster.
- **Pre-Disaster Mitigation Program:** The Pre-Disaster Mitigation (PDM) Program provides nationally competitive grants for hazard mitigation planning and implementing mitigation projects *before* a disaster event. Funding these plans and projects reduces overall risks to the population and structures, as well as reliance on funding from actual disaster declarations to rebuild after disasters.
- **Flood Mitigation Assistance Program:** The Flood Mitigation Assistance (FMA) Program provides grants for certain flood mitigation projects to reduce or eliminate flood risk to buildings, manufactured homes, and other structures that are currently NFIP insured.

Examples of mitigation projects that can be funded through the Hazard Mitigation Grant Program:

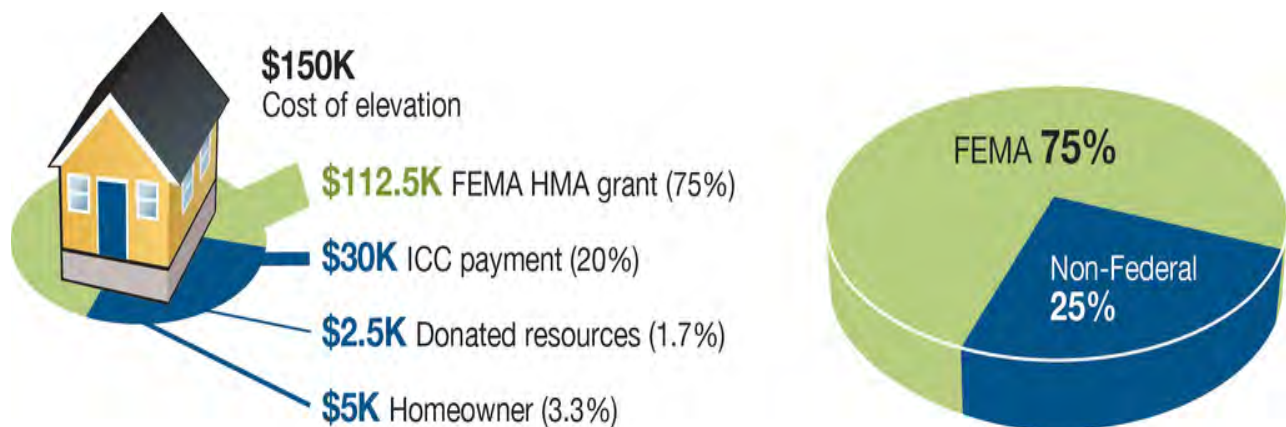
- **Acquisition and Structure Demolition/Relocation** – The community purchases and permanently removes, with FEMA funding, a flood-prone property from the individual.

- **Dry Floodproofing of Historic Residential Structures** – The home is protected with barriers to prevent floodwater from entering.
- **Elevation** – The home is raised so that potential floodwaters may flow underneath the home.
- **Hazard Mitigation Plan** – HMGP funding can also be used for mitigation planning activities. FEMA requires state, tribal, and local governments to develop and adopt hazard mitigation plans as a condition for receiving certain types of non-emergency disaster assistance, including funding for HMA mitigation projects.
- **Mitigating Flood and Drought Conditions** – Aquifer storage and recovery, floodplain and stream restoration, flood diversion and storage, or green infrastructure methods may support communities in reducing the risks associated with the impacts of flood and drought conditions.
- **Mitigation Reconstruction** – The existing home is demolished and a new (similar in size) elevated home is constructed.
- **Structural Retrofitting of Existing Buildings** – Enhancements are made to a home to make it more resistant to floods and earthquakes.
- **Wind Retrofit** – Enhancements are made to strengthen the roof, walls, doors, and windows and minimize damage caused by high winds.

Source: [fema.gov/hazard-mitigation-grant-program](https://www.fema.gov/hazard-mitigation-grant-program)

FEMA provides up to 75 percent of the funds for mitigation projects. The remaining 25 percent can come from a variety of sources. A cash payment from the state, local government or in some cases directly from the individual is the most direct option.

HMGP Cost-Share Example



Source: [fema.gov/hazard-mitigation-grant-program](https://www.fema.gov/hazard-mitigation-grant-program)

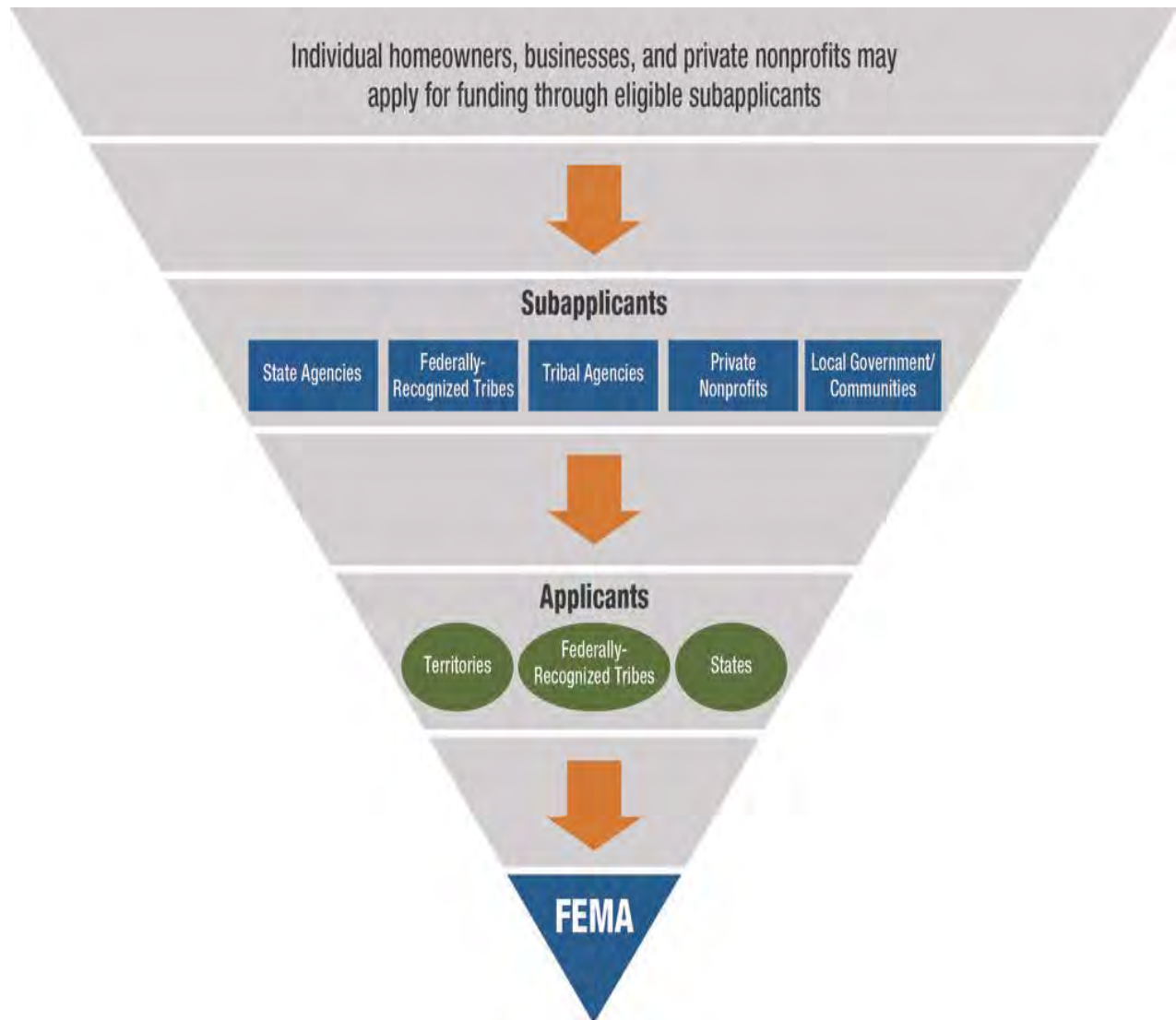
HMA Programs enable hazard mitigation measures to be implemented before, during, and after disasters. Funding depends on the availability of appropriation funding or is based on disaster recovery expenditures, as well as any directive or restriction made with respect to such funds. HMGP funding depends on Federal assistance provided for disaster recovery following a Presidential disaster declaration in a State; Congress may authorize PDM funding annually; and FMA, is funded through the National Flood Insurance Fund (NFIF). Once the application period is open, the State notifies the local governments of the availability of funds and relays information on the application process, project requirements, and eligibility criteria for the local government. The table below indicates the cost-share requirements for each aforementioned program. Homeowners should work with their local government to express their interest in participating in a residential flood mitigation project; the local government can then submit a sub-application to the State and request HMA funding. In general, the community applying for the grant must be participating in the NFIP.

