



Maryland Marine Debris Emergency Response Guide: Comprehensive Guidance Document

NOAA Marine Debris Program
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
Technical Memorandum NOS OR&R Marine Debris Emergency Response Guide 010b
November 2023

Maryland Marine Debris Emergency Response Guide

Comprehensive Guidance Document

Jessica Conway^{1,2}, Amy Gohres¹, Jason Rolfe¹

¹ National Oceanic and Atmospheric Administration, Office of Response and Restoration, Marine Debris Program; Silver Spring, MD, USA

² Genwest Systems; Edmonds, WA, USA

November 2023

Original Publication: May 2019

For citation purposes, please use:

NOAA Marine Debris Program. (2023). Maryland Marine Debris Emergency Response Guide: Comprehensive Guidance Document. NOAA Technical Memorandum NOS OR&R Marine Debris Emergency Response Guide 010b DOI 10.25923/jwdg-8148

For more information, please contact:

Katie Morgan, *Mid-Atlantic Regional Coordinator*
katie.morgan@noaa.gov

Jessica Conway, *Response Specialist*
jessica.conway@noaa.gov

NOAA Marine Debris Program
Office of Response and Restoration
National Ocean Service
1305 East-West Highway
Silver Spring, MD 20910 USA
Website: <https://MarineDebris.noaa.gov/>

Table of Contents

List of Acronyms	3
Definitions	4
1 Introduction.....	10
1.1. Purpose.....	10
1.2. Scope of <i>Guide</i>	10
1.3. <i>Guide</i> Maintenance	10
2 Marine Debris Incidents in Maryland.....	12
2.1. Foreseeable Marine Debris Incidents in Maryland.....	12
2.2. Prominent Debris Types	13
3 Maryland Marine Debris Response Flowchart	16
4 Roles and Responsibilities	18
4.1. Local Agency Responsibilities	18
4.2. State Agency Responsibilities.....	19
4.3. Federal Agency Responsibilities.....	21
4.4. Private Landowners	27
4.5. Volunteer and Non-Governmental Organizations.....	27
4.6. Agency Jurisdiction Map	27
5 Permitting and Compliance Requirements in Maryland.....	29
5.1. State Agency Requirements.....	29
5.2. Federal Agency Requirements	30
5.3. Permitting and Compliance for Marine Debris Removal in Maryland One-Pager	33
6 Maryland Marine Debris Response Challenges.....	35
6.1. Response Challenges and Recommended Actions	35
6.1.1 Response Logistics	35
6.1.2 Policy	36
6.1.3 Communication/Education	37
6.1.4 Resources.....	37
6.2. Additional Resources	38
7 References	39
8 Appendices	41
8.1 Select Agency Authorities.....	41
8.2 Maryland Legislation Applicable to Marine Debris Response	44
8.3 Agency Response Capabilities.....	45
8.4 Agency Contact Information.....	48

List of Acronyms

ACP	Area Contingency Plan
ADV	Abandoned or derelict vessel
BMP	Best Management Practice
C&D	Construction and Demolition Debris
CBRA	Coastal Barrier Resources Act
CBRS	John H. Chafee Coastal Barrier Resources System
CERCLA	Comprehensive Environmental Response Compensation Liability Act
ECP	Emergency Conservation Program (of FSA)
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ERMA	Environmental Response Management Application
ESA	Endangered Species Act
ESF	Emergency Support Function
ESFO	Ecological Services Field Office (of USFWS)
EWP	Emergency Watershed Protection Program (of NRCS)
FEMA	Federal Emergency Management Agency
FOSC	Federal On-Scene Coordinator
FSA	Farm Service Agency
GIS	Geographic Information Systems
HOA	Home Owners Association
LIDAR	Light Detection and Ranging
MDEM	Maryland Department of Emergency Management
MDE	Maryland Department of the Environment
MDNR	Maryland Department of Natural Resources
MDOT	Maryland Department of Transportation
MDP	Maryland Department of Planning
MHT	Maryland Historical Trust (of MDP)
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act
NGO	Non-Governmental Organization
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service (of NOAA)
NPS	National Park Service
NRC	National Response Center
NRCS	Natural Resources Conservation Service
NRP	Natural Resource Police (of MDNR)
NRT	Navigation Response Team (of NOAA)
NWR	National Wildlife Refuge (of USFWS)
ORR	Office of Response and Restoration (of NOAA)
RCRA	Resource Conservation and Recovery Act
RP	Responsible Party
SCF	State Coordinating Function
SHPO	State Historic Preservation Office
SSC	Scientific Support Coordinator (of NOAA)
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service

Definitions

Abandoned or sunken vessel – Any vessel that: (1) Is left illegally or has remained without permission for more than 30 days on public property, including public marinas, docks, or boatyards; (2) Has remained at the following locations for more than 90 days without the consent of the owner or person in control of the property: (i) A private marina or property operated by a private marina; or (ii) A private boatyard or property operated by a private boatyard; (3) Has remained at the following locations for more than 30 days without the consent of the owner or person in control of the property: (i) A private dock; or (ii) At or near waters' edge on private property; (4) Has remained on private property other than the private property described in items (2) and (3) of this subsection for more than 180 days without the consent of the owner or person in control of the property; or (5) (i) Has been found adrift or unattended in or upon the waters of the State, and is found in a condition of disrepair as to constitute a hazard or obstruction to the use of the waters of the State or presents a potential health or environmental hazard; and (ii) Is not: 1. Historic property as defined in § 5A-301 of the State Finance and Procurement Article; or 2. Submerged archaeological historic property as defined in § 5A-333 of the State Finance and Procurement Article (Md. Code Ann. § 8-721(a)).

Area Contingency Plan (ACP) – Reference document prepared by an Area Committee for the use of all agencies engaged in responding to environmental emergencies in a defined geographic area. The purpose of the ACP is to define the roles, responsibilities, resources, and procedures necessary to address oil and hazardous substance incidents. For Maryland, the *Upper Chesapeake Bay Estuary Area Contingency Plan* is prepared by the Area Committee and maintained by U.S. Coast Guard District 5, Sector Maryland-National Capital Region (U.S. Coast Guard [USCG], 2012).

Chemical, biological, radiological, and nuclear-contaminated debris – Debris contaminated by chemical, biological, radiological, or nuclear materials (Federal Emergency Management Agency [FEMA], 2007).

Coastal zone (ACP coastal zone) – U.S. Coast Guard area of responsibility for response under the National Contingency Plan, with geographic boundaries defined in the *Upper Chesapeake Bay Estuary Area Contingency Plan* (USCG, 2012).

Coastal zone (under Maryland Coastal Zone Management Program) – The Maryland coastal zone extends from three miles out in the Atlantic Ocean to the inland boundaries of the following 16 counties and Baltimore City that border the Atlantic Ocean, Chesapeake Bay, and the Potomac River up to the District of Columbia: Anne Arundel, Baltimore, Calvert, Carolina, Cecil, Charles, Dorchester, Harford, Kent, Prince George's, Queen Anne's, St. Mary's, Somerset, Talbot, Wicomico, and Worcester (Maryland Department of Natural Resources, n.d.).

Construction and demolition debris (C&D) – Components of buildings and structures, such as lumber and wood, gypsum wallboard, glass, metal, roofing material, tile, carpeting and other floor coverings, window coverings, pipe, concrete, asphalt, equipment, furnishings, and fixtures (FEMA, 2007).

Electronic waste (e-waste) – Electronics that contain hazardous materials, such as computer monitors, televisions, cell phones, and batteries. These products may contain minerals and chemicals that require specific disposal methods (FEMA, 2007).

Eligible applicant – Entities who may receive public assistance reimbursement funding from the Federal Emergency Management Agency (FEMA) under the Stafford Act. Eligible applicants include state and local governments, federally recognized Indian tribal governments, and certain private non-profits that serve a public function and have the legal responsibility to remove the debris (FEMA, 2020).

Eligible debris – Debris that is a direct result of a presidential major disaster declaration, in the designated disaster area, and whose removal is in the public interest (i.e., eliminating the immediate threat of significant damage to improved public or private property or ensuring economic recovery of the affected community to the benefit of the community at large). Debris includes, but is not limited to, vegetative debris, construction and demolition debris, sand, mud, silt, gravel, rocks, boulders, and vehicle and vessel wreckage. Debris removal from waterways that is necessary to eliminate the immediate threat to life, public health and safety, or improved property is considered eligible (FEMA, 2020; 44 C.F.R. § 206.224).

Emergency –

- **State of Maryland** – The threat or occurrence of: (1) A hurricane, tornado, storm, flood, high water, wind-driven water, tidal wave, earthquake, landslide, mudslide, snowstorm, drought, fire, explosion, and any other disaster in any part of the State that requires State assistance to supplement local efforts in order to save lives and protect public health and safety; or (2) An enemy attack, act of terrorism, or public health catastrophe (Md. Code Ann. § 14-101(c)).
- **National Oceanic and Atmospheric Administration Fisheries** – A situation involving an act of God, disasters, casualties, national defense or security emergencies, etc., and includes response activities that must be taken to prevent imminent loss of human life or property (National Oceanic and Atmospheric Administration [NOAA], 2019).
- **Federal Emergency Management Agency** – Any occasion or instance for which, in the determination of the president, federal assistance is needed to supplement state and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States (42 U.S.C. § 5122(1)).
- **U.S. Army Corps of Engineers** – A situation which would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process the application under standard procedures (33 C.F.R. § 325.2(e)(4)).

Emergency Support Function (ESF) – Mechanism for grouping functions most frequently used to provide federal support to states and federal-to-federal support, both for declared disasters and emergencies under the Stafford Act and for non-Stafford Act incidents. The state of Maryland utilizes the State Coordinating Function (SCF) approach, similar to the federal ESFs, and assigns corresponding state agencies to each SCF in the *Maryland Consequence Management Operations Plan* as prepared by Maryland Emergency Management Agency (Maryland Department of Emergency Management [MDEM], 2019). The Environmental Protection SCF and the Natural Resources SCF are the two most commonly applied SCFs during response to a waterway debris incident, whereas ESF-3, Public Works and Engineering, and ESF-10, Oil and Hazardous Materials Response, are the most commonly applied federal support functions.

Environmental Sensitivity Index Map – Maps produced by the National Oceanic and Atmospheric Administration (NOAA) that are a compilation of information about coastal shoreline sensitivity, biological resources, and human use resources. This information is used in planning to create cleanup strategies before an accident occurs so that authorities are prepared to act in the event of a spill (National Oceanic and Atmospheric Administration [NOAA], 2020a).

Federally maintained waterways and channels – A waterway that has been authorized by Congress and which U.S. Army Corps of Engineers operates and maintains for general (including commercial and recreational) navigation (FEMA, 2010).

Hazard to navigation – An obstruction, usually sunken, that presents sufficient danger to navigation so as to require expeditious, affirmative action such as marking, removal, or re-definition of a designated waterway to provide for navigational safety (33 C.F.R. § 64.06).

Hazardous substance – (A) Any substance designated pursuant to section 311(b)(2)(A) of the Federal Water Pollution Control Act, (B) any element, compound, mixture, solution, or substance designated pursuant to 42 U.S.C. § 9602, (C) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (but not including any waste the regulation of which under the Solid Waste Disposal Act has been suspended by Act of Congress), (D) any toxic pollutant listed under section 307(a) of the Federal Water Pollution Control Act, any hazardous air pollutant listed under section 112 of the Clean Air Act, and (F) any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to section 7 of the Toxic Substances Control Act. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas; 42 U.S.C. § 9601(14)).

Hazardous waste – Regulated under the Resource Conservation and Recovery Act (RCRA) and contains properties that make it potentially harmful to human health or the environment. A RCRA hazardous waste is a waste that appears on one of the four hazardous waste lists or exhibits at least one of the following four characteristics: ignitability, corrosivity, reactivity, or toxicity (FEMA, 2007).

Household hazardous waste/material – Hazardous products and materials that are used and disposed of by residential consumers, including some paints, stains, varnishes, solvents, pesticides, and other products containing volatile chemicals that catch fire, react, or explode under certain circumstances or that are corrosive or toxic (FEMA, 2007).

Improved property – Any structure, facility, or equipment that was built, constructed, or manufactured. Examples include buildings, levees, roads, and vehicles. Land used for agricultural purposes is not improved property, nor are vacant lots, forests, heavily wooded areas, and unused areas (44 C.F.R. § 206.221(d)).

Incident waterway debris – See definition for [Waterway debris](#).

Infectious waste – Waste capable of causing infections in humans and can include animal waste, human blood and blood products, medical waste, pathological waste, and discarded sharps (needles, scalpels, or broken medical instruments; FEMA, 2007).

Inland zone (ACP inland zone) – U.S. Environmental Protection Agency area of responsibility for response under the National Contingency Plan, with geographic boundaries defined in the *Upper Chesapeake Bay Estuary Area Contingency Plan* (USCG, 2012).

Major disaster – Any natural catastrophe (including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the president causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of states, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby (42 U.S.C. § 5122(2)).

Marine debris – Any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or Great Lakes (33 U.S.C. § 1956(3)). For purposes of this document, the term marine debris may also refer to vegetative material that enters a waterway following a natural or anthropogenic incident and poses a threat to the natural or built environment. This also includes shoreline and wetland debris and debris in some inland, non-tidal waterways.

National Oil and Hazardous Substances Pollution Contingency Plan (National Contingency Plan, NCP) – Federal Government’s blueprint for responding to both oil spills and hazardous substance releases (U.S. Environmental Protection Agency, 2018).

