



**APPENDIX D:
FLOOD RISK ASSESSMENT TOOLS**



Flood Risk Assessment Tools

MD Floodmaps

Owner: Maryland Department of the Environment (MDE)

Used For: Flood risk

Brief Description: The State of Maryland, in conjunction with the Federal Emergency Management Agency (FEMA), has been systematically updating Flood Insurance Rate Maps for communities over the past several years. This site is designed to guide homeowners/renters as well as communities through the process of determining their current flood risk as well as future flood risk based on the preliminary Digital Flood Insurance Rate Maps.

Coast Smart Climate Ready Action Boundary (CRAB)

Owner: Maryland Department of the Environment (MDE)

Used For: Flood risk, planning

Brief Description: Maryland Coast Smart CRAB Coastal Flood Depth Grid consists of a grid image service depicting the CRAB for coastal areas throughout the State of Maryland. Certain State Agency construction projects and local projects that will be using State funding will be required to address the impacts of the higher and wider coastal floodplain as defined in the CRAB.

Flood Factor

Owner: First Street

Used For: Flood risk, preparedness, outreach

Brief Description: Past floods, current risks, and future projections based on peer-reviewed research. For informational purposes only; the Flood Factor model is designed to approximate flood risk and not intended to include all possible risks or mitigations of floods.

MyCoast (Maryland)

Owner: National Oceanic & Atmospheric Administration (NOAA) & Maryland Department of Natural Resources

Used For: Flood risk, planning

Brief Description: MyCoast: Maryland allows you to communicate flooding and storm damage in your community. It is a portal to collect and analyze photos which are linked to precipitation, riverine, and tidal data to create reports that help government agencies, business owners, and residents understand impacts in your community and encourage action to reduce localized flooding.

Coastal Flood Exposure Mapper

Owner: National Oceanic & Atmospheric Administration (NOAA)

Used For: Coastal flood risk, planning

Brief Description: Interactive mapping tool to start community discussion about hazard impacts with maps of your area that show people, places, and natural resources exposed to coastal flooding.

Surging Seas

Owner: Climate Central

Used For: Flood risk, planning, outreach

Brief Description: A collection of maps and tools that demonstrate the effects of sea level rise and the associated increased flood risk.

Watershed Resources Registry (WRR)

Owner: Multiple federal and state agencies

Used For: Planning, NPEA compliance

Brief Description: WRRs are state-specific preservation and restoration models displayed on an interactive online mapping tool that also features a large number of high-quality datasets for regulatory and other environmental planning goals.

FEMA Mobile App

Owner: Federal Emergency Management Agency (FEMA)

Used For: Preparedness

Brief Description: FEMA's Mobile app (available in English and Spanish) allows you to receive real-time weather alerts, locate emergency shelters in your area, prepare for common hazards, and more.

iMap

Owner: Maryland Department of Information Technology

Used For: Statewide data

Brief Description: MD iMAP is Maryland's Enterprise Geographic Information System (GIS). The platform includes core infrastructure, access to GIS software, and delivery of authoritative data and services to support the GIS community. The platform was created to improve the quality and lower the cost of government services through collective investment in and effective application of geospatial data and systems and to reach beyond government by making data freely and publicly available to the fullest extent possible in consideration of privacy and security.

Know Your Zone

Owner: Maryland Department of Emergency Management

Used For: Statewide data, flood risk, hurricane risk

Brief Description: The Know Your Zone GIS application is an interactive map that MD citizens can use to determine their storm evacuation zone based on their address. The application can help MD citizens determine the best evacuation route in the event of a storm or flood event.

Maryland Coastal Atlas

Owner: Maryland Department of Natural Resources

Used For: Coastal data

Brief Description: The Coastal Atlas is a mapping tool that allows state and local decision-makers to visually analyze and explore coastal and ocean data layers for project and planning purposes. Using the built-in tools, the user can query, map, and analyze spatial data to better understand Maryland's marine resources. The map layers include everything from recreational use and species habitat areas, to shoreline erosion rates and sea level rise vulnerability.