Program	Mitigation Activity Grant (Percent of Federal/Non-Federal Share) *
HMGP	75/25
PDM	75/25
PDM – subgrantee is small impoverished community	90/10
FMA	75/25
FMA – severe repetitive loss property with Repetitive Loss Strategy	90/10

Source: [fema.gov/hazard-mitigation-grant-program](https://www.fema.gov/hazard-mitigation-grant-program)

In general, individuals, businesses and private nonprofits via local governments, can apply for HMGP funding. Individuals may not apply directly for HMGP funding, but may be sponsored through an appropriate sub-applicant via a local government, state agency, tribe or tribal agency, or private nonprofit. Applications are submitted to the state, eligible tribe, or territory, which receives HMGP funds from FEMA.

HMGP Application Flow



Source: fema.gov/hazard-mitigation-grant-program

Additional information on FEMA's Hazard Mitigation Assistance Programs may be obtained.

Links to FEMA Funding Resources	
Increased Cost of Compliance (includes a link to FEMA 301, <i>NFIP Increased Cost Compliance [ICC] Coverage: Guidance for State and Local Officials</i>) (FEMA, 2003)	http://www.fema.gov/plan/prevent/floodplain/ICC.shtm http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=1532
HMA Overview (includes link to most recent <i>HMA Unified Guidance</i>)	http://www.fema.gov/government/grant/hma/index.shtm
HMA Policies	http://www.fema.gov/government/grant/hma/policy.shtm
HMGP	http://www.fema.gov/government/grant/hmgp/index.shtm
PDM	http://www.fema.gov/government/grant/pdm/index.shtm
FMA	http://www.fema.gov/government/grant/fma/index.shtm
Mitigation Planning	http://www.fema.gov/plan/mitplanning
Benefit-Cost Analysis	http://www.fema.gov/government/grant/bca.shtm
Environmental Planning and Historic Preservation (EHP)	http://www.fema.gov/plan/ehp/index.shtm
HMA Helpline	Telephone: 866-222-3580

Goals & Objectives

Goal 1: Preserve the county's unique heritage and sense-of-place, and protect the county's historic, architectural, cultural, and scenic character from flood hazards through sensitive mitigation measures.

- Objective 1.1: Retrofit important community landmarks/historically significant buildings or structures to reduce risk, in a way that minimizes changes to their character and integrity and does not preclude their historical designation.
- Objective 1.2: Promote and encourage property maintenance and rehabilitation to enhance the ability of historic properties to withstand the impacts of hazards and reduce risk.
- Objective 1.3: Identify effective alternatives to acquisition and demolition to reduce risk for repetitive loss (RL) and severe repetitive loss (SRL) properties that may be historically significant or contribute to community character.
- Objective 1.4: Provide hazard mitigation education and training to historical organizations and local preservation professionals.
- Objective 1.5: Nominate historically significant properties to be listed in the National and/or Local Register of Historic Places to make such properties eligible for a variety of federal and state grants that may facilitate rehabilitation and mitigation measures to reduce risk.

Goal 2: Minimize alteration, destruction, and loss of historic fabric or design

- Objective 2.1: Maintain and preserve the original space configurations of historic buildings
- Objective 2.2: Encourage preservation of original qualities or character of historic buildings and sites

Eligible Projects: FEMA HMA (Non-Disaster) Funding

- Planning Project – Architectural/Historical Survey (or update to existing MIHP form) for properties and historic villages in floodprone areas with a risk assessment to quantify the risk of those structures and recommendations for how to mitigate that risk.
- Structural Retrofitting of Existing Buildings- Enhancements are made to a home to make it more resistant to floods.
- Structure Elevation- The home is raised so that potential floodwaters may flow underneath the home.
- Dry Floodproofing of Historic Residential Structures- The home is protected with barriers to prevent floodwater from entering.
- Mitigating Flood and Drought Conditions – Aquifer storage and recovery, floodplain and stream restoration, flood diversion and storage, or green infrastructure methods may support communities in reducing the risks associated with the impacts of flood and drought conditions.

- Property Acquisition and Structure Demolition/Relocation- The community purchases and permanently removes, with FEMA funding, a flood-prone property from the individual.
- Technical Assistance Cost-Share Requirement: FEMA HMA (Non-Disaster) Funding

FEMA provides up to 75 percent of the funds for mitigation projects. The remaining 25 percent can come from a variety of sources. A cash payment from the state, local government or in some cases directly from the individual is the most direct option. Other sources may include donated resources, such as construction labor; Increased Cost of Compliance (ICC) funds from a flood insurance policy; or loans from other government agencies, such as the Small Business Administration.

Goal 3: Use effective adaptive strategies, as appropriate to mitigate future flood damages. Adaptive strategies fall into two categories, non-structural and structural.

Structural adaptation measures, while costly, prove to be effective at mitigating future flood damages. Measures such as elevating structures, building a ringwall around a group of buildings, increasing the elevation of entrances and windows, and floodproofing.

Another option that is less expensive than structural measures is the installation of temporary flood barriers. Flood barriers are deployed either manually or are automated. An example of this mitigation measure in practice is the U.S. Naval Academy within the City of Annapolis. Following Tropical Storm Isabel, temporary door dams, also called stoplogs, were deigned to protect vulnerable floor entrances into several buildings.

Recommendations

General recommendations specific to the risk assessment are as follows:

- Complete Maryland Historical Trust's (MHT) Architectural Survey Form for Hazard Mitigation Planning for properties in flood hazard areas that are documented in the Maryland Inventory of Historical Properties and/or listed or eligible for listing in the National Register of Historic Places (MIHP/NRHP) and listed in Recommendations Table in Chapter 7 Mitigation Strategies and use information to develop appropriate flood mitigation measures that balance protection and preservation. *Note: During the plan development process, sixteen prioritized properties were surveyed using the Architectural Survey Form for Hazard Mitigation Planning.*
- Complete/update MIHP forms for unsurveyed buildings endangered by flood hazards and for buildings with old NRHP forms/old MIHP forms in high hazard areas within areas of concern.

- Update MIHP forms for buildings that have demolished/destroyed.
- Conduct additional documentation for Toddville, Hoopersville, and Fishing Creek to allow MHT to evaluate the eligibility for these areas for inclusion in the NRHP as historic districts.
- Conduct architectural and historical survey in Taylor's Island, Madison, and Crapo for survey district study documentation.
- Conduct architectural and historical survey to document individual unsurveyed properties identified during the gap analysis that are located in high hazard areas, as prioritized by the County.
- Hold small group conversations, specifically in *Areas of Concern*, to discuss hazard vulnerability and potential hazard mitigation opportunities. Include a walking tour assessment to discuss vulnerabilities and opportunities for photographs.

Ongoing activities should include:

- Conduct windshield survey bi-annually to determine what, if any, mitigation measures have been undertaken at historic property locations.
- Continue to update Geographic Information Systems (GIS) for historic properties and the geodatabase completed for this plan.

Potential Multi-Year Recommendation from the Stakeholder Committee:

- Using hazard mitigation grants and local funding and in consultation with the Maryland Historical Trust, acquire and relocate hazard-prone historic buildings to a hazard-free area within Dorchester County, thereby recreating historic neighborhoods and towns, similar to the Zuiderzee Museum in the Netherlands. Much like the Zuiderzee Museum, the Dorchester County project would be devoted to preserving the cultural heritage and maritime history of the Eastern Shore.

