



Delaware Marine Debris Emergency Response Guide: Comprehensive Guidance Document

NOAA Marine Debris Program
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
June 2020

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List of Acronyms

ACP	Area Contingency Plan
BMP	Best Management Practice
C&D	Construction and Demolition debris
CBRA	Coastal Barrier Resources Act
CBRS	John H. Chafee Coastal Barrier Resources System
DelDOT	Delaware Department of Transportation
DETF	Delmarva Emergency Task Force
DEMA	Delaware Emergency Management Agency
DNREC	Department of Natural Resources and Environmental Control
DSWA	Delaware Solid Waste Authority
ECP	Emergency Conservation Program (of FSA)
EFH	Essential Fish Habitat
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESF	Emergency Support Function
EWPP	Emergency Watershed Protection Program (of NRCS)
FEMA	Federal Emergency Management Agency
FOSC	Federal On-Scene Coordinator
FSA	Farm Service Agency
GIS	Geographic Information Systems
HHM	Household Hazardous Material
HHW	Household Hazardous Waste
ICS	Incident Command System
LIDAR	Light Detection and Ranging
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act
NGO	Non-Governmental Organization
NIMS	National Incident Management System
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 DNREC)
NRT	Navigation Response Team (of NOAA)
NWR	National Wildlife Refuge (of USFWS)
ORR	Office of Response and Restoration (of NOAA)
RASCL	Resilient and Sustainable Committees League
RCRA	Resource Conservation and Recovery Act
RP	Responsible Party
RRT	Regional Response Team
SHPO	State Historic Preservation Office
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
VOAD	National Voluntary Organizations Active in Disaster

Definitions

Abandoned vessel – (a) A vessel that has been left illegally or has remained without permission for more than 30 days on public property, including public marinas, public docks, and public boatyards; or (b) a vessel that has been found adrift or unattended in or upon the public waters or public subaqueous land of the State, and is found in a condition of disrepair that constitutes a hazard or obstruction to the use of public waters or subaqueous land of the State or that presents a potential or actual health or environment hazard (23 Del. C. § 1303(d)(1)).

Acute waterway debris incident – An incident that results in the release of large amounts of waterway debris. This may include natural incidents such as severe storms or anthropogenic incidents such as maritime disasters.

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 Delaware, the *Sector Delaware Bay Area Contingency Plan* is prepared by the Area Committee and maintained by U.S. Coast Guard District 5, Sector Delaware Bay (U.S. Coast Guard [USCG], 2019).

Chemical, biological, radiological, and nuclear-contaminated debris – Debris contaminated by chemical, biological, radiological, or nuclear materials (Federal Emergency Management Agency [FEMA], 2018b).

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 *Sector Delaware Bay Area Contingency Plan* (USCG, 2019).

Coastal zone (under Delaware Coastal Zone Management Program) – All that area of the State, whether land, water or subaqueous land between the territorial limits of Delaware in the Delaware River, Delaware Bay and Atlantic Ocean, and a line formed by certain Delaware highways and roads as described in Del. C. § 7002(i).

Construction and demolition (C&D) debris – 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, 2018b).

Disaster – A catastrophic condition caused by a man-made event (including, but not limited to, industrial, nuclear or transportation accident, explosion, conflagration, power failure, act of domestic terrorism, natural resource shortage or other condition resulting from man-made causes, such as hazardous materials spills and other injurious environmental contamination), natural event (including, but not limited to, any hurricane, tornado, storm, flood, high water, wind-driven water, tidal wave, earthquake, landslide, mud slide, snowstorm, drought, fire or explosion) or war-caused event (following an attack upon the United States caused by use of bombs, missiles, shellfire or nuclear, radiological, chemical or biological means, or other weapons, or overt paramilitary actions, or other conditions such as sabotage) which results in substantial damage to property or the environment, and/or hardship, suffering, injury or possible loss of life (20 Del. C. § 3102(1)).

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, 2018b).

Eligible applicant – Entities who may receive public assistance reimbursement funding from the Federal Emergency Management Agency 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 (44 C.F.R. § 206.222).

Eligible debris – Debris that is a direct result of a major disaster declared by the president, in the designated disaster area, and whose removal is necessary to eliminate the immediate threat to life, public health and safety, or improved property (FEMA, 2018b).

Emergency (Delaware definition) – Any situation which requires efforts and capabilities to save lives or to protect property, public health and safety, or to lessen or avert the threat of a disaster in Delaware (20 Del. C. § 3102(2)).

Emergency (National Oceanic and Atmospheric Administration Fisheries definition) – 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], 2019b).

Emergency (FEMA definition) – 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)).

Emergency (U.S. Army Corps of Engineers definition) – 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) – Used by the Federal Government and many state governments as the primary coordinating structures that group resources and capabilities into functional areas most frequently needed in a national response (U.S. Department of Homeland Security, 2019). ESFs most commonly applied during response to a waterway debris incident are ESF 3 Public Works and Engineering and ESF 10 Oil and Hazardous Materials Response.

Environmental Sensitivity Index map – Maps produced by the National Oceanic and Atmospheric Administration that provide a concise summary of coastal resources that are at risk if an oil spill occurs nearby. Examples of at-risk resources include biological resources (such as birds and shellfish beds), sensitive shorelines (such as marshes and tidal flats), and human-use resources (such as public beaches and parks; 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.

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, 2018b).

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

Household hazardous waste/material (HHW/HHM) – 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, 2018b).

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, 2018b).

Inland zone (Area Contingency Plan [ACP] inland zone) – U.S. Environmental Protection Agency area of responsibility for response under the National Contingency Plan, with geographic boundaries defined in the *Sector Delaware Bay Area Contingency Plan* (USCG, 2019).

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)).

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, 2020).

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. § 2.36; 33 C.F.R. § 329.4).

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)).

Putrescent debris – Debris that will decompose or rot, such as animal carcasses and other fleshy organic matter (FEMA, 2018b).

Recoverable debris – Generally any documented vessel, vehicle, recreational vehicle, or shipping container traceable to an owner (U.S. Army Corps of Engineers [USACE], 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, 2018b).

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, 2019).

Submerged lands – (1) Lands lying below the line of mean low tide in the beds of all tidal waters within the boundaries of the State; (2) Lands lying below the plane of the ordinary high water mark of nontidal rivers, streams, lakes, ponds, bays and inlets within the boundaries of the State as established by law; and (3) Specific manmade lakes or ponds as designated by the Secretary (7 Del. C. § 7202(h)).

Territorial Sea – All of those tidal waters in the Atlantic Ocean separated from Delaware Bay under the jurisdiction of the State, the outer boundary of which is a line 3-nautical miles coterminous with the shoreline of the state (Del. C. § 906(17)).

Tidelands – Lands lying between the line of mean high water and the line of mean low water (7 Del. C. § 6101(10)).

Vegetative debris – Whole trees, tree stumps, tree branches, tree trunks, and other leafy material. May be recyclable or have salvage value (FEMA, 2018b).

Vehicles and vessels – 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, 2018b).

Vessel – Every description of watercraft, other than a seaplane, used or capable of being used as a means of transportation on water or ice (23 Del. C. § 1303(d)(3)).

Waters of the State – Any waters within the territorial limits of this State, the marginal sea adjacent to this State and the high seas when navigated as a part of a journey or ride to or from the shore of this State (23 Del. C. § 2112(8)).

Waterway debris (Incident waterway debris) – Any solid material, including but not limited to vegetative debris and debris exposed to oil, hazardous substances, pollutants or contaminants, that enters a waterway following an acute release incident and poses a threat to the natural or man-made environment. This may include shoreline debris and debris in some inland, non-tidal waterways.

Wetlands – Those lands above the mean low water elevation including any bank, marsh, swamp, meadow, flat or other low land subject to tidal action in the State along the Delaware Bay and Delaware River, Indian River Bay, Rehoboth Bay, Little and Big Assawoman Bays, the coastal inland waterways, or along any inlet, estuary or tributary waterway or any portion thereof, including

those areas which are now or in this century have been connected to tidal waters, whose surface is at or below an elevation of 2 feet above local mean high water, and upon which may grow or is capable of growing any but not necessarily all of the following plants as described in 7 Del. C. § 6603(h).