Climate Change Vulnerability Viewer (CCVV)

Owner: State Highway Administration (SHA), Maryland Department of Transportation (MDOT)

Used For: Flood risk, planning

Brief Description: The MDOT SHA CCVV is a web application that showcases a variety of climate related data layers and infrastructure to view, interpret, and utilize for analysis related to climate change, extreme weather, and transportation. The purpose of the CCVV is to support internal and external transportation professionals throughout Maryland in utilizing data to mitigate against, avert, and adapt to potential impacts of climate change related hazards.

Sea Level Rise and Historic Properties App

Owner: Maryland Department of Planning (MDP) and Maryland Historical Trust (MHT)

Used For: Coastal flood risk, historic places, historic properties

Brief Description: The app allows users to explore the impact continued sea level rise will have on historic landmarks in Maryland. The coastal areas of the Chesapeake contain a high concentration of vulnerable historic architecture and archeological sites. The Lower Eastern Shore is particularly threatened.

Medusa

Owner: Maryland Historical Trust (MHT)

Used For: Architectural and archaeological sites

Brief Description: Medusa is MHT's online database of architectural and archaeological sites and standing structures. The database includes records for the National Register of Historic Places (NRHP) properties in Maryland, determinations of eligibility (DOE) records, and records for properties in the Maryland Historic Preservation Easement program.

Maryland Park Equity Mapper

Owner: Maryland Department of Natural Resources

Used For: Planning

Brief Description: This Park Equity Mapper is a decision-support tool to determine which communities that are in need of park space and those that may be underserved or underutilized by existing park space.

Mid-Atlantic Regional Integrated Sciences and Assessments (MARISA)

Owner: National Oceanic & Atmospheric Administration (NOAA)

Used For: Planning

Brief Description: MARISA focuses on building more resilient Chesapeake Bay and Mid-Atlantic communities through improved understanding of and response to climate variability and change. The website serves as a medium of information regarding MARISA's ongoing stakeholder interactions and dataset creations.

Watershed Mapping and Assessment

Owner: Maryland Department of the Environment

Used For: Flood risk

Brief Description: The map is a GIS web application developed to help understand where flooding has occurred in the past and recognize where watershed studies are needed.

Precipitation Frequency Data Server (PFDS)

Owner: National Oceanic & Atmospheric Administration (NOAA)

Used For: Flood risk

Brief Description: PFDS is a point-and-click interface developed to deliver NOAA Atlas 14 precipitation frequency estimates and associated information. Upon clicking a state on the map above or selecting a state name from the drop-down menu, an interactive map of that state will be displayed. From there, a user can identify a location for which precipitation frequency estimates are needed. Links to supplementary information (ASCII grids of estimates, associated temporal distributions of heavy rainfall, time series data at observation sites, cartographic maps, etc.) can also be found.

Coastal Risk Screening Tool

Owner: Climate Central

Used For: Flood risk, planning

Brief Description: The Coastal Risk Screening Tool is an interactive map showing areas threatened by sea level rise and coastal flooding. The map combines the most advanced global model of coastal elevations with the latest projections for future flood levels. View areas at risk through filters including water level, affordable housing, temperature, and more.

Maryland Flood Explorer

Owner: Maryland Department of Natural Resources

Used For: Flood risk, planning, outreach

Brief Description: The Maryland Coastal Flood Explorer is a valuable tool for visualizing predicted flood levels in Maryland's coastal zone. This explorer presents higher resolution predicted, historic, and current flood depths created from locally collected LiDAR-derived elevation data. The goal of developing this tool is to help coastal decision makers at the state and local level understand current conditions and future vulnerability to flooding and serve as a basis for short, mid, and long term planning.

Climate Data and Tools

Owner: Maryland Department of Natural Resources

Used For: Flood risk, planning, outreach

Brief Description: The DNR Climate Data and Tools website is a categorized hub of climate data and tools that can be used to support coastal resilience, environmental resilience, restoration and land-use planning, and climate education. For those uncertain where to start, this webpage provides a user-friendly entry point to find the maps, tools, reports, and other data needed.

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