Navigable waterways – Navigable waterways include both those waterways which are federally maintained and those waterways which are not federally maintained. U.S. Army Corps of Engineers defines navigable waters of the United States as those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity (33 C.F.R. § 329.4; 33 C.F.R. § 2.36).

Obstruction – Anything that restricts, endangers, or interferes with navigation (33 C.F.R. § 64.06).

Oil – Oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil (33 U.S.C. § 1321(a)(1)).

Pollutant or contaminant – Includes, but is not limited to, any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring; except that the term “pollutant or contaminant” shall not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of 42 U.S.C. § 9601(14) and shall not include natural gas, liquefied natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas; 42 U.S.C. § 9601(33)).

Pollution – (1) "Pollution" means every contamination or other alteration of the physical, chemical, or biological properties, of any waters of the State. (2) "Pollution" includes change in temperature,

taste, color, turbidity, or odor of the waters of the State or the discharge or deposit of any organic matter, harmful organism, or liquid, gaseous, solid, radioactive, or other substance into any waters of the State as will render the waters of the State harmful, detrimental, or injurious to public health, safety, or welfare, domestic, commercial, industrial, agricultural, recreational, other legitimate beneficial uses, or livestock, wild animals, birds, fish, or other aquatic life (Md. Code Ann. § 9-101(e)).

Putrescent debris – Debris that will decompose or rot, such as animal carcasses and other fleshy organic matter (FEMA, 2007).

Recoverable waterway debris – Generally any documented vessel, vehicle, recreational vehicle, or shipping container traceable to an owner (U.S. Army Corps of Engineers, 2010).

Severe marine debris event – An atypically large amount of marine debris caused by a natural disaster, including a tsunami, flood, landslide, or hurricane, or other source (33 U.S.C. § 1956(6)).

Soil, mud, and sand – Soil, mud, and sand deposited after floods, landslides, winds, and storm surges on improved public property and rights-of-way (FEMA, 2007).

Stafford Act – The Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, provides the authorities and funding for federal support to state and local entities in responding to presidential major disaster and emergency declarations (U.S. Department of Homeland Security, 2013).

State Coordinating Functions (SCF) – State Coordinating Functions (SCF) feature a lead State Department/Agency/Office and one or more support State Departments/Agencies. The SCFs conduct state-level operations and support the needs of local jurisdictions and other State Departments/Agencies/Offices during consequence management activities (MDEM, 2019). The state of Maryland utilizes the State Coordinating Function (SCF) approach, similar to the federal ESFs, and assigns corresponding state agencies to each SCF in the *Maryland Consequence Management Operations Plan* as prepared by Maryland Emergency Management Agency (Maryland Emergency Management Agency [MDEM], 2019). The Environmental Protection SCF and the Natural Resources SCF are the two most commonly applied SCFs during response to a waterway debris incident, whereas ESF-3, Public Works and Engineering, and ESF-10, Oil and Hazardous Materials Response, are the most commonly applied federal support functions.

State wetlands – Any land under the navigable waters of the State below the mean high tide, affected by the regular rise and fall of the tide. Wetlands of this category which have been transferred by the State by valid grant, lease, patent or grant confirmed by Article 5 of the Maryland Declaration of Rights shall be considered "private wetland" to the extent of the interest transferred (Md. Code Ann. § 16-101(p)).

Vegetative debris – Whole trees, tree stumps, tree branches, tree trunks, and other leafy material. May be recyclable or have salvage value (FEMA, 2007).

Vehicles and vessels (FEMA definition) – Vehicles and vessels damaged, destroyed, displaced, or lost as a result of a disaster. These vehicles and vessels may eventually be abandoned because of the damage incurred or because the original owners have relocated. Vehicles and vessels may be classified as debris if they block public access and critical facilities (FEMA, 2007).

Vessel – Every description of watercraft, including an ice boat but not including a seaplane, that is used or capable of being used as a means of transportation on water or ice (Md. Code Ann. § 8-701(s)(1)).

Waters of the State – Waters of the State includes: (1) Both surface and underground waters within the boundaries of the State subject to its jurisdiction; (2) That portion of the Atlantic Ocean within the boundaries of the State; (3) The Chesapeake Bay and its tributaries; (4) All ponds, lakes, rivers, streams, public ditches, tax ditches, and public drainage systems within the State, other than those designed and used to collect, convey, or dispose of sanitary sewage; and (5) The floodplain of free-flowing waters determined by the Department of the Environment on the basis of the 100-year flood frequency (Md. Code Ann. § 8-101(g)).

White goods – Discarded household appliances such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, and water heaters. May contain ozone-depleting refrigerants, mercury, or compressor oils that must be removed before disposal. May be recyclable or have salvage value (FEMA, 2007).

1. Introduction

1.1 Purpose

The purpose of this document is to improve preparedness for response and recovery operations following a disaster that generates marine debris in coastal Maryland. This document outlines existing response structures at the local, state, and federal levels to facilitate a coordinated, well-managed, and immediate response to marine debris incidents impacting the state of Maryland.

Individual organization roles and responsibilities are presented in text form as well as in a consolidated one-page flowchart that functions as a decision tree for marine debris response. Additionally, organization jurisdictions are presented an [online](#) map in this document (NOAA, 2021). The document also includes an overview of permitting and compliance requirements that must be met before marine debris removal work begins. This information is synthesized in a one-page reference handout.

Because all incidents are different, in reality some aspects of marine debris response are subjective and not solely dependent on prevailing roles and authorities. This is especially true following a major, catastrophic, or unprecedented incident. This guide seeks to capture the most likely response structure and actions with the understanding that flexibility is an inherent component of an effective response.

The *Maryland Marine Debris Emergency Response Guide: Comprehensive Guidance Document (Guide)* serves as a complete reference for Maryland incident waterway debris response. The accompanying [Field Reference Guide](#) includes an organization contact table and the most pertinent information for quick reference in the field and during emergency response operations.

1.2 Scope of Guide

The *Guide* addresses both natural and anthropogenic marine debris incidents affecting Maryland's coastline. In 33 U.S.C. § 1956(3), marine debris is defined as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or Great Lakes. Although vegetative debris is not included in the legal definition for marine debris, Maryland stakeholders have identified it as a common debris stream of concern following natural disasters. Therefore, in this document, the term marine debris is used more generally and also includes vegetative material and debris that could be exposed to or release oil, hazardous substances, pollutants, or contaminants that enters a waterway following an acute incident and poses a threat to the natural or built environment. This may include shoreline and wetland debris and debris in some inland, non-tidal waterways. This *Guide* specifically addresses marine debris resulting from acute episodic incidents, such as disaster debris, rather than chronic marine debris issues.

1.3 Guide Maintenance

Response to marine debris after disasters is complex, and the development of this product benefited greatly from the collaboration, experience, and good will of marine debris response stakeholders in Maryland. The *Guide* is a living document and is subject to change as additional information becomes available and updates are needed. The *Guide* will be maintained by the National Oceanic and Atmospheric Administration's (NOAA) Marine Debris Program in

coordination with federal, state, and local stakeholders. Contact information in the *Field Reference Guide* will be verified annually, and the *Guide* will undergo a periodic formal review as needed. The *Comprehensive Guidance Document* and subsequent versions will be posted on the NOAA Marine Debris Program website at <https://marinedebris.noaa.gov/> (NOAA, 2020d).

2 Marine Debris Incidents in Maryland

2.1 Foreseeable Marine Debris Incidents in Maryland

The state of Maryland offers a unique geography and demographic that makes it vulnerable to both natural and anthropogenic hazards that generate marine debris. Maryland's coastal zone extends from three miles out in the Atlantic Ocean to the counties that border the Chesapeake Bay and the Potomac River. The coastal zone is comprised of 16 counties plus the city of Baltimore and is home to almost 70% of Maryland's residents (Maryland Department of Natural Resources, n.d.). Many of Maryland's coastal counties have borders along the Chesapeake Bay, the largest estuary in North America, which has the potential to carry large amounts of debris into the Atlantic Ocean.

The Maryland Department of Emergency Management (MDEM) conducted a risk analysis to identify the most probable and impactful hazardous events that could occur in Maryland. The method used for assessing identified hazards was based on several factors including historical occurrences, vulnerability of population, historical impacts, and local hazard mitigation plan hazard risk rankings. The most likely hazard events, meaning events that are likely to occur more than once every five years, were flood, coastal hazards, winter storms, wind, and thunderstorms (Maryland Department of Emergency Management [MDEM], 2016).

In the hazard risk analysis, coastal hazards included tropical storms, hurricanes, Nor'easters, sea level rise, and shoreline erosion. Due to Maryland's extensive shoreline and high coastal population, the majority of its residents are vulnerable to these coastal hazards. Figure 1 shows the coastal hazard ranking assessment for each of Maryland's coastal counties. 14 of the 16 coastal counties are considered to be at a high or medium-high risk for coastal hazards.

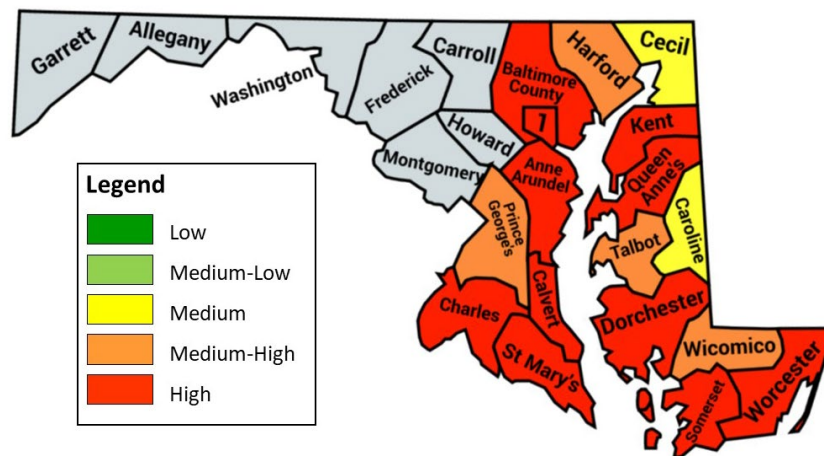


Figure 1. Maryland's coastal county risk assessment for coastal hazards. Coastal hazards include tropical storms, hurricanes, Nor'easters, sea level rise, and shoreline erosion. Data adapted from Maryland Emergency Management Agency (2016).

Flooding and coastal hazards were identified as the most frequent and widespread hazards to occur in Maryland (MDEM, 2016). Coastal hazards also have the potential to cause flooding as a secondary hazard, for example, flooding from a hurricane's storm surge. Flooding can produce significant amounts of marine debris, potentially causing navigational hazards and water quality

issues within the Chesapeake Bay and its tributaries. Since 2016, Maryland has suffered from three severe flooding events, resulting in three major disaster declarations and the opening of the Conowingo Dam along the Susquehanna River. When record-breaking rainfall forced officials to open the floodgates of the dam in July 2018 to prevent flooding, a large amount of debris was carried with it. Although difficult to quantify, researchers believe the amount and impact of debris was significant, especially since the Susquehanna River is the Chesapeake Bay's largest tributary and contributes about half of the bay's freshwater (about 19 million gallons per minute; Chesapeake Bay Program, 2019).

Regardless of the type of hazard to affect Maryland, debris removal projects have high costs in relation to other types of projects eligible for reimbursement through the Federal Emergency Management Agency (FEMA) following a presidentially declared disaster. Since 1962, Maryland has had 29 major disaster declarations, most of which have been the result of severe storms and flooding (Federal Emergency Management Agency [FEMA], n.d.). Maryland's vulnerability to such events highlights the importance of planning and preparedness for marine debris.

2.2 Prominent Debris Types

Some agency authorities are dependent on both the location and type of debris. Therefore, response to debris in Maryland waterways may vary depending on the debris type to be removed. Primary debris types generated after a disaster as defined by FEMA (2007) include the following:

- Chemical, biological, radiological, and nuclear-contaminated
- Construction and demolition (C&D)
- Electronic waste (e-waste)
- Household hazardous waste/material
- Infectious waste
- Oil and hazardous substances
- Putrescent debris
- Soil, mud, and sand
- Vegetative debris
- Vehicles and vessels
- White goods

A description of each debris type is included in the Definitions section of this document. It is difficult to predict the exact mix of marine debris that will be generated after a disaster since different types of hazard incidents generally result in different debris types. Table 1 includes an overview of typical debris streams for several natural hazards. Although Table 1 only covers natural hazards, man-made hazards such as an accident during waterway commerce are also concerns. Anthropogenic hazards are highly variable in both quantity and type of marine debris released.

Table 2. Typical debris streams for different types of hazard incidents. Data adapted from Federal Emergency Management Agency (2007).

		Typical Debris Streams								
		Construction and Demolition (C&D)	Hazardous Waste	Household Hazardous Waste	Personal Property/ Household Items	Putrescent	Soil, Mud, and Sand	Vegetative	Vessels and Vehicles	White Goods
Natural Hazards	Hurricanes/Tropical Storms	X	X	X	X	X	X	X	X	X
	Flooding	X	X	X	X	X	X	X	X	X
	Tornadoes/Wind Storms	X	X	X	X	X		X	X	X
	Earthquakes	X	X	X	X		X			X
	Winter/Ice Storms			X				X		
	Tsunamis	X	X	X	X	X	X	X	X	X

The type and quantity of marine debris generated after a disaster is highly dependent on land use and existing infrastructure along Maryland waterways. For example, protected undeveloped areas along the eastern shore are likely to generate vegetative debris, while developed properties in Baltimore City are likely to generate C&D debris. A land cover map for Maryland is depicted in Figure 2 and illustrates the distribution of land use types in the state, including developed lands. Increased development in the floodplain will increase the likelihood of marine debris following a natural hazard event.