White goods – Discarded household appliances such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, dryers, and water heaters. May contain refrigerants, mercury, or compressor oils that must be removed before disposal (FEMA, 2018b).

1. Introduction

1.1 Purpose

The purpose of this document is to improve preparedness for response and recovery operations following an acute waterway debris incident in Delaware. The term acute waterway debris incident is used to describe an incident—either natural or man-made—that results in the release of large amounts of waterway debris. This document outlines existing response structures at the local, state, and federal levels to facilitate a coordinated, well-managed, and immediate response to waterway debris incidents impacting the state of Delaware.

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 waterway debris response. The document also includes an overview of permitting and compliance requirements that must be met before waterway debris removal work begins. This information is synthesized in a one-page reference [handout](#).

Determining responsibility for waterway debris response and removal can be complicated and may involve multiple agencies and overlapping jurisdictions. Additionally, the removal lead may change depending on the type of incident and the debris location. Because all incidents are different, some aspects of waterway 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 document seeks to capture the most likely response structure and actions with the understanding that flexibility is an inherent component of an effective response.

The *Delaware Marine Debris Emergency Response Guide: Comprehensive Guidance Document (Guide)* serves as a complete reference for Delaware waterway debris response. The accompanying *Field Reference Guide* only includes the most pertinent information for quick reference in the field and during emergency response operations.

1.2 Scope of Guide

The *Guide* addresses potential acute waterway debris incidents affecting the state of Delaware. Throughout this document, the term waterway debris (or incident waterway debris) is used in lieu of the term marine debris. 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, stakeholders have identified it as a common debris stream of concern following natural disasters. To account for both marine debris and vegetative debris in this document, the term waterway debris is used and includes any solid material, including but not limited to vegetative debris and debris exposed to or that has the potential to release oil, hazardous substances, pollutants, or contaminants, that enters a waterway following an acute incident and poses a threat to the natural or man-made environment. This may include shoreline and wetland debris and debris in some inland, non-tidal waterways. This *Guide* specifically addresses waterway debris resulting from acute episodic incidents, such as disaster debris, and may not apply to chronic waterway debris issues.

1.3 *Guide Maintenance*

The *Delaware Marine Debris Emergency Response 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 will be verified annually, and the *Guide* will undergo a formal review every three years. The *Delaware Marine Debris Emergency Response Guide* and subsequent versions will be posted on the NOAA Marine Debris Program website at <https://marinedebris.noaa.gov/> (NOAA, 2020b).

2. Incident Waterway Debris in Delaware

2.1 Foreseeable Waterway Debris Incidents in Delaware

Situated between two of the largest watersheds along the eastern U.S. coast—the Chesapeake Bay and the Delaware Bay—the state of Delaware is rich in cultural and natural resources. With its mostly flat topography and over 2,500 miles of streams and rivers, Delaware is vulnerable to many natural hazards including flooding, severe storms, and sea level rise (Delaware Emergency Management Agency [DEMA], 2019a). Because of Delaware’s coastal location, these hazards have the potential to generate large amounts of debris into the surrounding waterways.

The Delaware River is the longest undammed river east of the Mississippi, and its drainage basin stretches north into areas of New York, Pennsylvania, and New Jersey. More than 15 million people use its water for drinking and agricultural practices. About 90% of New York City’s water is provided by the combined Delaware and Catskill watersheds (Watershed Agricultural Council, 2019). A marine debris incident within this watershed could have a large-scale impact on the surrounding states.

Although Delaware is the second smallest state by land area, it is the sixth most densely populated state in the country, and its population is predicted to increase by almost 20% in the next twenty years (FEMA, 2018a). The expected growth places a high priority on future hazard planning, especially debris response planning, due to the amount of land space required for debris staging and disposal.

Delaware’s unique geography and topography make it vulnerable to many natural and man-made hazards. Since 1992, there have been 14 major disasters declared by the president (FEMA, n.d.). Perhaps the most infamous of these disasters in recent years was Hurricane Sandy in 2012, which resulted in millions of dollars’ worth of flood-related damage in Delaware, despite the storm’s landfall further east in New Jersey. Flooding is the most frequent and costly natural disaster to affect the state (DEMA, 2018). A comprehensive study by the U.S. Army Corps of Engineers (USACE) in 2015 listed the shorelines of the Delaware River and Bay as the highest risk flooding areas for future storms in the Mid-Atlantic. In the coming years, the city of Lewes specifically could see water levels increase to more than a foot higher than the 5-foot storm surge recorded during Hurricane Sandy (NOAA, 2013; USACE, 2015). The report’s findings highlight the urgency and need for land use planning in flood-prone areas.

Regardless of the type of hazard to affect Delaware, 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. Table 1 shows the total costs associated with debris response and removal for the last four debris-generating events in Delaware. The last two columns indicate the number of dollars eligible and reimbursed by FEMA through the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act).

Table 1. Debris-generating declared disasters and debris removal costs in Delaware from 2007 through 2019. Numbers are in dollar amounts. Note disaster number 4090, Hurricane Sandy, which resulted in the most debris removal costs (M. Werner, personal communication, January 9, 2020).

Disaster Name	Disaster Number	Declaration Date	Total Eligible (Category A)	Total Obligated (Category A)
Severe Winter Storms and Snowstorms	DR-1896	3/31/2010	120,819.09	90,614.33
Hurricane Irene	DR-4037	9/30/2011	165,446.22	124,084.69
Hurricane Sandy	DR-4090	11/16/2012	1,702,340.64	1,276,755.51
Severe Winter Storm and Flooding	DR-4265	3/16/2016	96,944.20	74,013.85
Total Cost			2,085,550.15	1,565,468.38

2.2 Prominent Debris Types

Some agency authorities are dependent on both the location and type of debris. Therefore, response to debris in Delaware waterways may vary depending on the debris type to be removed. Primary debris types generated after a disaster as defined by FEMA (2018b) 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 waterway debris that will be generated after a disaster since different types of hazard incidents generally result in different debris types. Table 2 includes an overview of typical debris streams for several natural hazards. Although Table 2 only covers natural hazards, man-made hazards such as an accident during waterway commerce are also concerns. Man-made hazards are highly variable in both quantity and type of waterway debris released.

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

		Typical Debris Streams								
		Vegetative	Construction and Demolition (C&D)	Oil and Hazardous Material	Household Hazardous Waste	White Goods	Soil, Mud, and Sand	Vessels and Vehicles	Putrescent or Infectious	Household/Personal Property
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 waterway debris generated after a disaster is dependent on land use and existing infrastructure along Delaware's waterways. For example, protected undeveloped areas along the eastern coast, such as Prime Hook National Wildlife Refuge, are likely to generate vegetative debris, while developed properties in Wilmington are likely to generate C&D debris. A land cover map for Delaware is depicted in Figure 1 and illustrates the distribution of land use types in the state, including developed lands. Since the entire state of Delaware is located within the coastal zone, increased development in the state will increase the likelihood of waterway debris following a natural hazard event.