Based upon analysis and results presented in Chapter 3 Risk Assessment and Chapter 4 Areas of Concern, findings from Chapter 5 Gap Analysis, recommendations were determined and are presented in the tables on pages 7-14 thru 7-17 (Areas of Concern) and pages 7-18 thru 7-21 (Gap Analysis). In addition, sixteen (16) prioritized properties that are individually documented in the Maryland Inventory of Historic Places (MIHP) were surveyed to determine the flood risk at each building. The completed *Maryland Historical Trust Architectural Survey Form for Hazard Mitigation Planning* for each has been included in Appendix C. Mitigation recommendations for these properties are within the *Maryland Historical Trust Architectural Survey Form for Hazard Mitigation Planning* forms and in the tables on pages 7-22 thru 7-26 of this Chapter.

The properties listed within the following table and *Areas of Concern* met the prioritization criteria established by the Core Planning Team and Stakeholder Committee. This prioritization criterion was utilized within Chapter 3 Risk Assessment and Chapter 4 Areas of Concern, findings from Chapter 5 Gap Analysis. (Please see Prioritization Criteria within the Methodology Appendix of this plan.)

Areas of Concern Recommendations	
Area of Concern	Recommendation
Toddville	Prioritize for architectural/historical survey: complete the Maryland Inventory of Historic Properties Form for the two (2) buildings within the Toddville Survey District that were built prior to 1900. Both buildings are highly vulnerable and at-risk to coastal flooding, hurricanes, and sea level rise.
	Prepare sufficient documentation to allow MHT to evaluate the eligibility of the Zion M. E. Church (D-322) for inclusion in the National Register of Historic Places.
	Determine what flood mitigation, if any, has been completed at the five (5) historic properties individually documented in the MIHP. Target these properties for flood mitigation measures that balances protection and preservation.
	<ul style="list-style-type: none"> • D-322 Zion M.E. Church • D- 732 Meredith & Meredith Seafood Packing • D-734 Toddville Seafood Company • D-836 Toddville House • D-829 Toddville Store
	Determine what flood mitigation, if any, has been completed at the Repetitive Loss Property on Toddville Road, within the Survey District. Target for flood mitigation that balances protection and preservation and architectural/historical documentation.
	Correct the address on the MIHP forms for those resources that have individual forms or are mentioned specifically in the MIHP form for the Toddville Survey District.
	Prepare documentation sufficient to allow MHT to evaluate the Toddville Survey District's eligibility for the National Register of Historic Places as a Historic District.
Wingate	Produce an oral history of the Toddville area for publication and posterity.
	Prioritize for architectural/historical survey-complete the Maryland Inventory of Historic Properties Form, the one (1) building within the Wingate Survey District that was built prior to 1800. This building is highly vulnerable and at-risk to coastal flooding, hurricanes, and sea level rise.
	Determine what flood mitigation, if any, has been completed at the two (2) historic properties individually documented in the MIHP. Target these properties for flood mitigation measures that balance protection and preservation.
	<ul style="list-style-type: none"> • D-834 Wingate Manor • D-846 Formally the South Dorchester Bank
	Conduct architectural/historical survey for the following sites and submit MIHP forms to the Maryland Historical Trust: Wingate Manor Cemetery and Wingate Methodist Church.
	Produce an oral history of the Wingate area for publication and posterity.

Area of Concern	Recommendation
Bishops Head	Prioritize for architectural/historical survey-complete the Maryland Inventory of Historic Properties Form, the six (6) buildings within the Bishops Head Survey District that were built in 1900. These buildings are highly vulnerable and at-risk to coastal flooding, hurricanes, and sea level rise.
	Determine what flood mitigation, if any, has been completed at the three (3) historic properties individually documented in the MIHP. Target these properties for flood mitigation measures that balances protection and preservation and architectural/historical documentation to update their MIHP form. <ul style="list-style-type: none"> • D-30 Georges Hart Farmhouse • D-320 St. Thomas M.E. Church • D-827 Tom Jones' Market
	Determine what flood mitigation, if any, has been completed at the Repetitive Loss Property on Wingate Bishops Head Road, within the Survey District. Target for flood mitigation measures that balances protection and preservation and document building individually on a MIHP form.
	Produce an oral history of the Wingate area for publication and posterity.
Crocheron	Prioritize for architectural/historical survey-complete the Maryland Inventory of Historic Properties Form, the one (1) building within the Crocheron Survey District that was built in 1900. This building is highly vulnerable and at-risk to coastal flooding, hurricanes, and sea level rise.
	Determine what flood mitigation, if any, has been completed at the four (4) historic properties individually documented in the MIHP. Target these properties for flood mitigation measures that balances protection and preservation. <ul style="list-style-type: none"> • D-735 Bradye P. Todd & Son Seafood Packing Company • D-831 Crocheron Store • D-837 Eugene Crocheron House • D-838 Bethany United Methodist Church
	Produce an oral history of the Crocheron area for publication and posterity.

Area of Concern	Recommendation
Hoopersville	<p>Prioritize for architectural/historical survey: complete the Maryland Inventory of Historic Properties (MIHP) Form, the one (1) building within the Hoopersville Survey District that was built in 1900. This building is highly vulnerable and at-risk to coastal flooding, hurricanes, and sea level rise.</p>
	<p>Determine what flood mitigation, if any, has been completed at the four (4) historic properties individually documented in the MIHP. Target these properties for flood mitigation measures that balances protection and preservation.</p> <ul style="list-style-type: none"> • D-16 Swan Island • D-316 Josiah Parks House • D-317 Hoopers Island Memorial Church Hall • D-318 Hoopers Island Memorial Church
	<p>Prepare sufficient documentation to allow MHT to evaluate the eligibility of the Hoopersville Survey District (D-841) for inclusion in the National Register of Historic Places. Prioritize at-risk historic structures within this district for flood mitigation measures that balances protection and preservation.</p> <p>a. There are fifteen (15) structures outside of the survey district that are individually documented in the MIHP. These buildings were built between the years 1900-1966. All buildings with the exception of three (3) are at-risk to various flood hazards as follows:</p> <ul style="list-style-type: none"> ▪ 100-year flood hazard area; ▪ Hurricane storm surge inundation: and, ▪ 2050 mean sea level rise. <p>The three (3) exceptions, which are vulnerable to hurricane storm surge inundation and 2050 mean sea level rise, but not 100-year flood event.</p>
	<p>Determine what flood mitigation, if any, has been completed at the Repetitive Loss Properties within the Survey District. Target for flood mitigation and and document building individually on a MIHP form.</p> <ul style="list-style-type: none"> • Hoopersville Road • (2) Steamboat Wharf Road

Area of Concern	Recommendation
Fishing Creek	Prioritize for architectural/historical survey-complete the Maryland Inventory of Historic Properties Form, the one (1) buildings within the Fishing Creek Survey District that was built before 1900. This building is highly vulnerable and at-risk to coastal flooding, hurricanes, and sea level rise.
	Determine what flood mitigation, if any, has been completed at the eight (8) historic properties individually documented in the MIHP. Target these properties for flood mitigation measures that balances protection and preservation. <ul style="list-style-type: none"> • D-728 W.T. Ruark & Co., Inc. • D-729 Former W.T. Ruark & Co. Crabhouse, Tar Bay • D-730 A.E. Phillips & Son • D-736 Charles H. Parks & Co. • D-737 Russell Hall Seafood Packing House • D-840 Hoiser's M.E. Church South • D-843 Hoopers Island Bank • D-844 J.E. Walter Store
	Determine what flood mitigation, if any, has been completed at the Repetitive Loss Properties within the Survey District. Target for flood mitigation and document building individually on a MIHP form. <ul style="list-style-type: none"> • Hoopers Island Road • Old House Point Road • Creighton Road
	Produce an oral history of the Fishing Creek area for publication and posterity.