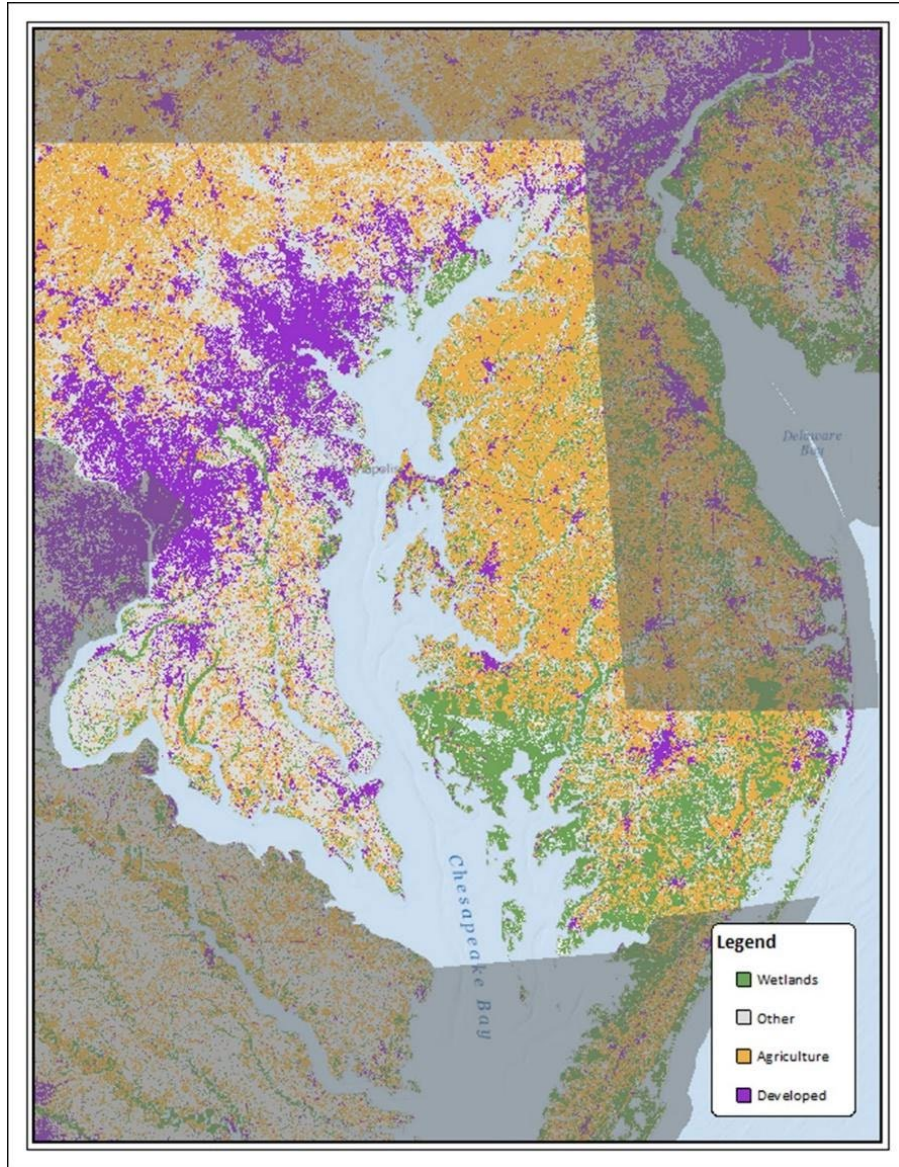


Figure 2. Land cover map for the coastal region of Maryland (National Oceanic and Atmospheric Administration, 2018).

3 Maryland Marine Waterway Debris Response Flowchart

The “Maryland Marine Debris Response Flowchart” included in this section provides a visual one-page representation of organization roles and responsibilities. The flowchart functions as a decision tree for marine debris response with color-coded endpoints. Yellow endpoints represent response to marine debris that is exposed to or has the potential to release oil, hazardous substances, pollutants, or contaminants. Blue endpoints represent response to marine debris that is not exposed to and does not have the potential to release oil, hazardous substances, pollutants, or contaminants. Endpoints within the green shaded area indicate that response may occur under Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) authorities and/or funding.

For detailed information regarding individual organization roles, responsibilities, and authorities, see [Section 4](#).

Maryland Marine Debris Response Flowchart

Purpose

This flowchart functions as a decision tree for marine debris response with color-coded endpoints. It is designed to inform response to debris that enters a waterway following a natural or anthropogenic incident and poses a threat to the natural or built environment. This may include shoreline and wetland debris and debris in some inland, non-tidal waterways.

Acronyms

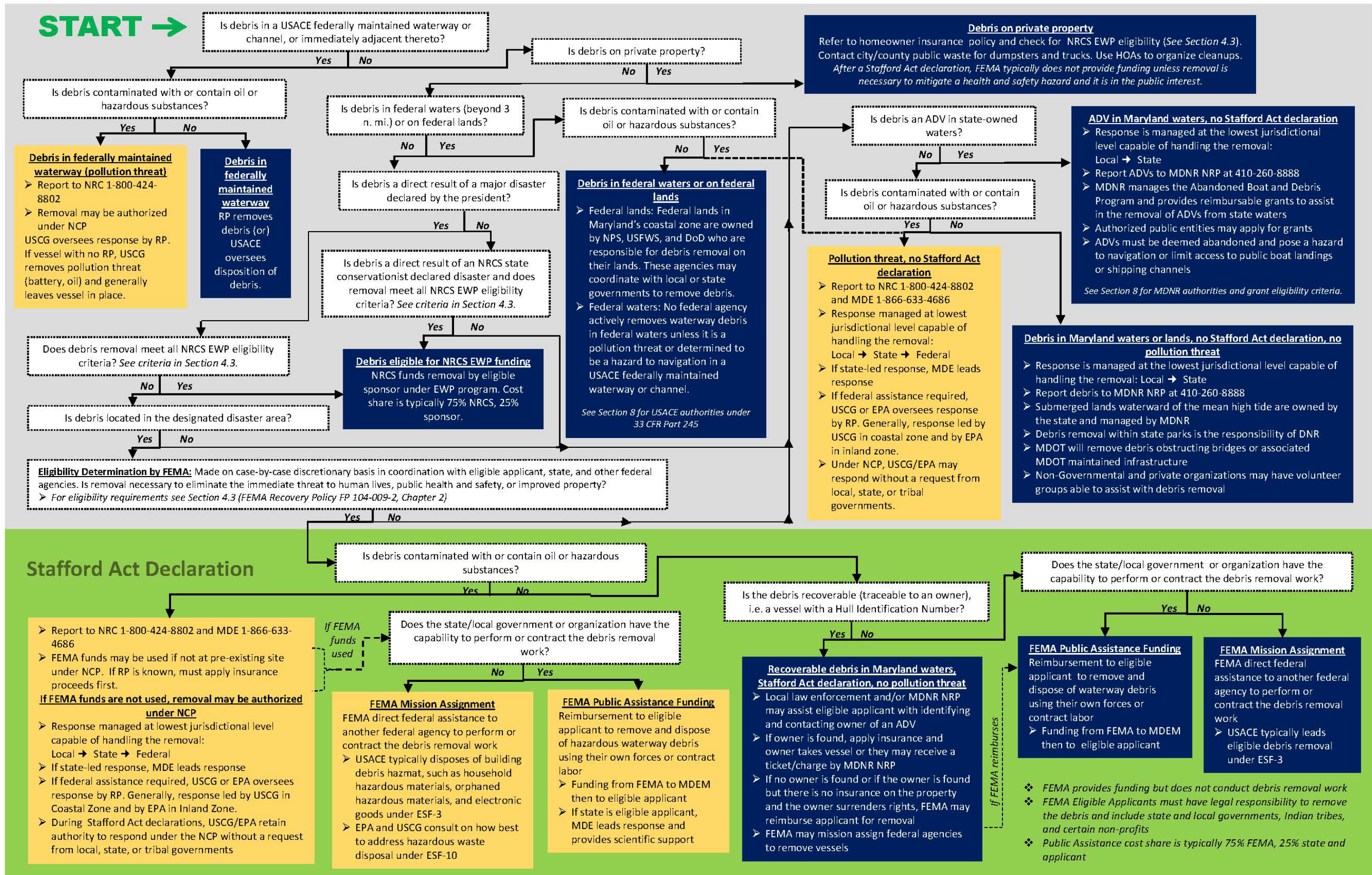
ADV – Abandoned and Derelict Vessel
DoD – U.S. Department of Defense
EPA – U.S. Environmental Protection Agency
ESF – Emergency Support Function
EWP – Emergency Watershed Protection
FEMA – Federal Emergency Management Agency
HOA – Home Owner's Association

MDEM – Maryland Department of Emergency Management
MDE – Maryland Department of the Environment
MDNR – MD Department of Natural Resources
MDOT – Maryland Department of Transportation
NCP – National Oil & Hazardous Substance Contingency Plan
NPS – National Park Service

NRC – National Response Center
NRCS – Natural Resources Conservation Service
NRP – Maryland Natural Resources Police
RP – Responsible Party (Owner, Operator, Lessee)
USACE – U.S. Army Corps of Engineers
USCG – U.S. Coast Guard
USFWS – U.S. Fish and Wildlife Service

Flowchart Key

- Response to marine debris that is exposed to or has the potential to release oil, hazardous substances, pollutants, or contaminants
- Response to marine debris that is not exposed to and does not have the potential to release oil, hazardous substances, pollutants, or contaminants
- Response occurring under Stafford Act authorities and/or funds



4 Roles and Responsibilities

In Maryland, response to marine debris incident is generally managed at the lowest jurisdictional level capable of handling the response and removal (MDEM, 2019). Initial response operations begin with local jurisdictions working with county or city emergency management agencies. Assistance from the state may be provided once local incident response resources are exhausted or resources are needed that the jurisdiction does not possess (MDEM, 2019). The federal government may supplement state and local response efforts when their resources have been exceeded or when unique capabilities are needed. Unlike the federal Emergency Support Function (ESF) concept, Maryland uses the State Coordinating Function (SCF) concept to apply state resources and assign state agency responsibilities. The Environmental Protection SCF and the Natural Resources SCF are the two most commonly applied SCFs during response to a marine debris incident, whereas ESF-3, Public Works and Engineering, and ESF-10, Oil and Hazardous Materials Response, are the most commonly applied federal support functions.

Local, state, and federal agency roles and responsibilities as they relate to marine debris response are outlined in the following sections followed by responsibilities of private landowners, volunteer organizations, and non-governmental organizations (NGOs). For a visual one-page representation of agency roles and responsibilities, see “Maryland Marine Debris Response Flowchart” in [Section 3](#). For a map defining agency jurisdictional authorities, see [Section 4.6](#). Additionally, response capabilities of each agency and information regarding agency contacts can be found in Appendices [8.3](#) and [8.4](#), respectively.

4.1 Local Agency Responsibilities

- May act as first responders to reports of marine debris incidents that impact any of Maryland’s 16 coastal counties or the city of Baltimore
- City and county emergency management agencies are the lead local agencies for emergency planning, preparedness, response, and recovery
- May declare a local state of emergency to enable jurisdiction to jurisdiction resource sharing outside of normal mutual aid (MDEM, 2019)
- Local law enforcement officers may lead the investigation to identify the owner of abandoned vessels
- May serve as project sponsor and/or receive debris removal funding from the Natural Resources Conservation Service (NRCS) Emergency Watershed Protection (EWP) Program if specific criteria are met. See [Section 4.3 Natural Resources Conservation Service](#) for EWP eligibility criteria.