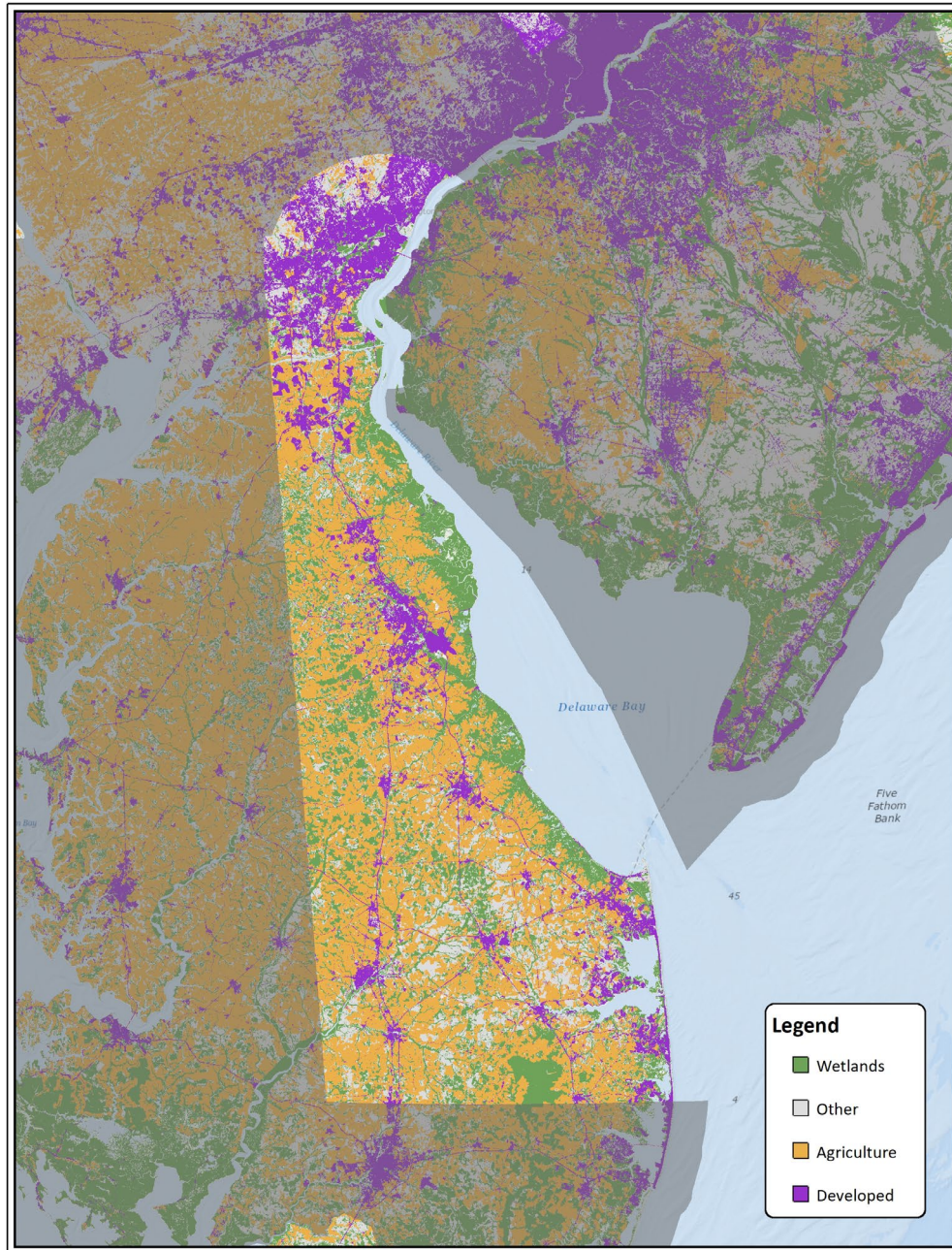


Figure 1. Land cover map for the state of Delaware (National Oceanic and Atmospheric Administration, 2018).

3. Delaware Waterway Debris Response Flowchart

The “Delaware Waterway 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 waterway debris response with color-coded endpoints. Yellow endpoints represent response to waterway debris that is exposed to or has the potential to release oil, hazardous substances, pollutants, or contaminants. Blue endpoints represent response to waterway 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](#).

Delaware Waterway Debris Response Flowchart

Waterway Debris/Incident Waterway Debris

Any solid material, including but not limited to vegetative debris and debris exposed to or that has the potential to release oil, hazardous substances, pollutants, or contaminants, that enters a waterway following an acute incident and poses a threat to the natural or man-made environment. This may include shoreline and wetland debris and debris in some inland, non-tidal waterways.

Acronyms

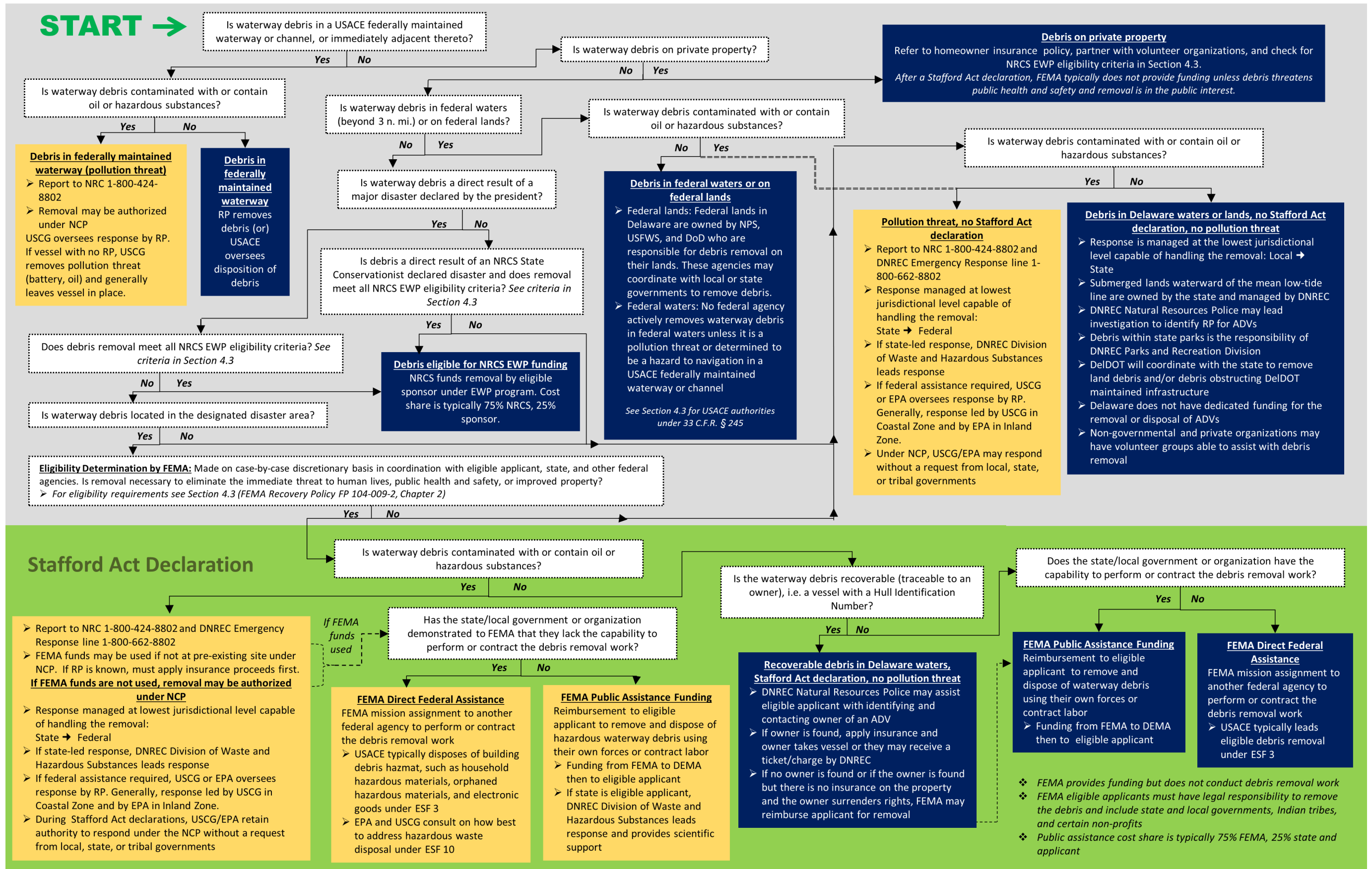
ADV – Abandoned and Derelict Vessel
DelDOT – Delaware Department of Transportation
DEMA – Delaware Emergency Management Agency
DNREC – Delaware Department of Natural Resources and Environmental Control
DoD – U.S. Department of Defense

EPA – U.S. Environmental Protection Agency
ESF – Emergency Support Function
EWP – Emergency Watershed Protection
FEMA – Federal Emergency Management Agency
NCP – National Oil & Hazardous Substance Contingency Plan

NPS – National Park Service
NRC – National Response Center
NRCS – Natural Resources Conservation Service
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 waterway debris that is exposed to or has the potential to release oil, hazardous substances, pollutants, or contaminants
Response to waterway 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

Determining responsibility for waterway debris response and removal can be complicated and may involve multiple agencies and overlapping jurisdictions. The response lead may change depending on the type of incident, the magnitude of the incident, and the debris location. Emergency response in Delaware is in accordance with the National Incident Management System (NIMS), and the Incident Command System (ICS) is the standard for on-scene emergency management (Delaware Department of Transportation [DelDOT], 2018). The draft *Delaware Debris Management Plan* (DelDOT, 2018) lays out the structure and organizational hierarchy of a debris response given four levels of response, ranging from smaller localized incidents to statewide or multi-state events which require the activation of an emergency operations center (EOC). The draft *Delaware Debris Management Plan* includes a sample ICS functional organizational chart for debris response management. When the Delaware EOC is activated, Delaware Department of Transportation (DelDOT) will assume the position of, or appoint an agency to serve as, the debris manager who will report debris activities to the EOC. The debris manager is responsible for oversight, monitoring, and reporting of all debris-related activities, as well as coordinating with other state and local agencies to facilitate response.