Area of Concern	Gap Analysis Recommendation
Taylors Island	<p>Prioritize for survey-complete the Maryland Inventory of Historic Properties Form, the five (5) buildings within the Taylors Island that were built in 1900. These buildings are highly vulnerable and at-risk to coastal flooding, hurricanes, and sea level rise.</p>
	<p>Determine what flood mitigation, if any, has been completed for the historic and cultural resources individually documented in the MIHP and listed in the NRHP. Prioritize flood mitigation measures for the three (3) historic and cultural resources listed in the National Register for Historic Places (NRHP).</p> <ul style="list-style-type: none"> • D-22 Ridgeton • D-24 Bethlehem Methodist Episcopal Church • D-207 Grace Episcopal Church, Chapel of Ease & Mulberry Grove School
	<p>Determine what flood mitigation, if any, has been completed at the remaining sixteen (16) historic resources documented in the MIHP, but for which there has not been a determination of eligibility for inclusion in the NRHP. Target these properties for flood mitigation and architectural/historical documentation to update their MIHP form.</p> <ul style="list-style-type: none"> • D-23 Mulberry Grove (Dover) and Schoolhouse • D-152 Concord Farm • D-204 Patrick's Discovery • D-205 Oyster Creek Farm • D-206 Lane Methodist Episcopal Church • D-209 T. Reynolds Carpenter House • D-210 Taylor's Island School • D-211 Hilda Spicer Willey House • D-212 Taylor's Island Store • D-215 Chaplin Memorial M. E. Church • D-217 Horn Farm • D-218 Northam House • D-795 Bay Shore Road House • D-796 Taylor's Island Chapel-of-Ease • D-797 Old James Island School • D-798 Travers Stapleforte Farm
	<p>Produce an oral history of the Taylors Island area of concern for publication and posterity.</p>

Area of Concern	Gap Analysis Recommendation
Madison	Prioritize the update of the MIHP form for the Madison (or Tobacco Stick) Survey District (D-650) to meet MHT's standards for survey district documentation.
	Prioritize for architectural/historical survey-complete the Maryland Inventory of Historic Properties Form, the nine (9) buildings within Madison area of concern that were built in 1900. These buildings are highly vulnerable and at-risk to coastal flooding, and hurricanes.
	Determine what flood mitigation, if any, has been completed at the remaining six (6) MIHP surveyed historic resources that are not listed and/or nominated for NRHP. Target these properties for flood mitigation and architectural/historical documentation to update their MIHP form. <ul style="list-style-type: none"> • D-32 William Harrington House • D-224 Brannock House • D-225 Benjamin L. Brooks House • D-259 Madison School • D-813 Madison M.E. Church • D-822 Calvert R. Jones House
	Produce an oral history of the Madison Survey District and surrounding area of concern for publication and posterity.
Crapo	Prioritize for architectural/historical survey-complete the Maryland Inventory of Historic Properties Form, the one (1) building within the Crapo that was built before 1900. This building is highly vulnerable and at-risk to coastal flooding, hurricanes, and sea level rise.
	Determine what flood mitigation, if any, has been completed at the remaining four (4) individually documented in the MIHP. Target these properties for flood mitigation architectural/historical documentation to update their MIHP form. <ul style="list-style-type: none"> • D-29 Lake Cove • D-733 I.F. Cannon & Son • D-824 Ebenezer Methodist Episcopal (M. E.) Church • D-826 Kermit Foxwell House
	Produce an oral history of the Crapo area of concern for publication and posterity.

Building- Specific Recommendation

MIHP Inventory Number	
D-836 Toddville House	This property is located in the FEMA designated Flood Zone AE and the Category 1 Hurricane Storm Surge inundation area. Utilizing data obtained from the FEMA Flood Risk Map - GIS database, the depth of flood at the lowest adjacent grade is 1.8 feet. This structure is not located in the projected 2050 Sea Level Rise inundation area and is approximately 1 foot above ground surface. All doors are 1 foot above the ground surface, while windows are 3 feet. The foundation of the structure is open, however evidence of mildew was observed around the base of the structure. Therefore, this structure needs to be protected from predicted flood levels to 2 feet in order to avoid future flood conditions. One mitigation measure to alleviate future flooding would be to elevation the structure.
D-829 Toddville Store	This property is located in the FEMA designated Flood Zone AE, projected 2050 Sea Level Rise inundation area, and the Category 1 Hurricane Storm Surge inundation area. Utilizing data obtained from the FEMA Flood Risk Map - GIS database, the depth of flood at the lowest adjacent grade is 3.3 feet. The front door is 1 foot above ground surface, while the original wood and glass windows are 3 feet above the ground surface. Additionally, this structure does have an open crawl space, however, standing water was seen within the crawl space. The projected 2050 sea level rise of 2.11 feet for Dorchester County. This structure needs to be protected from predicted flood levels to 5 feet in order to avoid future flood conditions. Considering the building is in poor condition and water damage was observed, producing an oral history of the Toddville Store for publication and posterity is recommended.
D-732 Meredith & Meredith Seafood Packing	This property is located in the FEMA designated Flood Zone AE, projected 2050 Sea Level Rise inundation area, and the Category 1 Hurricane Storm Surge inundation area. Utilizing data obtained from the FEMA Flood Risk Map - GIS database, the depth of flood at the lowest adjacent grade is 2.7 feet. The original building was a one story frame house, however only part of that building remains. The piece that remains has been covered in metal siding and metal roof. The original building was constructed half over the Tedious Creek and half over the bank. Asphalt and concrete surround the building on three sides, while the area facing the water retains wooden walkways over the water. Concrete block additions have enclosed most of the original building. The wood portions that remain have been covered in corrugated metal and are in poor condition. The concrete block additions, the main processing areas currently being used, are in good condition. The following flood and erosion mitigation measures are currently in-place: breakwater, wave damping, hardened shorelines, and softscape. Additional flood protection measures will be needed to mitigate potential future conditions. The projected sea level rise for Dorchester County in 2050 is 2.11 feet and the depth of flood at the lowest adjacent grade is 2.7 feet. Therefore, wet floodproofing is another mitigation measure that could be utilized to alleviate future flooding conditions. Wet floodproofing is a design method that allows water to move in the enclosed parts of the structure's lower area, such as the crawlspace or an unoccupied area (basement), and then out when water recedes. Additionally, mechanical, electrical and plumbing equipment within the structure should be elevated above current and projected future flood conditions or anchored.

Note: All recommendations will impact the property's integrity and consultation with MHT should be undertaken early in the planning stages of a flood mitigation project.