Baltimore Region Disaster Debris Planning Task Force

- A network of local, regional, state, and federal debris stakeholders within the University of Maryland’s Center for Health and Homeland Security Baltimore Urban Area Homeland Security Work Group
- Involved in planning, organizing, training, and exercising for all types of disaster debris within the Baltimore regional area
- Uses funds from the Baltimore Urban Area Homeland Security Work Group to support debris exercises

4.2 State Agency Responsibilities

Maryland Department of Emergency Management (MDEM)

- Participates in the Baltimore Regional Disaster Debris Planning Task Force
- Maintains a comprehensive statewide system of emergency management and coordinates with federal, state, county, and municipal governments, nonprofit organizations, and private agencies that have a role in emergency management
- Activates and staffs the State Emergency Operations Center (SEOC) when an emergency or disaster situation develops within the state
- Conducts comprehensive assessments of threats to the state to eliminate or reduce risk and vulnerability (MDEM, 2016)
- Maintains the *Maryland 2016 Hazard Mitigation Plan* and the *Maryland Consequence Management Operations Plan* (MDEM, 2016; MDEM, 2019)
- Following a Stafford Act declaration, serves as coordination point between FEMA and state and local eligible applicants
 - Serves as FEMA grantee and administers public assistance funding to eligible applicants
 - Assists state agencies and local governments in the preparation and submission of federal disaster assistance applications
- May pre-position emergency services resources to augment anticipated response efforts (MDEM, 2019)
- Provides subject matter expertise for governmental and non-governmental debris response operations
- Notifies NGO partners that an incident has the potential to occur and informs the community of ways assistance may be needed or requested (MDEM, 2019)
- Maintains a list of offers of assistance from NGO organizations and resources which may be available to assist in response operations (MDEM, 2019)

Maryland Department of the Environment (MDE)

- Participates in the Baltimore Regional Disaster Debris Planning Task Force
- Conducts routine environmental monitoring for threats and hazards
- Provides subject matter expertise for environment-specific threats or hazards that may impact the state (MDEM, 2019)
- Determines the potential environmental impact of a threat and recommends measures to limit adverse impacts to the state (MDEM, 2019)
- Approves temporary debris staging sites

Land and Materials Administration

Oil Control Program

- Regulates all oil-related activities in the state
- When there is a release of oil into the environment, leads response and oversees the cleanup
- Maintains a 24-hour line for reporting oil spills in Maryland

Water and Science Administration

Wetlands and Waterways

- Implements the Wetlands and Waterways Program, which regulates the draining, dredging, and filling of tidal and nontidal wetlands and waterways
- Maintains the *Maryland State Wetland Conservation Plan*, which aims to increase the efficiency and effectiveness of wetlands regulation and management in Maryland

- Handles permit applications for piers, docks, marinas, channel dredging, and any other activities that use, encroach on, or disturb tidal wetlands owned by the state
- Serves as a clearinghouse and sends copies of permit applications to other state and federal agencies that might have jurisdiction or issues related to permits for a project. Maintains a joint permit application process with U.S. Army Corps of Engineers (USACE).
- For additional information on MDE permit and compliance requirements, see [Section 5](#)

Sediment, Stormwater and Dam Safety

- Implements the Stormwater Management Program, which aims to reduce the adverse impacts of development on stormwater runoff
- Implements the Dam Safety Program, which ensures that all dams in Maryland are designed, constructed, operated, and maintained safely to prevent failures

Maryland Department of Natural Resources (MDNR)

- Serves as the lead agency for the Natural Resources SCF
- Participates in the Baltimore Regional Disaster Debris Planning Task Force
- Coordinates with and/or establishes relationships with natural resources sector partners
- Provides subject matter expertise for natural resources (MDEM, 2019)
- Identifies areas of the state likely to be impacted by threats or hazards, including key natural resource areas, and determine ways to limit impact (MDEM, 2019)
- Maintains the AccessDNR app, which includes boating and fishing regulation guides, maps of water access sites, and state park activities and locations

Chesapeake and Coastal Service

- Serves as the lead agency for implementing the Coastal Zone Management Act to ensure proper management of Maryland's coast and Chesapeake Bay watershed through local, regional, and state agency partnerships
- Houses and maintains geospatial products and services, such as Geographic Information System (GIS) data and interactive maps
 - The Coastal Atlas is an online mapping and planning tool that allows state and local decision-makers to explore data for coastal and ocean planning activities
- Administers the Chesapeake and Atlantic Coastal Bays Trust Fund, which funds projects targeting water quality, watershed restoration, and protection projects to reduce nonpoint source pollution
- Manages the Chesapeake Bay National Estuarine Research Reserve and associated Stewardship Program to protect the environment through conservation and restoration
- Manages state submerged lands waterward of the mean high tide line

Fishing and Boating Services

- Designate and mark navigation channels and natural resource conservation areas
- Conduct ice breaking operations to ensure year-round commerce
- Manage the Maryland Abandoned Boat and Debris Program
 - Consists of one vessel dedicated to removing hazards to navigation and abandoned vessels
 - Provides reimbursable grants and expertise to assist public agencies in the removal of abandoned boats and debris from state waters

- Funded from the Maryland Waterway Improvement Fund, which is generated from the onetime 5% excise tax paid to the state when a boat is purchased and titled in Maryland

Natural Resources Police (NRP)

- May receive the first reports of waterway debris through the 24-hour Natural Resources Emergency or Assistance line.
- Enforces state and federal commercial and recreational fishery laws and regulations
- Conducts search and rescue operations on all state waterways, responds to emergency calls, enforces boating safety laws, and investigates boating accidents
- May lead or assist investigation to identify an owner for an abandoned or derelict vessel
- May issue tickets or penalties for derelict vessels

Park Service

- Manages 72 state parks on 137,716 acres of land, including several areas that lie in part along the Chesapeake Bay
- Responsible for debris removal within the boundaries of state parks

Maryland Department of Planning (MDP)

Maryland Historical Trust (MHT)

- Serves as Maryland's State Historic Preservation Office (SHPO)
- Reviews proposed debris removal activities that involve a state or federal agency directly or through funding and/or issuance of permits or licenses for effects on historic properties in compliance with the Maryland Historical Trust Act and the National Historic Preservation Act
- For additional information on MHT compliance requirements, see [Section 5](#)
- Maintains the Maryland Inventory of Historic Places
- Provides financial assistance through grants and tax credits for historic preservation activities and projects

Maryland Department of Transportation (MDOT)

- Serves as the lead agency for the Transportation SCF
- Participates in the Baltimore Regional Disaster Debris Planning Task Force
- Coordinates the removal of debris from all MDOT-maintained transportation facilities and infrastructure
- Conducts threat and hazard monitoring for potential impacts to transportation networks
- Disseminates threat and hazard awareness information to state watch centers

Port Administration (or Port of Baltimore)

- Operates the Port of Baltimore (Maryland Department of Transportation, n.d.)
- May request assistance from NOAA's Navigation Response Team (NRT) to survey ports and near-shore waterways to identify dangerous objects or changes in water depth following a disaster

4.3 Federal Agency Responsibilities

Animal and Plant Health Inspection Service

- Veterinary Services program provides for removal and burial of diseased animal carcasses

- Manages Plant Protection and Quarantine program to reduce the risk of introduction and spread of invasive species through planning, surveillance, quick detection, and containment

Bureau of Safety and Environmental Enforcement

- Manages a Marine Trash and Debris Program to eliminate debris associated with oil and gas operations on the Outer Continental Shelf
- Regulates marine trash and debris for oil and gas operations and renewable energy development on the Outer Continental Shelf
- Enforces requirement that items be clearly marked to identify the owner and items lost overboard be recorded, reported, and retrieved if possible
- Requires annual training of offshore oil and gas workers to reduce marine debris

Farm Service Agency (FSA)

- Emergency Conservation Program (ECP) helps farmers repair damage to farmland caused by natural disasters, such as
 - Debris removal from farmland
 - Grading, shaping, or leveling damaged land
- Up to 75% of the cost to implement emergency conservation practices can be provided to farmers. Qualified limited resource producers may earn up to 90% cost-share.
- Locally-elected FSA County Committee is authorized to implement ECP and determine if land is eligible for ECP
- Farmers should inquire with their local FSA county office regarding ECP enrollment periods, which are established by FSA county committees

Federal Emergency Management Agency (FEMA), Region III

- Participates in the Baltimore Regional Disaster Debris Planning Task Force
- Under the Stafford Act, provides reimbursement funding for eligible debris removal from navigable waterways (non-federally maintained) or wetlands during presidential major disaster declarations when another federal agency does not have authority to fund the activity
 - Provides funding to eligible applicants at a typical cost share of 75% FEMA, 25% state and eligible applicant
 - Issues mission assignments to other federal agencies for technical assistance, federal operations support, or to perform or contract debris removal when local and state capabilities are exceeded
- Makes eligibility determinations for debris removal on a case-by-case discretionary basis in coordination with the eligible applicant, state, and other federal agencies
 - Debris removal must be necessary to eliminate the immediate threat to life, public health and safety, or improved property (FEMA, 2020)
 - For navigable waterways, debris removal is limited to a max depth of 2 feet below the low tide draft of the largest vessel that utilized the waterway prior to the incident. Any debris below this zone is not eligible unless it is necessary in order to remove debris extending upward into an eligible zone (FEMA, 2020).
 - For non-navigable waterways, including natural waterways, debris removal is only eligible to the extent that it is necessary to eliminate an immediate threat including the following: if the debris obstructs, or could obstruct, intake structures; if the debris could cause damage to structures; or if the debris is causing, or could cause, flooding to property during the occurrence of a 5-year flood (a flood that has a 20% chance of occurring in any given year; FEMA, 2020)

- Employs debris specialists that can be mobilized to assist eligible applicants with debris management
- May reimburse costs for use of side scan sonar that identifies eligible submerged debris and sunken vessels
 - The applicant is responsible for identifying debris deposited by the incident that poses an immediate threat. Random surveys to look for debris, including surveys performed using side scan sonar, are not eligible. However, if the applicant identifies an area of debris impacts and demonstrates the need for a survey to identify specific immediate threat, FEMA may provide Public Assistance funding for the survey in that location, including the use of side scan sonar.
- Provides geospatial support and hosts data, paper maps, and live data collection with interactive mapping through a shared group on ArcGIS Online
- FEMA must ensure compliance with federal laws, regulations, and executive orders prior to funding debris removal work. For additional information on permitting and compliance requirements, see [Section 5](#).

National Oceanic and Atmospheric Administration (NOAA)

National Marine Fisheries Service (NOAA Fisheries)

Office of Habitat Conservation and Office of Protected Resources

- Reviews proposed debris removal activities that involve a federal agency (directly or through funding and/or issuance of a federal permit) for compliance with Magnuson-Stevens Fisheries Conservation and Management Act and Endangered Species Act (ESA)
- For additional information on NOAA Fisheries compliance requirements, see [Section 5](#)

National Ocean Service

Office of Coast Survey

- Mobilizes NRT to survey ports and near-shore waterways for sunken debris, changes in water depth, and hazards to navigation following a disaster

Office of National Geodetic Survey

- Acquires and rapidly disseminates a variety of spatially-referenced remote-sensing datasets to support national emergency response. Imagery is obtained using high resolution digital cameras, film-based aerial camera systems, Light Detection and Ranging (LIDAR), and thermal and hyperspectral imagers.

Office of Response and Restoration

- Manages the Environmental Response Management Application (ERMA), a web-based geographic information system (commonly known as GIS) that includes an [online](#) dynamic “Maryland Marine Debris Response Map” (NOAA, 2021)
- Serves as scientific support coordinators to coordinate application of NOAA assets and services during emergencies to help the federal on-scene coordinator (FOSC) make timely operational decisions
- Provides scientific support for debris response planning and operations, including baseline information, debris behavior, debris impact, debris survey and detection protocols, removal best management practices (BMPs), disposal guidance, and information management
- May provide onsite support to internal and external partners at an incident command post or joint field office if there is a need for marine debris or NOAA expertise
- Funds marine debris assessment and removal projects through grants or congressional supplemental funding
- Facilitates inter-agency planning and coordination for responses to marine debris events

- Develops external communications, such as talking points appropriate for the public, informational graphics, etc., to ensure the public and partner agencies understand and act on sound science and information critical to response and recovery operations
For events determined by the NOAA Administrator to be severe marine debris events, may develop interagency plans, assess composition volume and trajectory of associated marine debris, and estimate potential impacts to the economy, human health, and navigation safety

National Park Service (NPS)

- Manages 18 national areas in the state of Maryland, including the Assateague Island National Seashore, which shares a border with Virginia
- May conduct incident waterway debris assessment and cleanup within their jurisdiction in coordination with county, state, and other federal partners
- Organizes volunteer cleanups on NPS lands when possible
- Provides BMPs to protect NPS lands and associated resources
- For a map of areas managed by NPS in Maryland, see [Section 4.6](#)

Natural Resources Conservation Service (NRCS)

- When funding is available, provides emergency financial and technical assistance through the Emergency Watershed Protection (EWP) Program for the following: to protect from additional flooding or soil erosion; to reduce threats to life and/or property from watershed impairment, including sediment and debris removal in floodplains and uplands; and to restore the hydraulic capacity to the natural environment to the maximum extent practical
 - Help communities address watershed impairments that pose imminent threats to lives and property as a result of natural disasters
 - Typical cost share is 75% NRCS and 25% project sponsor
 - Public and private landowners are eligible for assistance but must be represented by a project sponsor, including state government, legal subdivisions of the state, such as a city, county, water management district, drainage district, or any Native American tribe or tribal organization
 - EWP Program eligibility criteria include the following:
 - Marine debris is a direct result of either a major disaster declared by the president or of an NRCS State Conservationist declared natural disaster
 - Marine debris is a threat to life and/or property
 - Imminent threat was created by this event
 - Recovery measures are for runoff retardation or soil erosion prevention
 - Event caused a sudden impairment in the watershed
 - Economic, environmental, and social documentation are adequate to warrant removal action
 - Proposed removal action is technically viable and environmentally defensible

U.S. Army Corps of Engineers (USACE), Baltimore District

- Maintains pre-event contracts for activities within the Baltimore District area of responsibility and has the ability to access contract vehicles maintained by other USACE districts
- May request assistance from NOAA's NRT to survey ports and near-shore waterways
- Participates in the Baltimore Regional Disaster Debris Planning Task Force

Emergency Operations

- Serves as lead federal agency in support of FEMA under ESF-3 Public Works and Engineering
- Following a Stafford Act declaration, may lead eligible debris removal from navigable waterways (non-federally maintained) and wetlands if FEMA mission assigns another federal agency to perform or contract debris removal and surveying

Navigation

- Serves as lead federal agency for conducting surveys within the federally authorized channel for changes in water depth and hazards to navigation for commercial, recreational, and military use
- Responsible for operation, maintenance, and debris removal from federally maintained waterways and channels within Baltimore District. For a map of USACE federally authorized and maintained waterways and channels in Maryland, see [Section 4.6](#).
- May use side-scan, multi, or single beam sonar to identify sunken debris
- May remove abandoned vessels or other debris from federally maintained navigable channels if an owner or responsible party (RP) cannot be identified and debris items are determined to be obstructions to navigation

Regulatory Program

- Baltimore District issues permits for debris removal within waterways and wetlands throughout the state. For additional information on USACE permitting and compliance requirements, see [Section 5](#).