Generally, response to an acute waterway debris incident in Delaware is managed at the lowest jurisdictional level capable of handling the response and removal. Initial response operations may begin with local jurisdictions working with county or city emergency management agencies. Assistance from the state may be provided once local resources are exhausted, resources are needed that the jurisdiction does not possess, or response falls under state jurisdiction. In Delaware, state agencies are responsible for land that they own or manage. The federal government may supplement state and local response efforts when their resources have been exceeded or when unique capabilities are needed.

If response to waterway debris in Delaware is led by a federal agency, the Emergency Support Function (ESF) concept is applied to assign agency responsibilities. The most common ESFs applied during response to a waterway debris incident are ESF 3 Public Works and Engineering and ESF 10 Oil and Hazardous Materials Response. If a response is state-led, agency responsibilities are organized into similar ICS sections. For example, federal ESF 3 and ESF 10-related activities correspond to the state's Operations Section, which includes the Public Works Group and the Hazardous Materials Group (DEMA, 2019b).

Local, state, and federal agency roles and responsibilities as they relate to waterway debris response are outlined in the following sections followed by responsibilities of private landowners, volunteer organizations, and non-governmental organizations. For a visual one-page representation of agency roles and responsibilities, see "Delaware Waterway Debris Response Flowchart" in [Section 3](#). For a map defining agency jurisdictional authorities, see [Section 4.6](#). Additionally, response capabilities of each agency and corresponding contact information can be found in Appendices [8.2](#) and [8.1](#), respectively.

4.1 Local Agency Responsibilities

- May act as first responders to reports of waterway debris incidents that impact any of the three coastal counties
- City and county emergency management agencies are the lead local agencies for emergency planning, preparedness, response, and recovery

- During a state-led debris response, will communicate and coordinate with the Debris Manager, as appointed by DelDOT (DelDOT, 2018)
- Coordinates with the state EOC

4.2 State Agency Responsibilities

Delaware Department of Agriculture

- Coordinates the removal of agricultural debris following a declared disaster

Delaware Forestry Service

- Assists in clearing of roadways and other rights-of-way

Poultry and Animal Health Section

- Lead agency in preventing introduction and spread of contagious, infectious diseases
- Houses the Office of the State Veterinarian who leads response efforts including carcass retrieval and depopulation

Delaware Department of Natural Resources and Environmental Control (DNREC)

- Assists DelDOT with debris removal, recycling, and disposal operations
- Communicates and coordinates with the Debris Manager (DelDOT, 2018)
- Conducts routine environmental monitoring for threats and hazards
- Responsible for the management of state-owned submerged lands
- Serves as the primary agency for state Public Works and Hazardous Materials groups (DEMA, 2019b)

Division of Climate, Coastal, & Energy

Coastal Programs

- Serves as the lead agency for implementing the Coastal Zone Management Act of 1972 and the Delaware Coastal Zone Act to ensure proper management of Delaware's coast and watersheds through local, regional, and state agency partnerships
- Manages Delaware Coastal Zone Management federal consistency reviews to ensure that state and federal actions in the coastal zone are consistent and coordinated
- Participates in the Mid-Atlantic Regional Council on the Ocean, a partnership established by the Governors of New York, New Jersey, Delaware, Maryland, and Virginia to address shared regional priorities including marine debris
- Organizes coastal clean ups to remove marine debris from shorelines
- Manages the Delaware National Estuarine Research Reserve

Division of Fish & Wildlife

Natural Resources Police (NRP)

- 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 of an abandoned or derelict vessel
- May issue tickets or penalties for derelict vessels
- Maintains the Delaware NRP Tip411 mobile phone application, where citizens can report environmental crimes and concerns

Division of Parks & Recreation

- Manages 20,000 acres of land within 17 state parks
- Leads removal efforts for debris located within a state park

Division of Waste and Hazardous Substances

- Manages the investigation and clean-up after a release of hazardous substances into the environment
- Maintains a 24-hour emergency response line for reporting environmental spills and violations of environmental laws and other regulations. See [Appendix 8.1](#) for contact information.

Division of Water

Wetlands and Subaqueous Lands

- Provides permitting services for activities in Delaware's wetlands, bays, rivers, streams, lakes, and other waterways that might require a permit under state law. These activities may include the construction of docks and piers, dredging, filling, or debris removal projects that affect Delaware's waters or wetlands.
- Serves as a clearinghouse and sends copies of permit applications to other state and federal agencies
- Maintains a joint permit application process with USACE for state programmatic general permits
- For additional information on DNREC permit and compliance requirements, see [Section 5](#)

Division of Watershed Stewardship

Shoreline and Waterway Management

- Implements the Beach Preservation Program
 - Manages beach enhancement and protection activities including emergency storm repair and debris removal (Delaware Department of Natural Resources and Environmental Control [DNREC], 2018)
- Implements the Waterway Management Fund
 - The Waterway Management Fund, enacted in 2016, is used to support state waterway management operations and is supported by state boat registration fees
- Performs emergency planning and monitoring, dam engineering, and maintenance and repairs for state-owned dams (DNREC, 2018)

Delaware Department of Transportation (DelDOT)

- Serves as the lead agency for transportation systems in Delaware
 - Has responsibility for approximately 90% of roadways in the state. DelDOT leads response for debris that may be impeding road access.
- Leads a multi-agency effort to finalize the draft *Delaware Debris Management Plan* (DelDOT, 2018)
- Coordinates the removal of debris from all DelDOT-maintained transportation facilities and infrastructure
- During a response, DelDOT appoints a Debris Manager to oversee, monitor, and report on debris-related activities, including waterway debris response and removal. The Debris Manager is responsible for:
 - Working with the DelDOT Traffic Management Center to facilitate the removal, collection, and disposal of debris

- Coordinating the establishment of the communication, response, resources, procedures, and guidelines for the debris management team
 - Daily operation and control of debris cleanup, debris management sites, and all debris staff (DelDOT, 2018)
- Works with DNREC and Delaware Solid Waste Authority (DSWA) to develop a debris plan once a disaster becomes imminent

Delaware Division of Historical and Cultural Affairs

State Historic Preservation Office (SHPO)

- Reviews proposed debris removal activities for compliance with the National Historic Preservation Act and effects to historic properties that involve federal agencies directly or through cooperative activities with state agencies such as funding and/or issuance of permits or licenses
- For additional information on SHPO compliance requirements, see [Section 5](#)
- Maintains the Delaware inventory of historic properties through the Cultural Historical Resources Information System, a web-based geographic information mapping system

Delaware Division of Public Health

- Lead agency for preparing, mitigating, responding to, and recovering from public health threats and emergencies

Delaware Emergency Management Agency (DEMA)