Building- Specific Recommendation

MIHP Inventory Number	
D-322 Zion M.E. Church	This property is located in the FEMA designated Flood Zone AE, projected 2050 Sea Level Rise inundation area, and the Category 1 Hurricane Storm Surge inundation area. Utilizing data obtained from the FEMA Flood Risk Map - GIS database, the depth of flood at the lowest adjacent grade is 3.4 feet. A thick plastic skirting reaches 1.5 feet above ground surface and is in good condition and well-attached. However, evidence of mildew and deteriorated wood was observed on the structure. The structure does contain 10 flood vents/openings. The flood vents/openings formed around concrete blocks which provide a 1-foot elevation above the ground surface. However, the projected sea level rise for Dorchester County in 2050 is 2.11 feet and the depth of flood at the lowest adjacent grade is 3.4 feet. Therefore, this property would need to be elevated at least 5.0 feet to avoid future flood conditions, which will negatively affect the property's potential eligibility for listing in the NRHP. Furthermore, the mechanical, electrical and plumbing equipment within the structure should be elevated above current and projected future flood conditions or anchored.
D-834 Wingate Manor	This property is located in the FEMA designated Flood Zone AE, projected 2050 Sea Level Rise inundation area, and the Category 1 Hurricane Storm Surge inundation area. Utilizing data obtained from the FEMA Flood Risk Map - GIS database, the depth of flood at the lowest adjacent grade is 2.8 feet. This structure is elevated 2 feet from the ground surface. However, the projected sea level rise for Dorchester County in 2050 is 2.11 feet. Due to inadequate site drainage and marshes and wetlands located to the northern and eastern sides of the property, additional flood protection measures would also be needed to mitigate potential future conditions. Furthermore, the fuel tank is not currently anchored. There are various methods for anchoring depending on the type of fuel tank. Anchoring a fuel tank will not only protect the structure but also the surrounding properties and the environment. Additionally, the mechanical, electrical and plumbing equipment within the structure should be elevated above current and projected future flood conditions or anchored.
D-846 Formally South Dorchester Bank	This property is located in the FEMA designated Flood Zone AE, projected 2050 Sea Level Rise inundation area, and the Category 1 Hurricane Storm Surge inundation area. Utilizing data obtained from the FEMA Flood Risk Map - GIS database, the depth of flood at the lowest adjacent grade is 3.7 feet. The structure does not have flood vents or crawl space. Evidence of mildew was observed around the base of the structure. Also, standing water and wetlands were within close proximity. A flood mitigation measure currently being utilized include a 1.5-foot sheet of plastic covering the base of the front door. Considering the projected sea level rise for Dorchester County in 2050 is 2.11 feet and the flood depth at the lowest adjacent grade is 3.7 feet, this structure needs to be protected from predicted flood levels up to 6 feet in order to avoid future flood conditions this structure. Flood mitigation measures, such as flood vents, would assist in mitigating potential future conditions. Removable flood barriers for doors and windows could be utilized as well during a flood event. Additionally, the mechanical, electrical and plumbing equipment within the structure should be elevated above current and projected future flood conditions or anchored.

Note: All recommendations will impact the property's integrity and consultation with MHT should be undertaken early in the planning stages of a flood mitigation project.

Building- Specific Recommendation

MIHP Inventory Number	
D-827 Tom Jones Market	<p>The property is located in designated FEMA Flood Zone AE, Category 1 Hurricane Storm Surge inundation area, and 2050 Sea Level Rise inundation area. Utilizing data obtained from the FEMA Flood Risk Map - GIS database, the depth of flood at the lowest adjacent grade is 3.0 feet. This structure has been constructed on a low concrete foundation, however the grading on the property has been sloped downward towards the structure. Therefore, the structure is located in a depression with standing water located in the north-end of the building. There is currently a water pump in operation directly adjacent at rear of building, however due to inadequate site drainage, the area is very wet and muddy. Mildew and deteriorated wood was found at the base of the structure. Furthermore, the projected sea level rise for Dorchester County in 2050 is 2.11 feet. To avoid current and future flood conditions, this structure needs to be protected from predicted flood levels up to 5 feet in order to avoid future flood conditions. Flood mitigation measures, such as removable flood barriers for doors and windows, could be utilized during a flood event. Additionally, the mechanical, electrical and plumbing equipment within the structure should be elevated above current and projected future flood conditions or anchored.</p>
D-320 St. Thomas M.E. Church	<p>This property is located in the FEMA designated Flood Zone AE, projected 2050 Sea Level Rise inundation area, and the Category 1 Hurricane Storm Surge inundation area. Utilizing data obtained from the FEMA Flood Risk Map - GIS database, the depth of flood at the lowest adjacent grade is 2.9 feet. This structure contains a brick pier and concrete block foundation. The crawl space is covered by layers of skirting, however portions the skirting are showing signs of deterioration. Also evidence of water stains around the base of the structure were observed along with deteriorated wood. The structure sits approximately 4 feet from ground surface. However, the projected sea level rise for Dorchester County in 2050 is 2.11 feet. Therefore, this property would need to be protected from predicted flood levels up to 2 feet in order to avoid future flood conditions. Additional flood protection measures would assist in mitigating potential future flood conditions. Additionally, the mechanical, electrical and plumbing equipment within the structure should be elevated above current and projected future flood conditions or anchored.</p>
D-837 Eugene Crochorn House	<p>This property is located in the FEMA designated Flood Zone AE, projected 2050 Sea Level Rise inundation area, and the Category 1 Hurricane Storm Surge inundation area. Utilizing data obtained from the FEMA Flood Risk Map - GIS database, the depth of flood at the lowest adjacent grade is 2.6 feet. This structure is rests on a concrete block foundation 2 feet above the ground surface. A lower opening with an entrance door was located on the structure. Flood mitigation measures utilized on the property include drainage ditches and softscaping. However, the projected sea level rise for Dorchester County in 2050 is 2.11 feet. Therefore, this structure needs to be protected from predicted flood levels up to 3 feet in order to avoid future flood conditions. Flood mitigation measures, such as removable flood barriers for doors and windows, could be utilized during a flood event. Also, currently the fuel tank is not anchored. There are various methods for anchoring depending on the type of fuel tank. Anchoring a fuel tank will not only protect the structure but also the surrounding properties and the environment. Additionally, the mechanical, electrical and plumbing equipment within the structure should be elevated above current and projected future flood conditions or anchored. This property is well maintained; however additional flood protection measures will be needed to mitigate potential future conditions.</p>

Note: All recommendations will impact the property's integrity and consultation with MHT should be undertaken early in the planning stages of a flood mitigation project.

Building- Specific Recommendation

MIHP Inventory Number	
D-735 Bradye P. Todd & Son Seafood Packing Company	This property is located in the FEMA designated Flood Zone AE, projected 2050 Sea Level Rise inundation area, and the Category 1 Hurricane Storm Surge inundation area. Utilizing data obtained from the FEMA Flood Risk Map - GIS database, the depth of flood at the lowest adjacent grade is 5.0 feet. The original structure was constructed in 1938 and is located along the water's edge of Tedious Creek. The property is not being properly maintained and the lack of drainage is causing deterioration of the wood siding, especially at the pier brick foundation. The structure does contain a crawl space, however evidence of mildew was observed. The projected sea level rise for Dorchester County in 2050 is 2.11 feet and the depth of flood at the lowest adjacent grade is 5.0 feet. Therefore, this structure needs to be protected from predicted flood levels up to 8 feet in order to avoid future flood conditions. Flood mitigation measures, such as removable flood barriers for doors and windows, could be utilized during a flood event such as flood events. However, due to the condition of the structure, producing an oral history of the Bradye P. Todd & Son Seafood Packing Company for publication and posterity is recommended.
D-316 Josiah Parks House	This property is located in the FEMA designated Flood Zone X, projected 2050 Sea Level Rise inundation area, and the Category 1 Hurricane Storm Surge inundation area. The property is located on a thin strip of land between the Honga River and the Chesapeake Bay on Middle on Hoopers Island and is aligned east to west facing a sharp s-curve bend in the road. The structure was constructed on elevated ground however, surrounding flood waters would isolate this structure. The projected sea level rise for Dorchester County in 2050 is 2.11 feet. These projected future conditions in conjunction with current flood conditions, this structure would not be accessible in the future. Also, currently the fuel tank is not anchored. There are various methods for anchoring depending on the type of fuel tank. Anchoring a fuel tank will not only protect the structure but also the surrounding properties and the environment.
D-317 Hoopers Island Memorial Community Hall	This property is located in the FEMA designated Flood Zone AE, projected 2050 Sea Level Rise inundation area, and the Category 1 Hurricane Storm Surge inundation area. Utilizing data obtained from the FEMA Flood Risk Map - GIS database, the depth of flood at the lowest adjacent grade is 3.2 feet. The property has been elevated 3.5 feet, providing 0.3 feet of elevation above the projected flood depth. However, the projected sea level rise for Dorchester County in 2050 is 2.11 feet. Therefore, this structure needs to be protected from predicted flood levels up to 3 feet in order to avoid future flood conditions. Flood mitigation measures, such as removable flood barriers for doors and windows, could be utilized during a flood event such as flood events. The (7) flood vents and crawl space alleviate flood damage at this time, however additional flood protection measures will be needed to mitigate potential future conditions. Also, currently the fuel tank is not anchored. There are various methods for anchoring depending on the type of fuel tank. Anchoring a fuel tank will not only protect the structure but also the surrounding properties and the environment. Additionally, the mechanical, electrical and plumbing equipment within the structure should be elevated above current and projected future flood conditions or anchored.