U.S. Coast Guard (USCG) District 5, Sector Maryland-National Capital Region

- Participates in the Baltimore Regional Disaster Debris Planning Task Force
- Removal of debris in waterways is only conducted by USCG when the debris has been contaminated with oil or a hazardous material
- Responds to oil discharges or threats of a discharge within navigable waterways. Responds to hazardous material releases or threats of release into the environment within the coastal zone as defined in the *Upper Chesapeake Bay Estuary Area Contingency Plan (ACP)*; U.S. Coast Guard [USCG], 2012).
 - Removal actions generally limited to removing recoverable oil or hazardous materials from navigable waterways, its tributaries, or into the environment within the coastal zone. May also eliminate the substantial threat of a discharge of oil or HAZMAT into waterways or the environment within the coastal zone.
 - Under normal response operations involving vessels, the oil or HAZMAT will be removed and the vessel is left in place. Attempts are made to coordinate with the RP to refloat the vessel or remove it to prevent future oil or HAZMAT discharge. In extreme cases where the vessel remaining in the water presents “an imminent and substantial endangerment to public health and welfare, and the environment,” USCG may begin a process to permanently remove the vessel (40 CFR § 300.130).
- Serves as lead federal agency (FOSC) under ESF-10 Oil and Hazardous Materials in the ACP coastal zone
 - Directs response in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP)
 - Coordinates with state, tribal, and territorial governments and oversees response by a RP

- Unlike response under a Stafford Act declaration, USCG may respond without a request from local, state, or tribal governments under the NCP. During Stafford Act declarations, USCG retains the authority to take action under the NCP.
- Maintains a year-round, 24-hour telephone watch through the National Response Center (NRC) for reporting of oil and hazardous material releases.
- Establishes a safety zone around hazards to navigation and broadcasts maritime safety warnings including the Broadcast Notice to Mariners and the Local Notice to Mariners to warn of debris obstructing watercourse or creating hazards to navigation within federally maintained waterways. USCG also notifies USACE of any hazards to navigation within federally maintained waterways.
- Following a Stafford Act declaration, may lead eligible debris removal from navigable waterways (non-federally maintained) and wetlands if FEMA mission assigns another federal agency to perform or contract debris removal and surveying
- May request assistance from NOAA's NRT to survey ports and near-shore waterways
- The Captain of the Port sets conditions used to alert the maritime community and affects changes in port operations necessary to prepare for tropical cyclone activity. This may include restricting or closing all port traffic.
- For a map of USCG sector boundaries and the ACP coastal-inland zone boundary in Maryland, see [Section 4.6](#)

U.S. Environmental Protection Agency (EPA), Region III

- Participates in the Baltimore Regional Disaster Debris Planning Task Force
- Responds to oil and hazardous substance releases or threats of release in waterways within the inland zone as defined in the *Upper Chesapeake Bay Estuary ACP* (USCG, 2012). For a map of the ACP coastal-inland zone boundary in Maryland, see [Section 4.6](#).
- Serves as lead federal agency (FOSC) under ESF-10 Oil and Hazardous Materials in the ACP inland zone and in incidents affecting both inland and coastal zones
 - Directs response in accordance with the NCP
 - Coordinates with state, tribal, and territorial governments and oversees response by RP
 - Unlike response under a Stafford Act declaration, EPA may respond without a request from local, state, or tribal governments under the NCP. During Stafford Act declarations, EPA retains the authority to take action under the NCP.
- Following a Stafford Act declaration, may lead removal of contaminated waterway debris under a FEMA mission assignment to perform or contract the work, as pursuant to a Memorandum of Understanding between FEMA, EPA, USCG, and USACE

U.S. Fish and Wildlife Service (USFWS)

Ecological Services Program

- Reviews proposed debris removal activities that involve a federal agency (directly or through funding and/or issuance of a federal permit) for compliance with ESA and Coastal Barrier Resources Act (CBRA)
- For additional information on USFWS compliance requirements, see [Section 5](#)

National Wildlife Refuges (NWR)

- Manages five NWRs in Maryland, all of which are within Maryland's coastal zone
 - NWRs include: Blackwater NWR, Eastern Neck NWR, Martin NWR, Patuxent NWR, and Susquehanna NWR
- Coordinates and manages marine debris assessment and cleanup in NWRs

- May coordinate with federal, state, and local partners to remove marine debris within their jurisdiction
- Provides BMPs to protect listed threatened or endangered land and freshwater species, certain marine species, and their critical habitat
- For a map of NWRs in Maryland, see [Section 4.6](#)

U.S. Navy

Supervisor of Salvage and Diving

- Manages and provides technical assistance for salvage, deep search and recovery, towing, and oil spill response operations
- Accesses and coordinates the U.S. Navy’s hydrographic survey assets and capabilities
- Maintains an array of remotely operated vehicles, oil spill response, and salvage equipment
- Exercises and manages regional standing emergency salvage contracts to quickly draw upon the required resources of the commercial salvage industry (U.S. National Response Team, 2020)

4.4 Private Landowners

- May report marine debris incidents to local emergency management agency or MDEM to begin a coordinated response.
- May complete right-of-entry agreements with entities conducting private property debris removal or using private property as an access point
- After a Stafford Act declaration, debris removal from private property or privately-owned waterways and banks is generally the responsibility of the property owner and not eligible for FEMA funding unless its removal is necessary to mitigate a health and safety threat and is in the public interest (FEMA, 2020)
- May contact city or county public waste for dumpsters and trucks. May also contact Home Owners Association (HOA) to organize cleanups.
- May be eligible for debris removal funding from NRCS EWP Program if represented by a project sponsor and specific criteria are met. See [Section 4.3 Natural Resource Conservation Service](#) for EWP eligibility criteria.

4.5 Volunteer and Non-Governmental Organizations

- Certain private nonprofit organizations that serve a public function and have the legal responsibility to remove the debris may serve as an eligible applicant and receive public assistance reimbursement funding from FEMA to perform or contract marine debris removal following a Stafford Act declaration (FEMA, 2020)
- Non-governmental organizations may provide debris removal assistance or logistical support through funded projects and programs

4.6 Agency Jurisdiction Map

The “Maryland Marine Debris Response Map” available [online](#) in ERMA (NOAA, 2021), displays relevant agency jurisdiction boundaries in Maryland’s 16 coastal counties and the city of Baltimore. Figure 3 shows a screenshot of the online Maryland map with a legend on the right-hand side. After a marine debris incident, the agency (or agencies) responsible for removing debris will vary depending on where the debris is located. This map includes information that stakeholders identified as important in determining jurisdiction within the state.

For detailed information regarding local, state, and federal agency roles and responsibilities, see Sections 4.1, 4.2, and 4.3, respectively. For a visual one-page representation of agency roles and responsibilities, see Section 3.

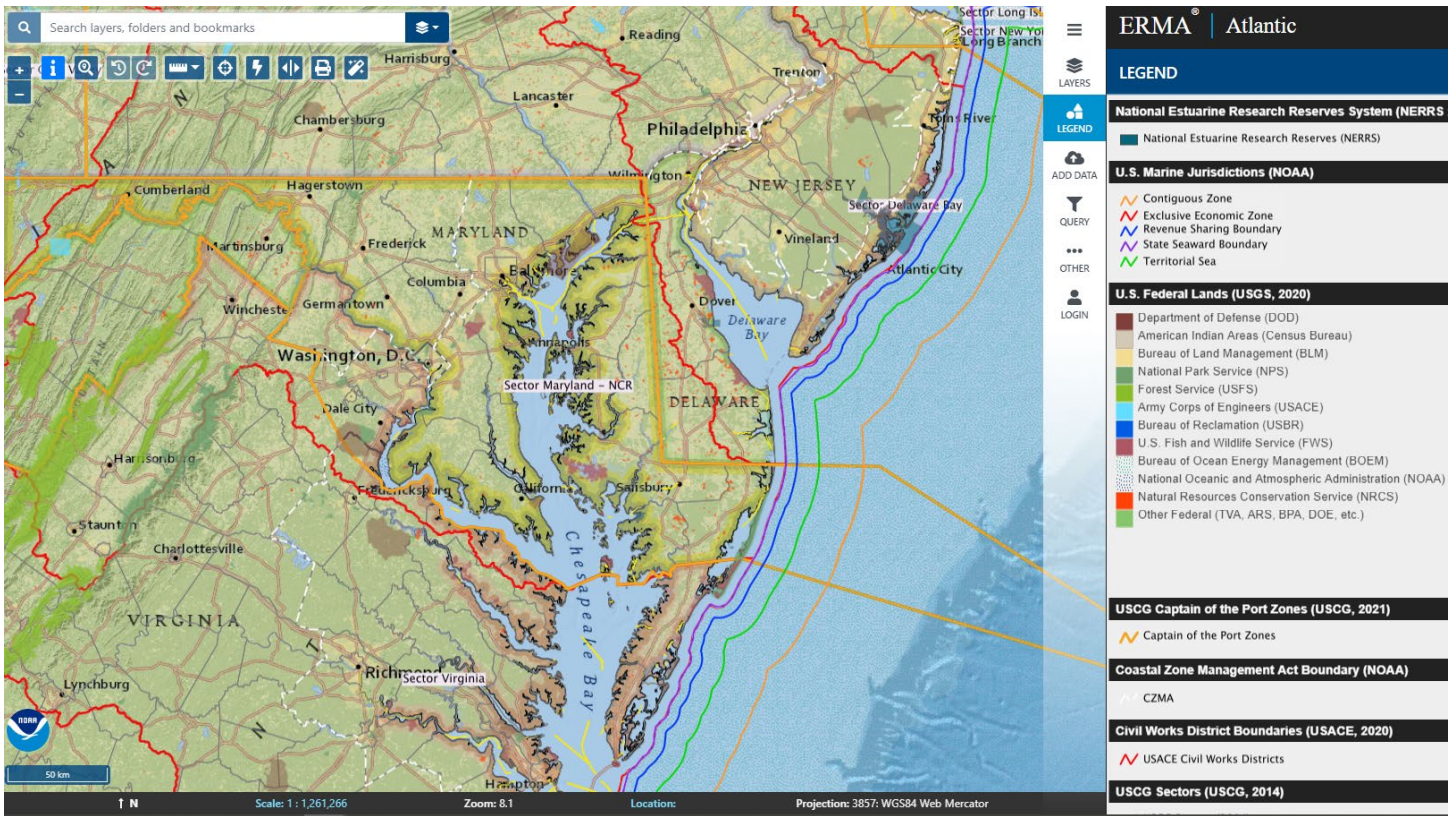


Figure 3. The Maryland Marine Debris Response Map in the Environmental Response Management Application (ERMA). Note description of included layers in legend on right side bar.

5 Permitting and Compliance Requirements in Maryland

Before marine debris removal work can begin, organizations responsible for removal must meet certain permitting and compliance requirements. While the organization or individual conducting the debris removal work is responsible for obtaining necessary permits—such as a U.S. Army Corps of Engineers (USACE) permit—it is the responsibility of the lead federal agency to ensure compliance with the National Environmental Policy Act (NEPA) and to consult with tribal and resource agencies including the Maryland Department of the Environment (MDE), Maryland Historical Trust (MHT), U.S. Fish and Wildlife Service (USFWS), and National Oceanic and Atmospheric Administration (NOAA).

During response under a Stafford Act declaration, the Federal Emergency Management Agency (FEMA) provides funding to applicants for debris removal and is therefore considered the lead federal agency responsible for tribal and resource agency coordination. Federal emergency support function (ESF) 11 Agriculture and Natural Resources may be activated for Stafford Act incidents requiring a coordinated federal response to protect natural and cultural resources and historic properties (FEMA, 2008). If marine debris removal is conducted without federal funding and there are no federal agencies involved in removal activities, USACE is considered the lead federal agency as the permitting agency (if a permit is required).

A description of individual agency requirements and authorities is outlined below and is summarized in the “Permitting and Compliance for Marine Debris Removal in Maryland” handout in [Section 5.3](#). Information about agency contact information can be found in [Appendix 8.4](#), and select agency authorities are presented in [Appendix 8.1](#).

5.1 State Agency Requirements

Maryland Department of the Environment (MDE)

Water and Science Administration

Wetlands and Waterways

- Issues tidal wetlands permits for debris removal activities on state-owned wetlands (including state-owned submerged lands) that negatively impact the environment
- A tidal wetlands permit may be required if the proposed debris removal project involves excavating, dredging, the discharge of fill or dredge material, or involves structures or work impacting wetlands
 - MDE and USACE have a joint permit application process. Applications are submitted to MDE and federal and state review will occur concurrently.