- 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 EOC when an emergency or disaster situation develops
- Conducts comprehensive assessments of threats to the state to eliminate or reduce risk and vulnerability (DEMA, 2018)
- Maintains the *State of Delaware All-Hazard Mitigation Plan*, the *Strategic Plan 2019-2022*, and the *Delaware Emergency Operations Plan* (DEMA, 2018; DEMA, 2019a; DEMA 2019b)
- 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
- Provides subject matter expertise for governmental and non-governmental debris response operations
- Coordinates with DelDOT regarding all information relative to debris operations
- May send liaisons to local and/or county EOCs to assist and expedite debris response and recovery operations (DelDOT, 2018)

Delaware National Guard

- Communicates and coordinates with the Debris Manager (DelDOT, 2018)
- Coordinates with DelDOT to assist in emergency roadway and public right-of-way clearance

Delaware Solid Waste Authority (DSWA)

- Develops and implements plans and programs for solid waste management in Delaware, including disposal of special wastes such as oil and hazardous materials

- Operates three landfills and a recycling center in the state
- If requested, a representative from DSWA will sit in the state EOC
- Communicates and coordinates with the Debris Manager (DelDOT 2018)
- May use existing infrastructure, such as transfer stations, for debris separation and transport during a declared disaster
- Assists with monitoring of debris management sites

University of Delaware

- Designated as a Sea Grant College to promote conservation and management of marine and coastal resources through research and education
- May provide academic support to the state as needed or requested
- Conducts debris-related research in Delaware waters when grant funds are available

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

- 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, 2018b)
 - 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, 2018b).
 - 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, 2018b)
- 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 Navigation Response Team (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

- 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 Weather Service

- Predicts, forecasts, and issues official watches and warnings of severe weather
- Provides operational tools and briefings to federal and territorial officials for emergency management awareness and decision support

National Park Service (NPS)

- Responsible for debris assessment and cleanup within NPS-managed lands and waters, including the First State National Historic Park and other historic trails and sites
- May coordinate with partners to conduct waterway debris assessment and cleanup
- Provides BMPs to protect NPS-managed areas and associated resources
- For a map of areas managed by NPS in Delaware, 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:

- Waterway debris is a direct result of either a major disaster declared by the president or of an NRCS State Conservationist declared natural disaster
- Waterway 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), Philadelphia District

- May issue emergency contracts when necessary
- May request assistance from NOAA NRT to survey ports and near-shore waterways

Emergency Operations

- Serves as lead federal agency in support of FEMA under emergency support function (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 federally authorized channels for changes in water depth and hazards to navigation for commercial, recreational, and military use
- Responsible for operation and maintenance of federally maintained waterways and channels within Philadelphia District. For a map of USACE federally authorized and maintained waterways and channels in Delaware, see [Section 4.6](#).

Regulatory Program

- Philadelphia 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 Delaware Bay

- In most cases, removal of waterway debris by USCG is not authorized
- Oversees response to waterway debris exposed to or with the potential to release oil or hazardous substances that poses a substantial threat within the coastal zone as defined in the *Sector Delaware Bay Area Contingency Plan* (ACP; USCG, 2019)
 - Removal actions generally limited to removing oil and other hazardous substances while leaving vessels in place
 - May coordinate with state or local agencies to have vessel removed after abating pollution threat
 - Oversees response to pollution threats in federally maintained waterways and channels in coordination with USACE
- Serves as lead 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 and local governments and oversees response by a responsible party (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. For contact information, see [Appendix 8.1](#).
- 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 NRT to survey ports and near-shore waterways
- For a map of USCG sector boundaries and the ACP coastal-inland zone boundary in Delaware, see [Section 4.6](#)

U.S. Department of the Interior

Office of Environmental Policy and Compliance

- Lead agency responsible for Section 7 consultation and historical and cultural preservation under the National Environmental Policy Act (NEPA)

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

- Responds to oil and hazardous substance releases or threats of release in waterways within the inland zone as defined in the *Sector Delaware Bay Area Contingency Plan* (USCG, 2019). For a map of the ACP coastal-inland zone boundary in Delaware, see [Section 4.6](#).
- Serves as lead 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 and local 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
- Organizes, in coordination with other partners, the Regional Response Team (RRT) in Region III, which allows state and federal agencies to exchange information about their abilities to respond to an incident
- Administers general ocean disposal permit for the ocean disposal of steel-hulled vessels (40 C.F.R. § 229.3)
 - Ocean Dumping Management Program provides guidance regarding derelict vessel disposal, emergency disposal permits, and removal authorities

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 two NWRs in Delaware—Bombay Hook NWR and Prime Hook NWR
- Coordinates and manages waterway debris assessment and cleanup in NWRs
- May coordinate with federal, state, and local partners to remove incident waterway 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 Delaware, 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, 2014)

4.4 Private Landowners

- After a Stafford Act declaration, debris removal from private property or privately-owned waterways 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, 2018b)
- May be eligible for debris removal funding from the NRCS EWP Program if represented by a project sponsor and specific criteria are met. See [Section 4.3 Natural Resource Conservation Service](#) for EWP Program eligibility criteria.
- Homeowner insurance policy may cover debris removal from private property and property owners may partner with volunteer organizations
- May complete right-of-entry agreements with entities conducting private property debris removal or using private property as an access point

4.5 Volunteer and Non-Governmental Organizations

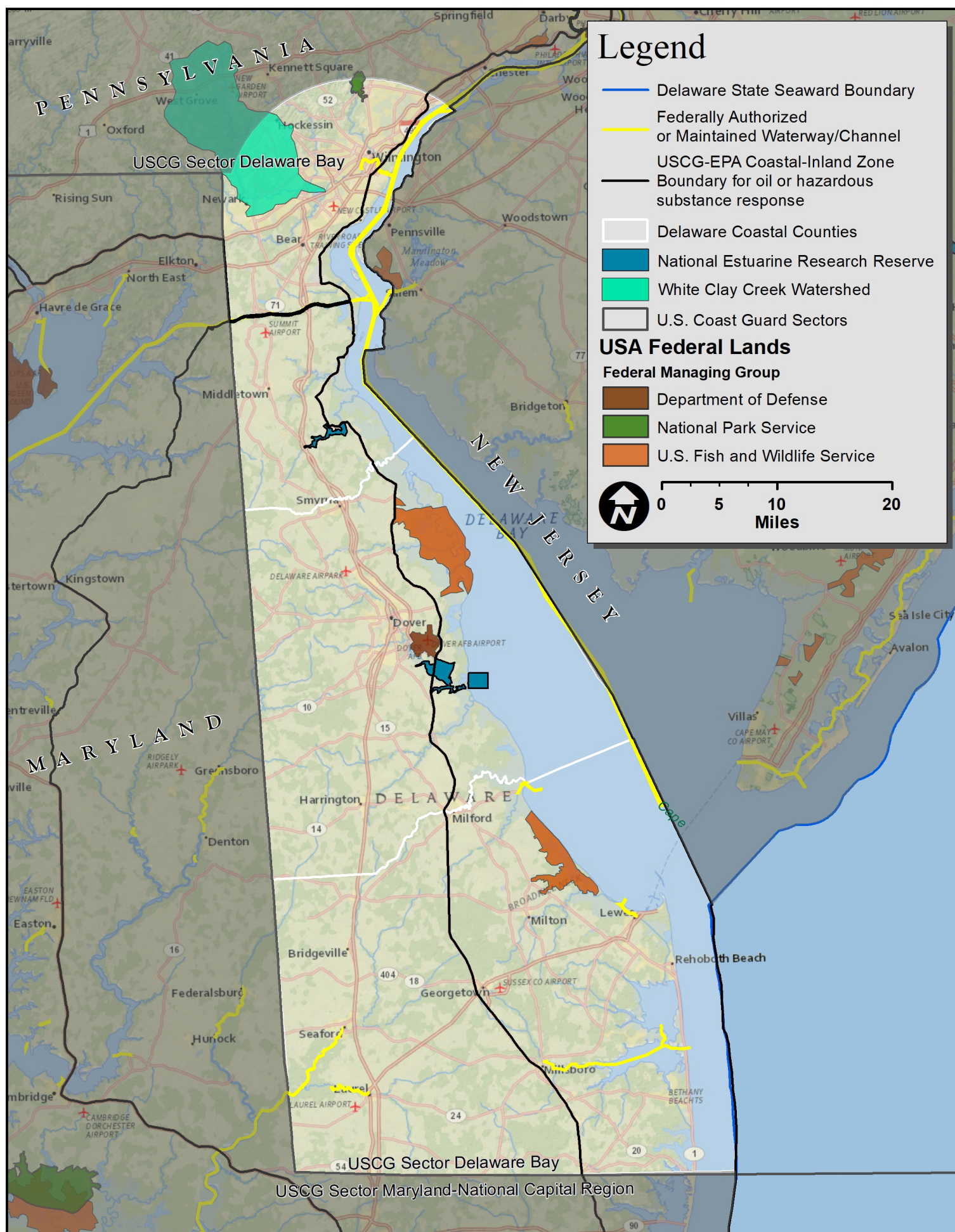
- Certain private nonprofit organizations that serve a public function and have the legal responsibility to remove the debris may serve as an eligible applicant and receive public assistance reimbursement funding from FEMA to perform or contract waterway debris removal following a Stafford Act declaration (FEMA, 2018b)
- Non-governmental organizations may provide debris removal assistance or logistical support through funded projects and programs