Note: All recommendations will impact the property's integrity and consultation with MHT should be undertaken early in the planning stages of a flood mitigation project.

Building- Specific Recommendation

MIHP Inventory Number	
D-843 Hoopers Island Bank	This property is located in the FEMA designated Flood Zone AE, projected 2050 Sea Level Rise inundation area, and the Category 1 Hurricane Storm Surge inundation area. Utilizing data obtained from the FEMA Flood Risk Map - GIS database, the depth of flood at the lowest adjacent grade is 2.5 feet. Tar Bay is approximately 280 feet behind the structure, while marshy wetlands are located approximately 30 feet across the street in the front of the building. An earthen berm has been constructed in the backyard of the property. This structure has not been elevated and does not have flood vents. Evidence of mildew was observed at the base of the structure. The front door is only 2 feet above ground surface. Considering the projected sea level rise for Dorchester County in 2050 is 2.11 feet, this property would need to be protected to a height of 5 feet to avoid future flood conditions. Since this property is located in close proximity to Tar Bay and marshy wetlands, producing an oral history of the Hoopers Island Bank for publication and posterity is recommended.
D-730 A.E. Phillips & Son	This property is located in the FEMA designated Flood Zone AE, projected 2050 Sea Level Rise inundation area, and the Category 1 Hurricane Storm Surge inundation area. Utilizing data obtained from the FEMA Flood Risk Map - GIS database, the depth of flood at the lowest adjacent grade is 6.0 feet. The property contains two structures. These structures were constructed on man-made infill developed from oyster shells along the edge of Back Creek. Flood and erosion mitigations installed at this location include: bulkheads, breakwater, wave damping, and softscape. The projected sea level rise for Dorchester County in 2050 is 2.11 feet. This property would need to be protected to a height of 8.0 feet to avoid future flood conditions. The structures do not contain crawlspaces or flood vents. Therefore, additional flood protection measures, such as wet or dry floodproofing, could be utilized to mitigate potential future conditions. Additionally, the mechanical, electrical and plumbing equipment within the structure should be elevated above current and projected future flood conditions or anchored.
D-737 Russell Hall Seafood Packing House	This property is located in the FEMA designated Flood Zone AE, projected 2050 Sea Level Rise area, and the Category 1 Hurricane Storm Surge inundation area. Utilizing data obtained from the FEMA Flood Risk Map - GIS database, the depth of flood at the lowest adjacent grade is 6.3 feet. This property contains three structures and is located along Back Creek. The original concrete block building was constructed closest to the water front. The original building was built on pilings and the wood floor was removed and underpinned with concrete. The remaining 2 buildings are: a newer concrete block cooler/freezer building and newer tall metal loading building. Both buildings seem to be sealed very tightly and in good condition. The projected sea level rise for Dorchester County in 2050 is 2.11 feet and the depth of flood at the lowest adjacent grade for the original structure is 6.3 feet. In order to avoid future flood conditions, this structure would need to be protected from predicted flood levels up to 8.5 feet in order to avoid future flood conditions. Additionally, to mitigate potential future flood conditions, the mechanical, electrical and plumbing equipment within the newer structures should be elevated above current and projected future flood conditions or anchored. Since the original structure is located in close proximity to Back Creek, producing an oral history of the for publication and posterity is recommended.

Note: All recommendations will impact the property's integrity and consultation with MHT should be undertaken early in the planning stages of a flood mitigation project.

Implementation

In an effort to carry out the ideas and recommendations developed over the course of this planning process, implementation strategies and next steps were identified by the Stakeholder Committee. A final meeting of the Stakeholder Committee was held on February 21, 2018. At this meeting members discussed strategies to ensure plan implementation. These strategies and next steps include:

- Members of the Core Planning Team will continue to meet with various Dorchester County workgroups.
- An internal clearinghouse has been institutionalized. The purpose of the clearinghouse is to assist County Council with making informed decisions regarding at-risk county-owned property. Utilizing this plan and the accompanying geodatabase, a historic review will be included in the hazard assessment profile presented by staff to the County Council.
- Public surveys and outreach will be conducted in order to prioritize structures that represent each community's characteristics. Grant funding will be sought to assist with flood mitigation measures that balances protection and preservation for these prioritized structures. Flood hazard informational flyers that include contact information will be sent with tax mailings.
- Utilizing the public outreach toolkit developed during this project, Stakeholder Committee members will attend and provide flood mitigation measures that balances protection and historic preservation at various community events; using the community event listing developed during this project.
- The Dorchester County Comprehensive Plan is in the update process. As such, the completion of *2018 Dorchester County Historic & Cultural Resources Hazard Mitigation & Risk Plan* is timely. Information may be integrated into the Comprehensive Plan easily. This information includes both historic resources and hazard risk.
- As a next step, coordinate with Department of Parks and Recreation to obtain a listing of county owned properties, i.e., open space. Prioritize listing based on hazard risk, size, and elevation. Recommend properties that meet these criteria for potential historic resource relocation. This could include both storage of and possible permanent historic preservation tourism site development. Recreating historic neighborhoods and towns, similar to the Zuiderzee Museum in the Netherlands. Much like the Zuiderzee Museum, the Dorchester County project would be devoted to preserving the cultural heritage and maritime history of the Eastern Shore, which would be a long term project.

Appendix A: Historic & Cultural Resources Geodatabase Methodology

Data Methodology

Historic & Cultural Resources Geodatabase

In order to assess the current risk and vulnerability of the historic and cultural resources located within Dorchester County, an extensive inventory of historic and cultural resources was developed. Historic and cultural resources are non-living examples of objects acquired and preserved because of their potential value as examples, as reference material, or as objects of artistic, historic, scientific, educational, or social importance, either individually or as a collection. Many types of resources can be considered historic. These include:

- Buildings—including residential, commercial, industrial, and agricultural constructs;
- Objects—such as signs, monuments, or statuary;
- Sites—such as gardens, estate grounds, battlefields, landscapes, and cemeteries; and
- Districts—such as neighborhoods, commercial areas, or college campuses. Sometimes a listing is made for a grouping of buildings that lack individual distinction but together have been judged to be significant.

Data obtained to aid in the development of the Historic & Cultural Resources Geodatabase included:

- Medusa- Maryland's Cultural Resources Information System;
 - Maryland Inventory of Historic Properties (MIHP);
 - National Register of Historic Places (NRHP);
 - Preservation Easements;
- Locally designated historic properties and cultural resources;
 - Cemeteries;
 - Maryland's Military Monuments;
 - Museums;
 - Churches;
 - Commercial Structures;
 - Residential Structures;
 - Government Structures; and
- Maryland Property View – Structures constructed 1967 and prior.

Next, the most recent version Maryland Property View Database was utilized to extrapolate the following information for each data point:

- Facility Type;
- Account Identifier;
- Address;
- Square Footage;
- Year Built;
- Structure Material;
- Improvement Value; and
- Building Stories.

Once attributes from the Maryland Property View Database were extrapolated for each data point, a vulnerability analysis was conducted. The following additional attribute columns were included in the database in order to assess the risk and vulnerability for each resource, where applicable.

- FEMA Flood Zone;
- Flood Depth;
- Storm Surge Inundation Areas (Hurricane Categories 1-4); and
- Sea Level Rise – Scenario 2050: 2.11 feet.

Analysis was completed using the Geodatabase and Hazus software, which allowed for the designation of the various types of flooding and associated details for each property or resource (flood zone, depth of flooding, hurricane category and sea level rise). In addition, flood hazard loss estimations were developed for those properties designated as “at-risk.” Finally, designation of priority properties and cultural resources for flood hazard mitigation.

Upon completion of the Historic & Cultural Resources Geodatabase, structures were depicted on hazard inundation mapping and utilized in tables for the vulnerability analysis sections of the Plan.