Maryland Department Natural Resources (MDNR)

Chesapeake and Coastal Service

- The federal consistency section reviews federal actions (including funding assistance applications) for consistency with federally-approved laws and policies of the Chesapeake and Coastal Service Program

Maryland Department of Planning (MDP)

Maryland Historical Trust (MHT)

- Administers duties of the State Historic Preservation Office (SHPO) and assists state and federal agencies in compliance with the Maryland Historical Trust Act of 1985 and National

Historic Preservation Act, which require state and federal agencies to consider potential effects on historic properties as defined in state and federal law

- If a waterway debris removal project in Maryland involves a state or federal agency directly or through funding and/or issuance of permits or licenses, it is the responsibility of the lead state and/or federal agency to consult with MHT

5.2 Federal Agency Requirements

Federal Emergency Management Agency (FEMA)

- Serves as lead federal agency responsible for tribal and resource agency coordination when providing funding to applicants for debris removal under a Stafford Act declaration
 - Ensures applicant's debris removal operations avoid impacts to floodplains, wetlands, federally listed threatened and endangered species and their critical habitats, and historic properties (including maritime or underwater archaeological resources if waterways are impacted)
 - Requires applicant to stage debris at a safe distance from property boundaries, surface water, wetlands, structures, wells, and septic tanks with leach fields
 - May require site remediation at staging sites and other impacted areas upon completion of debris removal and disposal

National Environmental Policy Act (NEPA)

- NEPA requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions
- If a marine debris removal project involves a federal agency (directly or through funding and/or issuance of a federal permit), it is the responsibility of the lead federal agency to ensure NEPA compliance. If multiple federal agencies play a major role in the debris removal, then there may be a joint lead agency that shares the lead agency's responsibility for management of the NEPA process (Council on Environmental Quality, 2007).
 - FEMA is provided with statutory exclusions under Section 316 of the Stafford Act, which exempts debris removal from the NEPA review process
 - Therefore, the NEPA review process is not required when FEMA is providing funding for waterway debris removal under a Stafford Act declaration. However, compliance with all other federal, state, and local environmental laws and regulations is still required, even when a project is statutorily excluded from NEPA review.
- For marine debris removal operations, the impact of removal must be evaluated to minimize environmental and ecological damage to the maximum practical extent. In some cases, debris removal may be more environmentally damaging than leaving the debris in place.

National Oceanic and Atmospheric Administration (NOAA)

National Marine Fisheries Service (NOAA Fisheries)

- If a marine debris removal project in Maryland involves a federal agency (directly or through funding and/or issuance of a federal permit), it is the responsibility of the lead federal agency to coordinate with NOAA Greater Atlantic Regional Fisheries Office prior to beginning debris removal work to ensure compliance with the Endangered Species Act (ESA) and Magnuson-Stevens Fisheries Conservation and Management Act
 - ESA directs all federal agencies to ensure the actions they take, including those they fund or authorize, do not jeopardize the continued existence of any listed endangered or threatened species or result in the destruction or adverse

modification of designated critical habitat unless an exemption has been granted. Generally, NOAA Fisheries manages marine and anadromous species while USFWS manages land and freshwater species and certain marine species such as manatee. If a federal agency determines their activities or actions will affect listed species or designated critical habitat—even if the effects are expected to be beneficial—they must consult with NOAA Fisheries or USFWS. See NOAA Greater Atlantic Regional Fisheries Office’s endangered species [web page](#) for an up to date Maryland ESA-listed marine species list (NOAA, n.d.-b).

- Magnuson-Stevens Fisheries Conservation and Management Act directs all federal agencies to ensure the actions they take, including those they fund or authorize, do not adversely affect essential fish habitat (EFH). If a federal agency determines their activities or actions may adversely affect EFH, they must consult with NOAA Fisheries. See NOAA’s online [essential fish habitat mapper](#) to view maps for EFH (NOAA, n.d.-a).
- Consultation during emergencies can be expedited so federal agencies can complete their critical missions in a timely manner while still providing protections to listed species and EFH
- Additional information on ESA and EFH consultations can be found on the NOAA Fisheries Section 7 [website](#) (NOAA, 2019b) and EFH assessment [website](#) (NOAA, 2019a), respectively

U.S. Army Corps of Engineers (USACE), Baltimore District

- USACE permit may be required for debris removal within waterways and wetlands if the activity involves dredging, the discharge of dredged or fill material, or involves structures or work impacting the navigability of a waterway. One or more permits may be needed depending on the scope of work to be conducted.
 - Applications are submitted to MDE, and both MDE and USACE review concurrently
- Permits that may be required include:
 - **Nationwide Permit 3: Maintenance.** Authorizes repair, rehabilitation or replacement structures or fills destroyed or damaged by storms, floods, fires or other discrete events. This permit may be issued for removal or maintenance of culverts, sediments, or debris accumulated around outfalls, bridges, etc.
 - **Nationwide Permit 22: Removal of Vessels.** Authorizes temporary structures or minor discharges of dredged or fill material required for the removal of wrecked, abandoned, or disabled vessels, or the removal of man-made obstructions to navigation
 - **Nationwide Permit 33: Temporary Construction, Access, and Dewatering.** Issued for temporary structures, work, and discharges necessary for construction activities or access fills
 - **Nationwide Permit 37: Emergency Watershed Protection and Rehabilitation.** Issued for work conducted under the NRCS EWP Program
 - **Nationwide Permit 38: Cleanup of Hazardous and Toxic Waste.** Issued for the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with legal or regulatory authority, other than activities undertaken entirely on a Superfund site
 - **Nationwide Permit 45: Repair of Uplands Damaged by Discrete Events.** Issued for activities associated with the restoration of upland areas damaged by storms, flood, or other discrete events
- In emergency situations, permitting procedures may be expedited and resource agency coordination may occur “after the fact” as opposed to before a permit is issued. This may

result in additional work by the applicant once the emergency and immediate threat has been mitigated.

- Navigation Section reviews permit applications when activities intersect with federally maintained waterways and channels, including levee systems

U.S. Fish and Wildlife Service (USFWS)

Ecological Services Program

- If a marine debris removal project in Maryland involves a federal agency (directly or through funding and/or issuance of a federal permit), it is the responsibility of the lead federal agency to coordinate with USFWS Chesapeake Bay Field Office prior to beginning debris removal work to ensure compliance with ESA and the Coastal Barrier Resources Act (CBRA)
 - ESA directs all federal agencies to ensure the actions they take, including those they fund or authorize, do not jeopardize the continued existence of any listed endangered or threatened species or result in the destruction or adverse modification of designated critical habitat unless an exemption has been granted. Generally, USFWS manages land and freshwater species and certain marine species such as manatee, while NOAA Fisheries manages marine and anadromous species. If a federal agency determines their activities or actions may affect listed species or designated critical habitat—even if the effects are expected to be beneficial—they must consult with USFWS or NOAA Fisheries. See USFWS's Information for Planning and Consultation [website](#) for an up to date list of Maryland's threatened and endangered land and freshwater species (U.S. Fish and Wildlife Service [USFWS], n.d.).
 - CBRA restricts federal expenditures and financial assistance that encourage development of coastal barriers so that damage to property, fish, wildlife, and other natural resources associated with the coastal barrier is minimized. The John H. Chafee Coastal Barrier Resources System (CBRS) is a collection of specific units of land and associated aquatic habitats that serve as barriers protecting the Atlantic, Gulf, and Great Lakes coasts. After a Stafford Act declaration, costs for debris removal and emergency protective measures in designated CBRS units may be eligible for reimbursement under FEMA's public assistance program provided the actions eliminate an immediate threat to lives, public health and safety, or protect improved property. A map of CBRS units in Maryland can be downloaded from USFWS's [website](#) (USFWS, 2015).
- For projects that do not involve federal permits or funding, USFWS consultation is not required, but is recommended. Harassing or harming ("taking") an endangered or threatened species or significantly modifying their habitat is still prohibited under ESA regardless of federal nexus involvement.
- Reviews may be expedited in emergencies, and USFWS staff may embed in response teams
- Each debris removal project is reviewed individually unless USFWS prepares a programmatic consultation. Under a programmatic consultation, all parties agree on certain conservation measures that must be implemented. If a marine debris removal project arises that does not fit the programmatic measures, then it must be reviewed individually.
- USFWS may provide BMPs that provide necessary protections while allowing projects to go forward
- If the proposed marine debris removal project will not impact listed threatened or endangered species, or if the federal consulting agency agrees to implement USFWS's recommendations, the consultation process is completed at the "informal" stage. However, if debris removal operations will adversely affect a listed species or critical habitat, the

federal consulting agency must initiate a "formal" consultation, a process which typically ends with the issuance of a biological opinion by USFWS (or NOAA Fisheries, if the ESA-listed species affected is under NOAA Fisheries' purview).

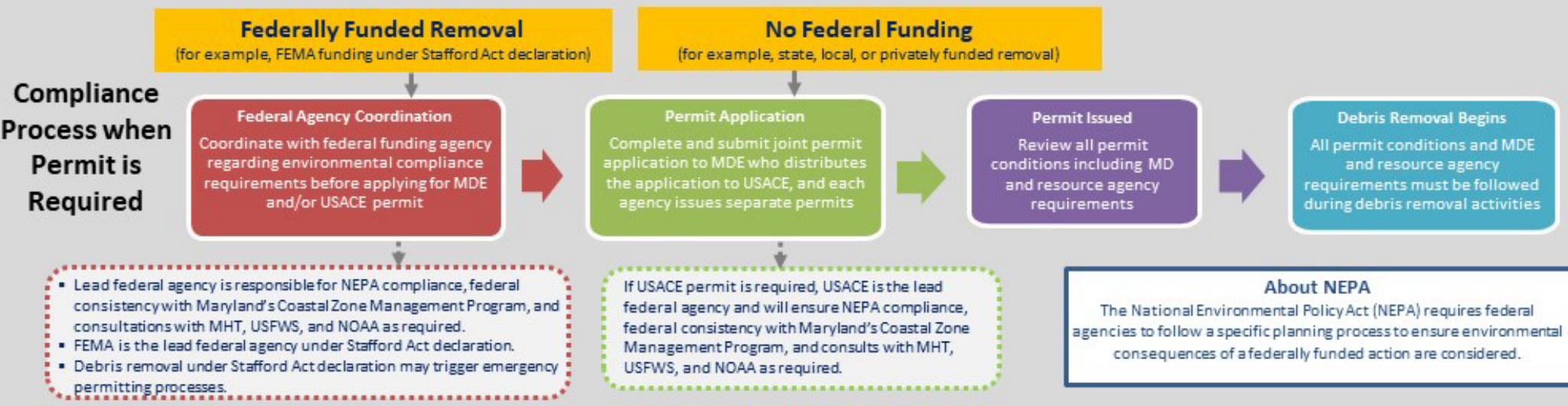
5.3 Permitting and Compliance for Marine Debris Removal in Maryland One-Pager

The "Permitting and Compliance for Marine Debris Removal in Maryland" handout on the following page synthesizes permitting and compliance requirements that must be met before waterway debris removal operations begin. The top portion of the one-pager outlines the process to follow to stay in compliance, while the bottom portion highlights specific state and federal agency requirements with general contact information.

For detailed information regarding individual state and federal requirements, see [Sections 5.1](#) and [5.2](#), respectively.

Permitting and Compliance for Marine Debris Removal in Maryland

- In Maryland's coastal zone, a Maryland Department of the Environment (MDE) tidal wetlands permit and/or a U.S. Army Corps of Engineers (USACE) permit may be required if debris removal involves excavating, dredging, the discharge of fill or dredge material, or involves structures or work impacting navigable waterways or wetlands.
- MDE and USACE have a joint permit application process. Applications are submitted to MDE and federal and state review occur concurrently.
- The **lead federal agency** is responsible for compliance with National Environmental Policy Act (NEPA), federal coastal consistency, and consulting with tribal and resource agencies including Maryland Historical Trust (MHT), U.S. Fish and Wildlife Service (USFWS), and National Oceanic and Atmospheric Administration (NOAA) Fisheries as required.



Agency Requirements and Legislation Details

<p>U.S. Army Corps of Engineers (USACE) Baltimore District Regulatory Program 410-962-3670</p>	<ul style="list-style-type: none"> ▪ Permit(s) that may be required for debris removal work within waterways and wetlands: <ul style="list-style-type: none"> ▪ NWP-3 Maintenance for removal/maintenance of culverts, sediments or debris accumulated around outfalls, bridges, etc. in wetland areas ▪ NWP-22 Removal of Vessels for removal of wrecked, abandoned, or disabled vessels or other man-made obstructions to navigation ▪ NWP-33 Temporary Construction, Access, and Dewatering for temporary structures, work, and discharges necessary for construction activities or access fills ▪ NWP-37 Emergency Watershed Protection & Rehabilitation for work done under NRCS's Emergency Watershed Protection program ▪ NWP-38 Cleanup Hazardous/Toxic Waste for containment, stabilization, or removal of hazardous or toxic waste not under CERCLA/NCP ▪ NWP-45 Repair of Uplands Damaged by Discrete Events for activities associated with the restoration of upland areas damaged by storms, floods, or other discrete events. 	<p>MD Department of the Environment (MDE) Wetlands and Waterways Program 410-537-3837</p>	<ul style="list-style-type: none"> ▪ Issues tidal wetlands permits for projects that may negatively impact any of these resources ▪ A tidal wetland permit may be required for debris removal projects that involve excavating, dredging, the discharge of fill or dredge material, or involves structures or work impacting wetlands. ▪ MDE and USACE have a joint permit application process. Permit applications are submitted through MDE and federal and state review occur concurrently.
<p>National Oceanic and Atmospheric Administration (NOAA) NOAA Fisheries ESA: 978-281-9328 EFH: 410-573-4559</p>	<ul style="list-style-type: none"> ▪ Consultation required if marine debris response involves federal permits and/or funding (USACE permit, FEMA funding, etc.) to comply with: <ul style="list-style-type: none"> ▪ Endangered Species Act (ESA) to ensure actions do not adversely affect listed threatened or endangered species or critical habitat for marine species ▪ Magnuson-Stevens Fisheries Conservation and Management Act to ensure actions do not adversely affect Essential Fish Habitat (EFH) 	<p>MD Historical Trust (MHT) Office of Preservation Services 410-697-9545</p>	<ul style="list-style-type: none"> ▪ Serves as the State Historic Preservation Office (SHPO) and assists state and federal agencies in compliance with the Maryland Historical Trust Act and the National Historic Preservation Act ▪ Consultation with MHT is required if marine debris response involves a state or federal agency directly or through funding and/or issuance of permits or licenses (MDE or USACE permits, MDEM or FEMA funding, etc.) and has potential to affect historic properties
		<p>U.S. Fish and Wildlife Service (USFWS) Chesapeake Bay Field Office 410-573-4599</p>	<ul style="list-style-type: none"> ▪ Consultation with Ecological Services Field Office required if waterway debris response involves federal permits and/or funding (USACE permit, FEMA funding, etc.) to comply with: <ul style="list-style-type: none"> ▪ Endangered Species Act (ESA) to ensure actions do not adversely affect listed threatened or endangered species or critical habitat for land and freshwater species and certain marine species such as manatee ▪ Coastal Barrier Resources Act (CBRA) to ensure actions do not encourage development on coastal barriers along the Atlantic coast

6 Maryland Marine Debris Response Challenges

Marine debris response challenges identified by stakeholders are outlined below, along with associated recommendations. These identified challenges will serve as future points of discussion and action for the Maryland marine debris response community. Potential opportunities for addressing response needs include table-top activities to exercise this *Guide*, response exercises that incorporate debris scenarios, and coordination meetings associated with this document's formal review.