4.6 Agency Jurisdiction Map

The “Delaware Waterway Debris Response Map” on the following page displays relevant agency jurisdiction boundaries in the state. After an acute waterway 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](#).

Delaware Incident Waterway Debris Response Map



5. Permitting and Compliance Requirements in Delaware

Before waterway 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 state resource agencies including the Delaware Department of Natural Resources and Environmental Control (DNREC), Delaware State Historic Preservation Office (SHPO), 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 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 waterway 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 Waterway Debris Removal in Delaware” handout in [Section 5.3](#). Organization contact information can be found in [Appendix 8.1](#), and select agency authorities are presented in [Appendix 8.3](#).

5.1 State Agency Requirements

Delaware Department of Natural Resources and Environmental Control (DNREC)

Division of Climate, Coastal, & Energy

Coastal Programs

- Reviews federal permit applications for compliance and consistency with federally-approved laws and policies of the Delaware Coastal Zone Management Program

Division of Water

Wetlands and Subaqueous Lands

- Issues permits for projects that may negatively impact tidal wetlands or tidal and non-tidal waters
- A Wetlands and Subaqueous Lands 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
- Maintains a joint permit application process with USACE for state programmatic general permits
 - If a state programmatic general permit is needed, the application should be sent to DNREC, who will administer the permit on behalf of USACE

Delaware Division of Historical and Cultural Affairs

State Historic Preservation Office (SHPO)

- The Division of Historical and Cultural Affairs identifies, preserves, and interprets Delaware history in public trust for current and future generations. Their organizational activities

foster strong communities, engaged citizens, economic vitality, and a deeper understanding of Delaware's role in world history. These activities are implemented in public trust for current and future generations.

- The goal of compliance is to avoid effects to historic properties
- Assists in the identification of debris staging locations that are absent of historic properties
 - Staging locations may include previous disturbance or hard areas that prevent new ground disturbance

5.2 Federal Agency Requirements

Federal Emergency Management Agency (FEMA)

- Serves as lead federal agency responsible for 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)
 - 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 waterway 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 joint lead agencies that share 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 waterway 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 waterway debris removal project in Delaware 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 manatees. 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 Delaware 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), Philadelphia 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 DNREC, who will administer permits on USACE’s behalf
- Permits that may be required include:
 - **State Programmatic General Permit 18.** Authorizes work and structures such as bulkheads, breakwaters, piers, docks, pilings, rip-rap, dredging and filling, etc.
 - **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 Natural Resources Conservation Service (NRCS) Emergency Watershed Protection (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 waterway debris removal project in Delaware 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 Delaware Bay Estuary Project, Ecological Services 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 Delaware’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 Delaware can be downloaded from USFWS’s [website](#) (USFWS, 2013).
- 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 waterway 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 waterway 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).

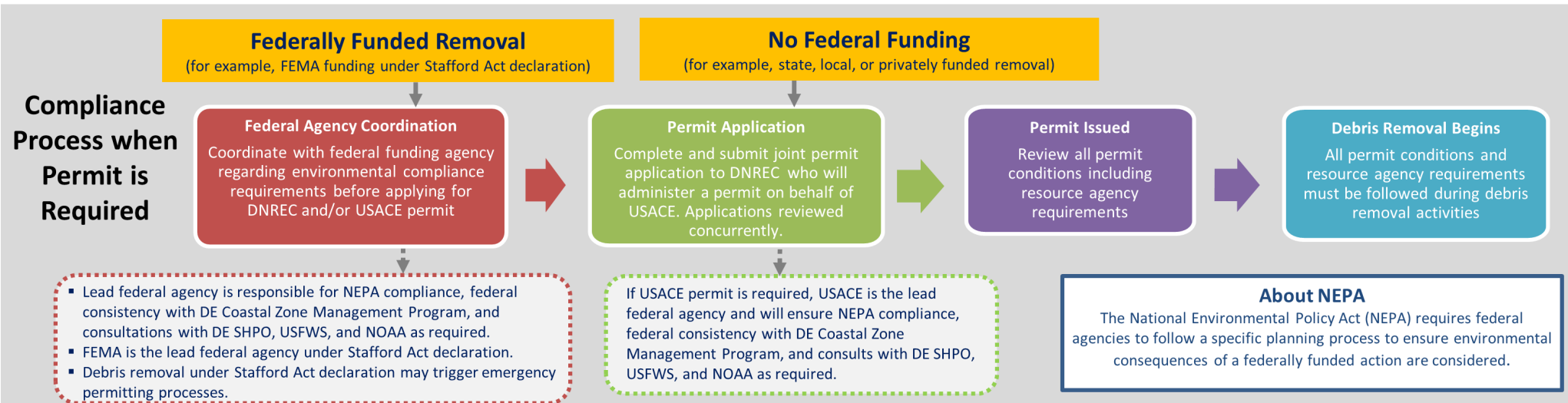
5.3 Permitting and Compliance for Waterway Debris Removal in Delaware Handout

The "Permitting and Compliance for Waterway Debris Removal in Delaware" 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 Waterway Debris Removal in Delaware

- In Delaware, a Delaware Department Natural Resources and Environmental Control (DNREC) Wetlands and Subaqueous Lands 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.
- DNREC and USACE have a joint permit application process. Applicants must apply through DNREC and review will occur concurrently.
- The **lead federal agency** is responsible for compliance with National Environmental Policy Act (NEPA), federal coastal consistency, and consulting with resource agencies including Delaware State Historic Preservation Office (SHPO), U.S. Fish and Wildlife Service (USFWS), and National Oceanic and Atmospheric Administration (NOAA) Fisheries as required.



Agency Requirements and Legislation Details

U.S. Army Corps of Engineers (USACE)
Philadelphia District
Regulatory Program,
Dover Field Office
302-736-9764

- Permit(s) that may be required for debris removal work within waterways and wetlands:
 - SPGP-18** for discharge of dredge or fill material, or work and structures such as bulkheads, breakwaters, piers, docks, and pilings
 - 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 Superfund
 - 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

DE Department of Natural Resources and Environmental Control (DNREC)
Wetlands and Subaqueous Lands Section
302-739-9943

- Issues permits for projects that may negatively impact tidal wetlands or tidal and non-tidal waters
- A Wetlands and Subaqueous Lands 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.
- Permit applications must be submitted through DNREC, who will administer a permit on behalf of USACE

U.S. Fish and Wildlife Service (USFWS)
Delaware Bay Estuary Project, Ecological Services Field Office
302-653-9152

- 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:
 - Endangered Species Act 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 to ensure actions do not encourage development on coastal barriers along the Atlantic coast

National Oceanic and Atmospheric Administration (NOAA)
NOAA Fisheries
ESA: 978-281-9306
EFH: 978-281-9102

- Consultation required if waterway debris response involves federal permits and/or funding (USACE permit, FEMA funding, etc.) to comply with:
 - Endangered Species Act 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

DE Division of Historical and Cultural Affairs
State Historic Preservation Office (SHPO)
302-736-7400

- Serves as the State Historic Preservation Office (SHPO) and assists state and federal agencies in compliance with the National Historic Preservation Act
- Consultation with DE SHPO is required if waterway debris response involves a state or federal agency directly or through funding and/or issuance of permits or licenses (DNREC or USACE permits, FEMA funding, etc.) and has potential to affect historic properties

6. Waterway Debris Response Challenges in Delaware

Waterway 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 Delaware waterway 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

The following response challenges and associated recommendations are compiled based on stakeholder input to improve preparedness for response and recovery operations following an acute waterway debris incident in Delaware. Recommendations include logistics, policy, education and coordination, and resources and technology actions to address response challenges and meet pre- and post-event data needs.