Gap Analysis

In order to conduct a gap analysis for cultural and historic resources within Dorchester County, the completion of the Historic & Cultural Resources Geodatabase was necessary. Reviewing and cross-referencing data from various sources within the completed Geodatabase, identified areas of un-surveyed and/or understudied historic resources. Potential areas of deficiency have been included within the Plan and identified within the implementation of the section of the Plan as future data collection and priority survey areas.

Prioritization Criteria

Focus Areas or Individual Structures Should:

1. Meet 3 or more of the hazard selection criteria, such as: building located within the Special Flood Hazard Area (SFHA), Hurricane Storm Surge Inundation Area, 2050 Mean Sea Level Rise Inundation Area.
2. Include 2 or more unique attributes that can be further assessed, such as: National Register of Historic Places (NRHP), Maryland Inventory of Historic Properties (MIHP), locally significant, age, or architecture/type.
3. Not be larger than 20 structures/properties or known/proposed historic district.

Selection Criteria for Area of Concern:

1. Impact to this area will have detrimental impacts to other parts of the county.
2. This area is culturally important to the community.
3. This area has environmental significance.
4. The size of the area large/small enough for us to actively engage the property owners.

Appendix B: Historic & Cultural Resources Geodatabase

Historic & Cultural Resources Geodatabase (H&CRG)

In order to assess the current risk and vulnerability of the historic and cultural resources located within Dorchester County, an extensive inventory of historic and cultural resources was developed. This inventory was placed in a geodatabase. A geodatabase is an alternate way to store GIS information in one large file, which can contain multiple point, polygon, and/or polyline layers. The geodatabase idea is a less “messy” way of organizing data than having multiple shapefiles, in multiple folders. To that end, the Historic and Cultural Resources Geodatabase (H&CRG) was developed to be utilized for the *2018 Dorchester County Historic & Cultural Hazard Mitigation & Risk Plan*.

The geodatabase is for official use only as it contains specific properties addresses and characteristics. For further information, please contact the Project Manager:

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Appendix C: Maryland Historical Trust Architectural Survey Form for Hazard Mitigation Planning

Architectural Survey Form for Hazard Mitigation Planning

The properties listed within the following table met the prioritization criteria established by the Core Planning Team and Stakeholder Committee. The prioritization criteria methodology is contained within Appendix A. As a result, fifteen (15) prioritized properties that are listed within the Maryland Inventory of Historic Places (MIHP) were surveyed. The completed forms are within this Appendix.

Areas of Concern: MIHP Prioritized Properties									
Area of Concern	MIHP Inventory Number	Priority	Permit/BOA History	Account ID	Address	Flood Zone	Flood Depth	Hurricane Category	Sea Level Rise
Toddville	D-836 Toddville House	1 st	None	1010005213	2551 Toddville Road	AE	1.8	CAT 1	Yes
	D-829 Toddville Store	1 st	BP#634011 Addition 11/1973	1010006139	Toddville Road	AE	3.3	CAT 1	Yes
	D- 732 Meredith & Meredith Seafood Packing	2 nd	None	1010005515	2343 Farm Creek Road	AE	2.7	CAT 1	Yes
	D-322 Zion M.E. Church	1 st	Roofing Permit 2003 Wheel Chair Ramp 2014	1010006457	Toddville Road	AE	3.4	CAT 1	Yes
Wingate	D-834 Wingate Manor	1 st	BP#635061 Addition 3/1976 Appeals Case #1619 B & B	1010006031	2335 Wingate Bishops Head Road	AE	2.8	CAT 1	Yes
	D-846 Formally the South Dorchester Bank	1 st	None	1010003172	2333 Wingate Bishops Head Road	AE	3.7	CAT 1	Yes
Bishops Head	D-827 Tom Jones' Market	1 st	Utility Room 1974	1010001641	Bishops Head Road	AE	3.0	CAT 1	Yes
	D-320 St. Thomas M.E. Church	2 nd	None	1010006430	Saint Thomas Church Road	AE	2.9	CAT 1	Yes
Crocheron	D-837 Eugene Crocheron House	2 nd	Revetment Permit 2006 – Shoreline Protection	1010006627	2904 Crocheron Road	AE	2.6	CAT 1	Yes

	D-735 Bradye P. Todd & Son Seafood Packing Company	1 st	None	1010004896	Country Road	AE	5.0	CAT 1	Yes
	D-316 Josiah Parks House	1 st	Roof 2005	1006089763	1905 Hoopersville Road	X	0	CAT 1	Yes
	D-317 Hooper's Island Memorial Community Hall	1 st	None	1006095917	Hoopersville Road	AE	3.2	CAT 1	Yes
	D-843 Hoopers Island Bank	1 st	Addition to SFD 2006	1006088899	2570 Hoopers Island Road	AE	2.5	CAT 1	Yes
Fishing Creek	D-730 A.E. Phillips & Son	1 st	Bulkhead 2001 Addition 2004 Roof 2008	1006090990	2423 Hoopers Island Rd	AE	6.0	CAT 1	Yes
	D-737 Russell Hall Seafood Packing House	1 st	Renovation 2003	1006089011	2501 Old House Point Road	AE	6.3	CAT 1	Yes

Appendix D: List of Acronyms

List of Acronyms

- Base Flood Elevation (BFE)
- Community Rating System (CRS)
- Core Planning Team (CPT)
- Digital Elevation Model (DEM)
- Digital Flood Insurance Rate Maps (DFIRMs)
- Federal Emergency Management Agency (FEMA)
- Flood Insurance Rate Maps (FIRMs)
- Flood Insurance Study (FIS)
- Geographic Information System (GIS)
- Hazard Identification Risk Assessment (HIRA)
- Hazard Mitigation Assistance (HMA)
- Hazard Mitigation Grant Program (HMGP)
- Hazard Mitigation Plan (HMP)
- Historic & Cultural Resources Database (H&CRG)
- Homeowners Flood Insurance Affordability Act (HFIAA)
- Light Detection and Ranging (LiDAR)
- Maryland Department of Environment (MDE)
- Maryland Department of Planning (MDP)
- Maryland Emergency Management Agency (MEMA)
- Maryland Environment Trust (MET)
- Maryland Historical Trust (MHT)
- Maryland Inventory of Historic Properties (MIHP)
- National Flood Insurance Program (NFIP)
- National Oceanic Atmospheric Administration (NOAA)
- National Register of Historic Places (NRHP)
- Pre-Disaster Mitigation (PDM)
- Priority Funding Areas (PFAs)
- Repetitive Loss (RL)
- Risk Mapping, Assessment and Planning (Risk MAP)
- Sea-Level Rise (SLR)
- Severe Repetitive Loss (SRL)
- Special Flood Hazard Areas (SFHA)
- Stakeholder Committee (SC)
- State Highway Administration (SHA)
- Storm Surge Inundation Maps (SIMMs)
- US Army Corps of Engineers (USACE)
- User Defined Data (UDD)
- User Defined Facility (UDF)

Appendix E: Key Terminology

Key Terminology

Historic Preservation

The process of identifying, evaluating, protecting, preserving, and using historic properties “as a living part of our community life and development in order to give a sense of orientation to the American people” (preamble of the National Historic Preservation Act [NHPA]). Historic preservation is a field that allows communities to preserve a sense of place, a unique identity, and a link to the past. It is an important tool not only for educating residents and visitors about the history of a place, but it can also help maintain community pride and a sense of belonging. The historic preservation movement began as a reaction to the destruction of important historic properties. Similarly, the emergency management movement began as a reaction to the devastating effect of natural disasters. Over time, both fields have evolved in a similar manner. Today both movements are more proactive and planning-oriented, and focus on prevention.

Historic Property

Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (National Register) maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religions and cultural importance to an Indian Tribe or Native Hawaiian organization and that meet the National Register criteria. (Source: 36 CFR Part 800.16 [I][1].)