6.1 Response Challenges and Recommended Actions in Maryland

The following gaps in response and associated recommendations are compiled based on stakeholder input to improve preparedness for response and recovery operations following a marine debris incident in Maryland. Recommended actions include logistics, policy, communication, and technology and resources actions to address gaps in response and meet pre- and post-event data needs.

6.1.1 Response Logistics

- **Challenge:** When severe storms cause dam failure, debris is transported across multiple jurisdictions
 - **Actions:**
 - Work to remove build-up of debris annually or on a regular basis
 - Coordinate across jurisdictions to plan for dam failures
- **Challenge:** Many landfills will not accept large vessels
 - **Actions:**
 - Identify requirements for specific disposal locations prior to an event, including the type of debris accepted at each location
 - Pre-plan to break down materials prior to disposal
- **Challenge:** It is difficult to determine end-state success (i.e. how to know when work is done and if it was successful), especially when debris is compounded across several events
 - **Action:** Encourage pre-storm and post-storm assessments and monitoring by local and state agencies
- **Challenge:** There is no one standard way to deal with a marine debris incident
 - **Actions:**
 - Link *Guide* content to existing debris management documents
 - Encourage the implementation of periodic marine debris-centric exercises in coordination with state and federal agencies, counties, and municipalities
 - Encourage entities hosting local planning meetings or conferences to invite relevant marine debris response agencies and organizations
- **Challenge:** Responding to and removing debris in ecologically sensitive areas may be harmful to local species or habitat
 - **Action:** Coordinate with local agencies and NGOs to educate about debris removal and prevention in sensitive areas

- **Challenge:** Derelict commercial fishing gear routinely washes up along ocean and bay shorelines
 - **Actions:**
 - Encourage development of state programs for marking derelict fishing gear
 - Pre-plan with local governments and municipalities to document and report derelict fishing gear that washes up in their jurisdiction

6.1.2 Policy

- **Challenge:** There is a lack of understanding at a local level of the differences between waterway ownership and jurisdiction versus responsibility for removal of debris in certain areas
 - **Actions:**
 - Encourage MDEM to promote the use of the Environmental Response Management Application (ERMA), which is an online mapping tool that integrates static and real-time data to assist environmental responders and decision makers
 - Collaborate with NOAA about the possibility of adding agency authorities and geographic jurisdictions as a bookmark in ERMA
 - *Note: This action has been completed. A link to Maryland's dynamic map can be found [here](#).*
 - Encourage entities hosting local planning meetings or conferences to invite relevant marine debris response agencies and organizations
 - For a static jurisdictional map of federal and state response agencies, see [Section 4.6](#)
- **Challenge:** It is difficult for responders to distinguish between disaster debris and historic debris, such as remains of shipwrecks
 - **Actions:**
 - Develop trainings and guidance on historic sites and offer to volunteers and responders
 - Encourage Maryland Historical Trust to collaborate with other agencies to provide information regarding historical sites and compliance
- **Challenge:** There are challenges with jurisdictional limitations among agencies
 - **Actions:**
 - Establish memorandums of understanding and agreements between agencies
 - Include citations for legal references in documents or materials used for disaster-generated marine debris planning and response to highlight applicable authorities
- **Challenge:** Local debris management plans do not always include information specific to marine debris response
 - **Action:** Encourage and incentivize counties and municipalities to develop debris management plans that include marine debris response information
- **Challenge:** There are limitations to federally funded debris removal projects

- **Action:** Make information about eligibility, removal criteria, and other limitations publicly available
 - For information about FEMA Public Assistance eligibility, see [Section 4.3, FEMA Roles and Responsibilities](#)
 - For information about NRCS EWP Program criteria, see [Section 4.3, NRCS Roles and Responsibilities](#)
- **Challenge:** There is no established procedure or mechanism for reporting a marine debris incident outside of major disasters
 - **Action:** Establish a procedure for reporting of marine debris and a mechanism for disseminating this information to local authorities and the public in coastal Maryland

6.1.3 Communication/Education

- **Challenge:** There is a need for increased availability and expanded scope of exercises and trainings
 - **Actions:**
 - Expand audience list for exercises to include agencies who are not typically involved
 - Encourage the state to host a table top exercise focused on disaster-generated marine debris
 - Coordinate exercises in calendar format, possibly through MDEM
- **Challenge:** There is a lack of public understanding that the RP for abandoned vessels is the vessel owner
 - **Action:** Create a marine debris pamphlet that includes information about the responsibilities of vessel ownership to distribute to boat owners or marinas. Display information through social media.

6.1.4 Resources

- **Challenge:** After a marine debris incident that does not result in a presidential disaster declaration, there are limited funding sources for debris removal in state waters
 - **Actions:**
 - Establish partnerships with private organizations and NGOs to assist with fundraising and contracting for debris removal in emergency situations
 - Develop a list of potential funding sources in the state of Maryland
 - Review requirements and eligibility for Public Assistance funding through MDEM during locally declared emergencies
- **Challenge:** Equipment in need of repair and/or low availability of equipment may delay post-disaster dredging projects
 - **Actions:**
 - Encourage agencies and contractors to establish a routine for pre-storm maintenance of equipment
 - See Capabilities matrix in [Appendix 8.3](#) for a list of debris response equipment capabilities by agency

6.2 Additional Resources

National Oceanic and Atmospheric Administration. (2014). *Best management practices for removal of debris from wetlands and other intertidal areas*. Retrieved from https://marinedebris.noaa.gov/sites/default/files/MDP_Debris_Removal_Intertidal_Areas.pdf

National Oceanic and Atmospheric Administration. (2019). *Environmental response management application*. Retrieved from <http://response.restoration.noaa.gov/erma/>

U.S. National Response Team. (2020). *Abandoned vessel authorities and best practices guidance*. Washington, DC: U.S. National Response Team. Retrieved from <https://marinedebris.noaa.gov/adv-document/abandoned-vessel-authorities-and-best-practices-guidance>

7 References

- Chesapeake Bay Program. (2019). *Facts and figures*. Retrieved from <https://www.chesapeakebay.net/discover/facts>
- Council on Environmental Quality. (2007). *A citizen's guide to the NEPA*. Retrieved from https://ceq.doe.gov/docs/get-involved/Citizens_Guide_Dec07.pdf
- Federal Emergency Management Agency. (n.d.). *Disaster declarations by state/tribal government*. Retrieved from <https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>
- Federal Emergency Management Agency. (2007). *FEMA 325: Public assistance debris management guide*. Washington, DC: U.S. Government Printing Office. Retrieved from <https://www.fema.gov/pdf/government/grant/pa/demagde.pdf>
- Federal Emergency Management Agency. (2008). *Emergency support function #11 – agriculture and natural resources annex*. Washington, DC: U.S. Government Printing Office. Retrieved from <https://www.fema.gov/pdf/emergency/nrf/nrf-esf-11.pdf>
- Federal Emergency Management Agency. (2010). *FEMA recovery policy 9523.5: Debris removal from waterways*. Washington, DC: U.S. Government Printing Office. Retrieved from https://www.fema.gov/pdf/government/grant/pa/9523_5.pdf
- Federal Emergency Management Agency. (2020). *Public assistance program and policy guide FP 104-009-2*. Washington, DC: U.S. Government Printing Office. Retrieved from <https://www.fema.gov/assistance/public/policy-guidance-fact-sheets>
- Maryland Department of Emergency Management. (2016). *Maryland 2016 hazard mitigation plan*. Retrieved from <https://mdem.maryland.gov/community/Documents/2016%20Maryland%20Hazard%20Mitigation%20Plan%20final%202.pdf>
- Maryland Department of Emergency Management. (2019). *Maryland consequence management operations plan*. Retrieved from https://mdem.maryland.gov/Documents/Maryland_Consequence_Management_Operations_Plan%202.0_January%202019_FINAL%201.pdf
- Maryland Department of Natural Resources (n.d.). *Maryland's coastal zone*. Retrieved from <https://DNR.maryland.gov/ccs/Pages/md-coastal-zone.aspx>
- Maryland Department of Transportation (n.d.). *Port information*. Retrieved from <https://mpa.maryland.gov/Pages/port-information.aspx>
- National Oceanic and Atmospheric Administration. (n.d.-a). *Essential fish habitat mapper*. Retrieved from <https://www.habitat.noaa.gov/apps/efhmapper/>
- National Oceanic and Atmospheric Administration. (n.d.-b). *Section 7: species/critical habitat information & maps in the greater Atlantic region*. Retrieved from

<https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-species-critical-habitat-information-maps-greater>

National Oceanic and Atmospheric Administration. (2018). [Web mapping tool presents spatial land cover data used in the water quality section of the wetland benefits coastal county snapshot]. *Wetland benefits snapshot map*. Retrieved from

<http://www.arcgis.com/home/webmap/viewer.html?webmap=f19a213e1a2248ec9f6d3863908bdce9&extent=-79.7046,37.1078,-72.6129,40.5222>

National Oceanic and Atmospheric Administration. (2019a). *Essential fish habitat assessment for consultations*. Retrieved from <https://www.fisheries.noaa.gov/new-england-mid-atlantic/habitat-conservation/essential-fish-habitat-assessment-consultations>

National Oceanic and Atmospheric Administration. (2019b). *Section 7 consultations in the greater Atlantic region*. Retrieved from <https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-consultations-greater-atlantic-region>

National Oceanic and Atmospheric Administration. (2020a). *Environmental sensitivity index (ESI) maps and data*. Retrieved from <https://response.restoration.noaa.gov/resources/environmental-sensitivity-index-esi-maps>

National Oceanic and Atmospheric Administration. (2020b). *Marine debris program*. Retrieved from <https://marinedebris.noaa.gov/>

National Oceanic and Atmospheric Administration. (2021). [Web-based mapping tool that assists responders in dealing with incidents that may adversely impact the environment]. *Emergency Response Management Application: Atlantic; Maryland marine debris response*. Retrieved from <https://erma.noaa.gov/atlantic/erma.html#/view=2946>

U.S. Army Corps of Engineers. (2010). *Debris removal from waterways field operations guide*.

U.S. Coast Guard. (2012). *Upper Chesapeake Bay estuary area contingency plan*. Retrieved from: <https://homeport.uscg.mil/Lists/Content/Attachments/60713/Upper%20Chesapeake%20Estuary%20ACP.pdf>

U.S. Environmental Protection Agency. (2018). *National oil and hazardous substances pollution contingency plan (NCP) overview*. Retrieved from <https://www2.epa.gov/emergency-response/national-oil-and-hazardous-substances-pollution-contingency-plan-ncp-overview>

U.S. Fish and Wildlife Service. (n.d.). *IPaC information for planning and consultation*. Retrieved from <https://ecos.fws.gov/ipac/>

U.S. Fish and Wildlife Service. (2015). *Coastal barrier resources system*. Retrieved from <https://fwsprimary.wim.usgs.gov/CBRSMapper-v2/>

U.S. National Response Team. (2020). *Abandoned vessel authorities and best practices guidance*. Washington, DC: U.S. National Response Team. Retrieved from <https://marinedebris.noaa.gov/adv-document/abandoned-vessel-authorities-and-best-practices-guidance>

8 Appendices

8.1 Select Agency Authorities

8.1.1 Local Government Authorities

- Environmental Issues, Md. Code Ann § 13-701 et seq.
- Intergovernmental agreements for disposal of garbage, Md. Code Ann § 5-104
- Local emergency plans, Md. Code Ann § 14-110
- Local state of emergency, Md. Code Ann § 14-111
- Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C § 5121 et seq.
- Waterways and Activities on Shores of Waterways, Md. Code Ann § 13-801 et seq.