6.1.1 Response Logistics

- **Challenge:** It is difficult to designate and secure onshore and offshore staging locations for debris, especially during flooding events
 - **Actions:**
 - Use the U.S. Environmental Protection Agency (EPA) *Planning for Natural Disaster Debris* document to help pre-identify staging areas
 - *Note: See [Section 6.2 Additional Resources](#) for document reference*
 - Engage marinas as potential staging areas
 - Reach out to the Delaware State Procurement Office to identify available land
 - Explore the possibility of using private lands as staging areas
 - Map pre-approved staging sites on a central platform for efficient mobilization
- **Challenge:** It is difficult to remove sunken vessels
 - **Actions:**
 - Identify requirements and potential participants needed to establish a state abandoned and derelict vessel program
 - Continue advocating for legislation to fund removal of derelict structures and other marine debris

6.1.2 Policy

- **Challenge:** It can be challenging to respond to debris on personal property
 - **Actions:**
 - FEMA has a private property standard operating procedure that could be disseminated and used in training
 - Notify state and national Voluntary Organizations Active in Disaster (VOAD) for guidance, and understand VOAD capabilities and capacity to assist with debris removal on personal property

- Use pre-written right of agreement templates and establish a system for maintaining completed agreements
 - Research local legal authorities and responsibilities
- **Challenge:** It is difficult to determine the legal responsibility and jurisdiction for waterways in Delaware
 - **Actions:**
 - Research Delaware state codes of law for clarification on legal authorities
 - Develop more robust memorandums of understanding and agreement
 - Have a panel discussion with the Delmarva Emergency Task Force (DETF) to present the issue across state borders
 - Create a map or other visual that shows specific waterway ownership and jurisdiction of agencies
 - *Note: See [Section 4.6](#) for a map of agency areas of responsibility*
- **Challenge:** It is difficult to respond to legacy debris
 - **Actions:**
 - Research examples of what has worked in other states for potential application in Delaware
 - Leverage opportunities with partners during annual Delaware Coastal Cleanup Day
- **Challenge:** There is a lack of designated funding for waterway debris removal
 - **Actions:**
 - Review the Delaware Resilient and Sustainable Committees League (RASCL) [funding database](#) for a list of active funding mechanisms
 - *Note: See [Section 6.2 Additional Resources](#) for more information*
 - Delaware Department of Transportation (DelDOT) receives funding through the Capital Transportation Program, which may be leveraged for certain debris removal operations

6.1.3 Education and Coordination

- **Challenge:** There is a need to educate the public about human health and wildlife impacts resulting from marine debris
 - **Actions:**
 - Use social media platforms and schools as a resource to push information out
 - Include information on marine debris impacts at existing outreach events, such as emergency preparedness day at schools or the annual Delaware Coast Day, managed by Delaware Department of Natural Resources and Environmental Control (DNREC)
 - Hire public affairs staff to help raise public awareness
- **Challenge:** There is a need to increase coordination at an interagency level
 - **Actions:**
 - Use the DETF structure that is already in place
 - Maintain working groups from participants involved in the effort to produce this *Guide* to eliminate duplication of efforts

- Establish plans and processes for how to coordinate between agencies during waterway debris response
 - Coordinate through Delaware Emergency Management Agency (DEMA) for additional state resources
- **Challenge:** There is a need to increase pre-planning to ensure historic properties have been identified
 - **Actions:**
 - Improve interagency awareness by including education components in relevant trainings and meetings
 - Coordinate Delaware State Historic Preservation Office (SHPO) budget request with other agencies in order to maximize funds available for matching grants to assist with pre-event planning and historic property survey and inventory
- **Challenge:** There is ambiguity in roles and responsibilities of agencies at various levels of government
 - **Actions:**
 - Collaborate with National Oceanic Atmospheric Administration (NOAA) about the possibility of adding agency authorities and geographic jurisdictions as a bookmark in the Environmental Response Management Application
 - Encourage entities hosting local planning meetings or conferences to invite relevant waterway debris response agencies and organizations
 - Expand the audience list for table-top exercises to include agencies who are not typically involved
- **Challenge:** There is no coordinated messaging plan specific to managing marine debris
 - **Actions:**
 - DelDOT, DEMA, and DNREC Public Information Officers to address public response to marine debris in the draft *Delaware Debris Management Plan* (DelDOT, 2018)

6.1.4 Resources/Technology

- **Challenge:** There is competition for resources from other states, especially during a large-scale event
 - **Actions:**
 - Establish partnerships with surrounding states to share data such as over-flight imagery and debris assessments
 - Develop a region-wide list of available assets and resources that may be shared during an event
 - Encourage agencies and contractors to establish a routine for pre-storm maintenance of equipment
 - *Note: See capabilities matrix in [Appendix 8.2](#) for a list of debris response equipment capabilities by agency*

- **Challenge:** There is a need for a standardized mapping and data sharing process
 - **Actions:**
 - Establish a list of data platforms currently in use by response agencies
 - Encourage sharing of data such as shape files across agencies
- **Challenge:** Workload and staff shortage is a challenge during waterway debris response
 - **Actions:**
 - Explore the option of hiring annuitants to aid in debris response
 - Increase interagency cooperation and cross-training of staff
 - DelDOT may request full-time employees through state budget for waterway debris response
 - DEMA may pre-script job requests for debris management assistance/technical assistance
 - DEMA and DelDOT may coordinate with Delaware Office of Management and Budget to expand emergency standby contracts for debris management and debris monitoring
- **Challenge:** The state of Delaware does not have a common operating picture for waterway debris response
 - **Actions:**
 - Leverage the work that Federal Emergency Management Agency (FEMA) Region III is currently doing to coordinate with the state in developing a common operating picture
 - Encourage the state to build a website that is easily accessible to all federal, state, and local response agencies

6.2 Additional Resources

Delaware Resilient and Sustainable Communities League. (2019). *Resilience Funding Database*. Retrieved from <https://www.derascl.org/funding-database>

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

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U.S. Environmental Protection Agency. (2019). *Planning for natural disaster debris*. Retrieved from https://www.epa.gov/sites/production/files/2019-04/documents/final_pndd_guidance_0.pdf

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- 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>
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8. Appendices

8.1 Contact information

Local Agencies/Organizations

Agency	Division	Topic	Point of Contact	Phone	Email
City of Wilmington	Office of Emergency Management	Emergency Management	Willie J. Patrick, Jr., Director	-	willie.patrick@cj.state.de.us
	Public Works	Debris Management	Rae'nita Shazier, Public Works Admin Coordinator	-	rshazier@wilmingtonde.gov
		Street Cleaning	Preston Foster, Street Cleaning Supervisor	-	pfoster@wilmingtonde.gov
Kent County	Emergency Management	Emergency Management	Colin T. Faulkner, Chief	302-735-2200	colin.faulkner@co.kent.de.us
			Brandon Olenik, Administrative Officer	-	brandon.olenik@co.kent.de.us
New Castle County	Department of Public Safety	Emergency Management	David Carpenter, Director	302-395-2700	david.carpenter@newcastlede.gov
Sussex County	Public Safety	Emergency Operations Center	Joe Thomas, Director	302-855-7801	jthomas@sussexcountyde.gov
			24hr. line	302-855-7803	sussexec@sussexcountyde.gov