Cultural Resources

Non-living examples of objects acquired and preserved because of their potential value as examples, as reference material, or as objects of artistic, historic, scientific, educational, or social importance, either individually or as a collection.

Cultural resources include “moveable heritage,” such as collections of artifacts, statuary, artwork, and important documents or repositories. Often housed in libraries, museums, archives, historical repositories, or historic properties, these resources range from three-dimensional examples such as sculptures, historic furnishings, family heirlooms, or textiles, to two-dimensional examples such as family records, written history or memorabilia, old photographs and maps, and other archival materials.

National Register of Historic Places

With the passage of the National Historic Preservation Act (NHPA) in 1966, the National Register became the Federal government's official list of historic properties that have met certain evaluation criteria and are legally recognized as historically significant in American history, architecture, archeology, engineering, and culture. Both Federal and State agencies are involved in the maintenance and expansion of the National Register, which is administered by the Secretary of the Interior under authority of Section 101(a)(1)(A) of the NHPA and the National Park Service (NPS). Properties are usually listed through a process managed by State Historic Preservation Officers (SHPOs) or Tribal Historic Preservation Officers (THPOs). Typically, these properties are at least 50 years old and demonstrate a degree of integrity of historic materials sufficient to convey important historic information. In its broadest sense, the National Register is a planning tool that highlights the importance of properties worthy of preservation due to their local, State, Tribal, or national significance. Many types of properties can be considered historic. These include:

- Buildings—including residential, commercial, industrial, and agricultural constructs;
- Structures—such as dams, bridges, canals, tunnels, or bandstands;
- Objects—such as signs, monuments, markers, or statuary;
- Sites—such as gardens, estate grounds, battlefields, landscapes, and archeological sites; and
- Districts—such as neighborhoods, commercial areas, or college campuses. Sometimes a listing is made for a grouping of buildings that lack individual distinction but together have been judged to be significant.

Maryland Inventory of Historic Properties

The Maryland Inventory of Historic Properties (MIHP) is a repository of information on districts, sites, buildings, structures, and objects of known or potential value to the prehistory and history of the State of Maryland. The Inventory was created shortly after the Maryland Historical Trust was founded in 1961, and now includes data on more than 13,000 archeological sites and 40,000 historic and architectural resources. The MIHP includes information about both standing structures and archeological resources. Inventoried properties contribute information to our understanding of Maryland's architecture, engineering, archeology, or culture.

Terms & Definitions

Flood zones are geographic areas that the FEMA has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Insurance Rate Map (**FIRM**) or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area.

A **digital elevation model (DEM)** is a **digital model** or 3D representation of a terrain's surface — commonly for a planet (including Earth), moon, or asteroid — created from terrain **elevation** data.

SLOSH stands for Sea, Lake, and Overland Surge from Hurricanes. It is a computerized **model** developed by the National Weather Service (NWS) to estimate storm surge heights and winds resulting from historical, hypothetical, or predicted hurricanes. ... It is also the basis for Hurricane Evacuation Studies (HES).

Floodplain- Any land area susceptible to being inundated by water from any source of flooding. “**Coastal floodplain**” means those portions of the *floodplain* district subject to coastal or tidal flooding by a one hundred-year flood, where detailed study is available.

Flood Zone	Description
SFHA-High Risk Areas	
A	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.
AE	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
VE	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.

Appendix F: List of Sources

Chapter 1 Introduction

Prepared by FEMA – FEMA 386-6. *Integrating Historic and Cultural Resource Considerations into Hazard Mitigation Planning*. May 2005.

Weather It Together. Available at: <https://www.annapolis.gov/885/Weather-It-Together>

Prepared by Maryland Historical Trust. *Maryland Historical Trust-Architectural Survey Form for Hazard Mitigation Planning*. Available at:
https://mht.maryland.gov/grants_hazardmitigation.shtml

Chapter 2 Community Profile

Prepared by Eias Jones. *New Revised History of Dorchester County, Maryland*. Cambridge, Md: Tidewater Publication, page 271. 1925;1966.

U.S. Census Bureau-American Fact Finder. Available at: www.census.gov.

The Historical Chronology for Dorchester County. Maryland Manual Online. Available at: <http://msa.maryland.gov/msa/mdmanual/36loc/do/chron/html/dochron.html>

Eastern Shore Indians: <http://www.rootsweb.ancestry.com/~mdcaroli/ESIndians.html>
Prepared by Christopher Weeks. *Between the Nanticoke and the Choptank: An Architectural History of Dorchester County, MD*. 1984.

Chapter 3 Risk Assessment

Digital Flood Insurance Rate Map (DFIRM) – Flood Zones. Available at FEMA Map Service Center: <https://msc.fema.gov/portal>.

FEMA Designated Special Flood Hazard Area (SFHA). Available at:
<http://www.mdfloodmaps.net/dfirmimap.html>.

Prepared by FEMA. *FEMA Flood Risk Report - Dorchester County, Maryland Coastal Study-Flood Risk Report Number 001*. January 20, 2016.

FEMA Hazus Program. Available at: Source: <https://www.fema.gov/hazus>

National Hurricane Center-Storm Surge Overview. Available at:
<http://www.nhc.noaa.gov/surge/>

Prepared by Scientific and Technical Working Group, Maryland Climate Change Commission. *Updating Maryland's Sea-Level Rise Projections*. June 26, 2013.
Available at: <http://www.umces.edu/sites/default/files/pdfs/SeaLevelRiseProjections.pdf>

Prepared by Smith Planning and Design. *Historic & Cultural Resources Geodatabase*. 2017.

Chapter 4 Areas of Concern

Medusa, Maryland's Cultural Resource Information System. Available at:
<https://mht.maryland.gov/secure/medusa/>

Prepared by Smith Planning and Design. *Historic & Cultural Resources Geodatabase*. 2017.

Chapter 5 Gap Analysis

Medusa, Maryland's Cultural Resource Information System. Available at:
<https://mht.maryland.gov/secure/medusa/>

Prepared by Smith Planning and Design. *Historic & Cultural Resources Geodatabase*. 2017.

Chapter 6 Other Historic Resources

Prepared by Nellie Marshall. *Tombstone Records of Dorchester County 1678-1964*. 1965.

Medusa, Maryland's Cultural Resource Information System. Available at:
<https://mht.maryland.gov/secure/medusa/>

Maryland Historical Trust Inventory of Military Monuments. Available at:
<https://mht.maryland.gov/monuments.shtml>

Maryland Historical Trust, Maryland's Roadside Historical Markers. Available at:
<http://mht.maryland.gov/historicalmarkers/>

Chapter 7 Mitigation Strategies

Prepared by FEMA. *FEMA P-467-2 Floodplain Management Bulletin – Historic Structures*. May 2008. Available at: <https://www.fema.gov/media-library/assets/documents/13411>

FEMA Hazard Mitigation Assistance (HMA) Program. Available at: <https://www.fema.gov/hazard-mitigation-assistance>

Appendix G: Public Outreach Toolkit Materials

List of Toolkit Materials

The following materials were utilized to develop the *Public Outreach Toolkit*.

- List of Events
- Resources
- Key Terminology / Definitions
- Homeowner's Guide to Retrofitting Six Ways to Protect Your Home from Flooding
 - FEMA P-312, 3rd Edition / June 2014
- National Flood Insurance Program Myths and Facts about the National Flood Insurance Program
 - Brochure
- Top Ten Facts for Consumers
 - FEMA F-301 / July 2009
- If Your Home or Business Has Been Flooded – Build Back Safer and Stronger
 - FEMA February 2013
- Elevation Certificate: Who Needs Them and Why
 - FEMA Fact Sheet
- Getting It Right: Annual Premium Rate Increase
 - FEMA July 2015
- Can We Afford to Rebuild Higher? Can We Afford Not To?
 - FEMA
- Historic Preservation and Cultural Resources
 - FEMA Fact Sheet
- Visualizing Sea Level Rise in Maryland's Chesapeake Bay
- Flood Mitigation Best Practice - Bay Head Elevated Home Undamaged by Sandy Surge