8.1.2 State Agency Authorities

Maryland Department of Emergency Management (MDEM)

- Coastal Zone Management Act of 1972, 16 U.S.C § 1451 et seq.
- Emergency Management Advisory Council, Md. Code Ann § 14-105
- Emergency Management Assistance Compact, Md. Code Ann § 14-701-702
- Maryland Department of Emergency Management established, Md. Code Ann § 14-103
- Maryland Emergency Management Assistance Compact, Md. Code Ann § 14-803
- Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C § 5121 et seq.
- State of emergency – Declaration by Governor, Md. Code Ann § 14-107

Maryland Department of the Environment (MDE)

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601 et seq.
- Federal Water Pollution Control Act (commonly known as Clean Water Act) as amended by the Oil Pollution Act of 1990, 33 U.S.C. § 1251 et seq.
 - Oil Pollution Liability and Compensation, 33 U.S.C. § 2701 et seq.
- Oil Contaminated Site Environmental Cleanup Fund, Md. Code Ann § 4-701
- Stormwater Management, Md. Code Ann § 4-201 et seq.
- Watershed Sediment and Waste Control, Md. Code Ann § 4-301 et seq.
- Water Pollution Control and Abatement, Md. Code Ann § 4-401 et seq.

Maryland Department of Natural Resources (MDNR)

- Abandoned, Lost, or Seized Personal Property, Md. Code Ann § 1-2A-01
- Conservation and Management of State Waters, Md. Code Ann § 8-201 et seq.
- Maryland Environmental Policy Act, Md. Code Ann § 1-301 et seq.
- Natural Resources Police Force, Md. Code Ann § 1-201 et seq.
- Organization, Powers, and Duties of Department, Md. Code Ann § -101 et seq.
- State Chesapeake Bay and Endangered Species Fund, Md. Code Ann § 1-701 et seq.

Maryland Department of Planning (MDP)

Maryland Historical Trust (MHT)

- Maryland Historical Trust Act of 1985, Md. Code Ann § 5A-325-326
- National Historic Preservation Act, 54 U.S.C. 300101 et seq.

Maryland Department of Transportation (MDOT)

- Maryland Port Commission and Maryland Port Administration, Md. Code Ann § 6-201 et seq.
- Organization and General Authority of the Department, Md. Code Ann § 2-101 et seq.
- Port of Baltimore, Md. Code Ann § 6-401 et seq.

8.1.3 Federal Agency Authorities

Animal, Plant and Health Inspection Service

- Animal Health Protection Act, 7 U.S.C § 8301 et seq.
- Plant Protection Act, 7 U.S.C § 7701 et seq.

Federal Emergency Management Agency (FEMA), Region III

- Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C § 5121 et seq.
 - Debris Removal, 42 U.S.C. § 5173
 - Essential Assistance, 42 U.S.C. § 5170b
 - Federal Emergency Assistance, 42 U.S.C. § 5192

National Oceanic and Atmospheric Administration (NOAA)

- Coastal Zone Management Act of 1972, 16 U.S.C § 1451 et seq.
- Endangered Species Act, 16 U.S.C. § 1531 et seq.
- Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. § 1801 et seq.
- Marine Debris Research, Prevention, and Reduction Act, 33 U.S.C. § 1951 et seq.
- Marine Mammal Protection Act of 1972, 16 U.S.C § 1361 et seq.
- Marine Protection, Research, and Sanctuaries Act (Ocean Dumping Act), 33 U.S.C. § 1401 et seq.
- National Marine Sanctuaries Act, 16 U.S.C § 1431 et seq.
- National Marine Sanctuary Program Regulations, 15 C.F.R. § 922

Natural Resources Conservation Service (NRCS)

- Emergency Watershed Protection Program, 7 C.F.R. § 624

U.S. Army Corps of Engineers (USACE), Baltimore District

- Authority for snagging and clearing for flood control (Section 208), 33 C.F.R. § 263.24
- Federal Water Pollution Control Act (commonly known as Clean Water Act) as amended by the Oil Pollution Act of 1990, 33 U.S.C. § 1251 et seq.
 - Permits for dredged or fill material (Section 404), 33 U.S.C. § 1344
- Flood Control and Coastal Emergency Act, 33 U.S.C. § 701n (Public Law 84-99)
- Permits for Structures or Work in or Affecting Navigable Waters of the United States, 33 C.F.R. § 322
- Removal of snags and debris, and straightening, clearing, and protecting channels in navigable waters, 33 U.S.C. § 603a
- Removal of Wrecks and Other Obstructions, 33 C.F.R. § 245
- Rivers and Harbors Appropriation Act of 1899 and 1945, 33 U.S.C. § 401 et seq.
 - Obstruction of navigable waters generally; wharves; piers, etc.; excavations and filling in (Section 10), 33 U.S.C. § 403
 - Taking possession of, use of, or injury to harbor or river improvements, 33 U.S.C. § 408

- Obstruction of navigable waters by vessels; floating timber; marking and removal of sunken vessels, 33 U.S.C. § 409
- Removal by Secretary of the Army of sunken water craft generally; liability of owner, lessee, or operator, 33 U.S.C. § 414
- Summary removal of water craft obstructing navigation; liability of owner, lessee, or operator, 33 U.S.C. § 415
- Collection and removal of drift and debris from publicly maintained commercial boat harbors and adjacent land and water areas (Water Resources Development Act, Section 202), 33 U.S.C § 426m
- Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C § 5121 et seq.

U.S. Coast Guard (USCG), Sector Maryland-National Capital Region

- Abandoned Barge Act of 1992, 46 U.S.C. § 4701-4705
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601 et seq.
- Federal Water Pollution Control Act (commonly known as Clean Water Act) as amended by the Oil Pollution Act of 1990, 33 U.S.C. § 1251 et seq.
 - Oil Pollution Liability and Compensation, 33 U.S.C. § 2701 et seq.
- Marking of structures, sunken vessels and other obstructions, 33 C.F.R. § 64
- National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. § 300
- Ports and Waterways Safety Act, 33 U.S.C. §1221 et seq.
- Saving life and property, 14 C.F.R. § 88

U.S. Environmental Protection Agency (EPA), Region III

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601 et seq.
- Federal Water Pollution Control Act (commonly known as Clean Water Act) as amended by the Oil Pollution Act of 1990, 33 U.S.C. § 1251 et seq.
- National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. § 300

U.S. Fish and Wildlife Service (USFWS)

- Coastal Barrier Resources Act, 16 U.S.C. § 3501 et seq.
- Endangered Species Act, 16 U.S.C. § 1531 et seq.
- Fish and Wildlife Coordination Act, 16 U.S.C. § 661 et seq.
- Marine Mammal Protection Act of 1972, 16 U.S.C § 1361 et seq.
- Migratory Bird Treaty Act, 16 U.S.C § 703 et seq.
- National Wildlife Refuge System Administration Act of 1966, 16 U.S.C. § 668dd et seq.
- National Wildlife Refuge System Improvement Act of 1997

8.2 Maryland Legislation Applicable to Marine Debris Response

- Abandoned, Lost, or Seized Personal Property, Md. Code Ann § 1-2A-01
- Conservation and Management of State Waters, Md. Code Ann § 8-201 et seq.
- Management and development of Chesapeake Bay and other tidal waters; authority to acquire and maintain vessels and equipment; additional powers, Md. Code Ann § 8-202
- Maryland Environmental Policy Act, Md. Code Ann § 1-301 et seq.
- Maryland Historical Trust Act of 1985, Md. Code Ann § 5A-325-326
- Removal and disposal of abandoned or sunken vessels, Md. Code Ann § 8-721
- Stormwater Management, Md. Code Ann § 4-201 et seq.
- Throwing certain waste on certain waters of the State, Md. Code Ann § 8-726.1
- Throwing or dumping refuse on waters of State, Md. Code Ann § 8-726
- Watershed Sediment and Waste Control, Md. Code Ann § 4-301 et seq.
- Water Pollution Control and Abatement, Md. Code Ann § 4-401 et seq.

8.3 Agency Response Capabilities

		Yes - In-house Capability		FEMA Region III ¹	NOAA ²	USFWS ESFO	MDEM	MDNR	MHT	Annapolis Emergency Management	Annapolis Harbormaster	Baltimore County Solid Waste
		Contract - Contracted capability										
Technology	Aerial photography and video	Yes	Cont.	Yes				Yes				
	Automatic ID system for vessels											
	Geographic Information Systems (GIS)	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
	Multi-beam sonar	Contract		Yes								
	Remote sensing	Contract		Yes				Yes				
	Side-scan sonar	Contract		Yes			Yes	Yes				
	Single-beam sonar	Contract		Yes			Yes					
Manpower	Compliance and permitting expertise	Yes		Yes	Yes	Yes		Yes	Yes	Yes		Yes
	Dive support	Contract		Yes ³				Yes	Yes ⁵			
	Environmental expertise (location of sensitive areas and endangered species present, etc.)	Yes	Cont.	Yes	Yes			Yes				
	GIS staff/technician	Yes	Cont.	Yes			Yes	Yes	Yes	Yes	Yes	Yes
	Historical/cultural expertise	Yes	Cont.						Yes	Yes	Yes	
	Local Captains/navigation expertise to support operations	Contract						Yes				
	Private boat owners/operators (vessels of opportunity)											
	Public Affairs trained staff	Yes	Cont.	Yes			Yes	Yes		Yes	Yes	
	Technical expertise for removal operations (techniques, best management practices, etc.)	Yes	Cont.	Yes				Yes			Yes	
	Volunteer manpower (vetted for technical skills)	Yes	Cont.									
Equipment	Volunteer coordination	Yes								Yes		
	Aircraft- civil air patrol	Yes	Cont.	Yes								
	Airlift capabilities	Yes	Cont.									
	All-terrain vehicles or other vehicles for difficult terrain	Contract						Yes				
	Barge/Self-loading barge	Contract						Yes				
	Boom	Contract							Yes	Yes	Yes	
	Communications equipment (two-way radios etc.)	Contract		Yes			Yes	Yes	Yes	Yes	Yes	

		Yes - In-house Capability		FEMA Region III ¹	NOAA ²	USFWS ESFO	MDEM	MDNR	MHT	Annapolis Emergency Management	Annapolis Harbormaster	Baltimore County Solid Waste
		Contract - Contracted capability										
Equipment (Cont.)	Crane/knuckleboom crane	Contract						Yes		Yes	Yes	
	Debris handling equipment (burners, grinders, etc.)	Yes	Cont.									Yes
	Excavator	Contract						Yes				Yes
	Remotely Operated Vehicle	Contract		Yes								
	Unmanned Aerial Vehicle	Contract		Yes						Yes		
	Vessels-shallow draft	Yes	Cont.	Yes				Yes	Yes ⁶	Yes	Yes	
	Vessels-deep draft	Yes	Cont.	Yes				Yes		Yes	Yes	
	Other specialized equipment that cannot be readily procured immediately following a debris incident	Contract										
Logistics	Contract authority and oversight capabilities	Yes	Cont.	Yes				Yes		Yes		
	Docks for wet storage of vessels	Contract						Yes		Yes	Yes	
	Facility suitable for establishing an Emergency Operations Center	Yes	Cont.				Yes	Yes		Yes		
	Funding for marine debris removal	Yes		Yes ⁴			Yes	Yes		Yes	Yes	
	Legal representation/expertise	Yes		Yes				Yes		Yes		
	List of available locations for staging/off-loading areas							Yes		Yes	Yes	
	Pre-approved waterway debris removal contractors	Contract						Yes		Yes	Yes	
	Pre-designated landfill/disposal sites (to include vegetative and animal carcasses)	Contract						Yes		Yes	Yes	
	Pre-event contracts and staged agreements in place	Contract										
	Staging/Off-Loading: Land with water access to stage, offload debris (has not been evaluated for suitability or officially pre-designated)	Contract						Yes		Yes	Yes	
	Staging/Off-Loading: Pre-designated staging, off-loading and special handling areas (already evaluated for suitability)	Contract						Yes		Yes	Yes	
	Staging area for dry storage of vessels	Yes	Cont.					Yes		Yes	Yes	
Other logistical support including fuel, housing, food, etc.	Yes	Cont.							Yes	Yes		

Note: Capabilities which could be used during marine debris response in Maryland were either identified through research or were self-reported by an organization. Organizations were asked to indicate whether capabilities were in-house or were contracted through a third party. Footnotes refer to additional information provided for a particular capability.

- ¹FEMA Capabilities reported 'Contract' may be contracted out or mission assigned to another federal agency. For example, USACE may be mission assigned to coordinate and/or identify local areas to use for operations.
- ²NOAA Some capabilities require contract support for staffing.
- ³NOAA Dive capabilities do not include sites with oil or hazardous pollutants.
- ⁴NOAA Funding through grant program and possible Congressional supplemental funding
- ⁵MHT Dive capabilities do not include sites with oil or hazardous pollutants, are limited to inspection of potential historic properties, and may require contract support
- ⁶MHT Limited to one 30-foot Maycraft survey boat and one 17-foot Carolina Skiff

8.4 Agency Contact Information

Contact information for local governments, state agencies, federal agencies, and nongovernmental organizations can be found in the *Field Reference Guide* on the NOAA Marine Debris Program website at <https://marinedebris.noaa.gov/>. Contact information included in the field guide is verified annually.



Gina M. Raimondo
United States Secretary of Commerce

Dr. Richard W. Spinrad
Under Secretary of Commerce for Oceans and Atmosphere
and NOAA Administrator

Nicole R. LeBoeuf
Assistant Administrator for Ocean Services
and Coastal Zone Management