State Agencies

Agency	Division	Topic	Point of Contact	Phone	Email
Delaware Department of Agriculture	Animal Health	Emergency Operations	Lisa Tanielian, Management Analyst	302-222-6672	lisa.tanielian@delaware.gov
Delaware Department of Natural Resources and Environmental Control (DNREC) <i>Continued on next page</i>	Climate, Coastal, & Energy	Coastal Management Program	Bonnie Arvay, Environmental Scientist IV	302-739-9283	bonnie.arvay@delaware.gov
		St. Jones National Estuarine Research Reserve	Rachael Phillos, Manager	302-735-3411	rachael.phillos@delaware.gov
	Fish & Wildlife	Natural Resources Police	Douglas Messeck, Captain	302-855-1905	douglas.messeck@delaware.gov
	Parks & Recreation	Cultural Resources	John P. McCarthy, RPA, Cultural Preservation Specialist	302-739-9188	john.mccarthy@delaware.gov
		State Parks	Eric Dawson, Operations	-	eric.dawson@delaware.gov
			Michael Krumrine, Planner IV	302-739-243	michael.krumrine@delaware.gov
	Waste & Hazardous Substances	Emergency Prevention and Response	24-hr Line	1-800-662-8802	-
			Jamie Bethard, Chief	302-632-0264	jamie.bethard@delaware.gov
		Environmental Compliance	David Perrego, Senior Environmental Compliance Specialist	302-739-9403	david.perrego@delaware.gov

State Agencies Continued

Agency	Division	Topic	Point of Contact	Phone	Email
Continued from previous page Delaware Department of Natural Resources and Environmental Control (DNREC)	Water, Wetlands and Subaqueous Lands Section	Permitting and Compliance	Tyler Brown, Section Manager	302-739-9943	tyler.brown@delaware.gov
	Watershed Stewardship	Shoreline and Waterway Management	Scott Figurski	-	scott.figurski@delaware.gov
Delaware Department of Transportation (DelDOT)	Traffic Operations and Management	Debris Management	Dwayne Day, Homeland Security Planner	302-659-4604	dwayne.day@delaware.gov
			Donald Weber, Asst. Director	302-659-651	don.weber@delaware.gov
Delaware Division of Historical and Cultural Affairs	State Historic Preservation Office (SHPO)	Historic and Cultural Preservation	Main Line	302-736-7400	-
			Gwenyth A. Davis, Deputy State Historic Preservation Officer	302-736-7410	gwen.davis@delaware.gov
			John W. Martin, RPA, Cultural Preservation Specialist	302-736-7406	john.w.martin@delaware.gov
Delaware Emergency Management Agency (DEMA)	Planning	Natural Hazards	DEMA Operations/Duty Officer Line	302-734-6040	ops2.dema@delaware.gov
			Erin Norris, Natural Hazards Planner and Public Assistance Officer	302-632-5141	erin.norris@delaware.gov
Delaware Solid Waste Authority (DSWA)	-	Debris Disposal	Justin Wagner, Facility Manager	302-284-8851	jww@dswa.com
University of Delaware	Delaware Sea Grant	-	Kate Fleming, Coastal Ecology Specialist	302-645-4297	kffleming@udel.edu
			Christopher Petrone, Marine Advisory Service Director	302-645-4308	petrone@udel.edu

Federal Agencies

Agency	Division	Topic	Point of Contact	Phone	Email
Bureau of Safety and Environmental Enforcement	Marine Trash and Debris Program	Planning and Coordination	James Sinclair, Marine Ecologist	504-736-2789	james.sinclair@bsee.gov
Federal Emergency Management Agency (FEMA)	Region III	Recovery Division	Kevin Sheridan, Project Manager	202-445-5061	kevin.sheridan@fema.dhs.gov
			Matthew Werner, Disaster & Special Project teams Lead	202-600-1768	matthew.werner@fema.dhs.gov
		Requests for Assistance for Capabilities	Region III Watch Center	215-931-5757	FEMA-R03-RRCC-WATCH@fema.dhs.gov

Federal Agencies Continued

Agency	Division	Topic	Point of Contact	Phone	Email
National Oceanic and Atmospheric Administration (NOAA)	National Marine Fisheries Service or NOAA Fisheries	EFH Consultation	General Contact	978-281-9102	-
			Keith Hanson, Marine Habitat Resource Specialist	410-573-4559	keith.hanson@noaa.gov
		ESA Consultation	General Contact	978-281-9306	nmfs.gar.esa.section7@noaa.gov
			William Barnhill, Fishery Biologist	978-282-8460	william.barnhill@noaa.gov
			Peter Johnsen, Fishery Biologist	978-282-8416	peter.b.johnsen@noaa.gov
	National Ocean Service (NOS) Office of Response and Restoration (ORR) Emergency Response Division	Emergency Response	Frank Csulak, USCG District 5 Scientific Support Coordinator	732-872-3005	frank.csulak@noaa.gov
			John Tarpley, Regional Operations Branch Chief	206-526-6338	john.tarpley@noaa.gov
	NOS, ORR, Marine Debris Division	Response Capabilities and Coordination	Christy Kehoe, Mid-Atlantic Regional Coordinator	240-533-0393	christy.kehoe@noaa.gov
			Jason Rolfe, Response Coordinator	240-533-0442 (o) 301-461-3236 (c)	jason.rolfe@noaa.gov
	NOS, Office of Coast Survey	Navigation and Preparation Response	Edward Owens, Navigation Response Team Regional Manager	757-364-7471	midatlantic.navmanager@noaa.gov
Natural Resources Conservation Service (NRCS)	Emergency Watershed Protection (EWP) Program	EWP Information	Shawn Anderson, Acting EWP Program Manager	202-720-5795	shawn.anderson@wdc.usda.gov
U.S. Army Corps of Engineers (USACE) Philadelphia District	Emergency Management	Emergency Management	James V. Monsu, Chief	215-656-6757	james.v.monsu@usace.army.mil
			Robert Eckhardt, Emergency Management Specialist	215-313-1132	robert.b.eckhardt@usace.army.mil
	Operations	Operations	Timothy J. Kelly, P.E., Deputy Chief	215-656-6721	timothy.j.kelly@usace.army.mil
	Regulatory Program	Permitting and Compliance	Michael Yost, Biologist	267-240-5278	michael.d.yost@usace.army.mil
			John Brundage, Biologist	302-736-9764	john.g.brundage@usace.army.mil
U.S. Coast Guard (USCG) District 5	Sector Delaware Bay	Potential to Release Oil or Hazardous Material	National Response Center (NRC)	1-800-424-8802	-
			24-hr Local Emergency Line	215-271-4940	-
		Port Recovery/Security	Todd Wardwell, CWO	215-271-4860	todd.m.wardwell@uscg.mil

Federal Agencies Continued

Agency	Division	Topic	Point of Contact	Phone	Email
U.S. Environmental Protection Agency (EPA)	Region III	Marine Protection, Research, and Sanctuaries Act	Stephanie Kubico	215-814-2762	kubico.stephanie@epa.gov
		Environmental Protection	Bill Steuteville	215-814-3264	steuteville.william@epa.gov
			David Iacono, Environmental Engineer	215-814-3231	iacono.david@epa.gov
		Potential to release oil or hazardous substance	National Response Center (NRC)	800-424-8802	-
			24-hr Local Emergency Line	215-814-3255	-
U.S. Fish and Wildlife Service (USFWS)	Ecological Services Office	Delaware Bay Estuary Project	Main Line	302-653-9152	R5ES_DPEP@fws.gov

8.2 Response Capabilities

	Yes - In-house Capability	FEMA Region III ¹		NOAA ²	USACE	U.S. EPA ⁷		USCG	DEMA ⁸		DNREC Fish & Wildlife	DNREC Parks & Recreation	DE SHPO	DSWA
	Contract - Contracted capability													
Technology	Aerial photography and video	Yes	Cont.	Yes	Yes	Yes			Yes	Cont.				Yes
	Data Processing Software			Yes		Yes								
	Remote Sensing		Contract	Yes		Yes								
	Multi-beam sonar		Contract	Yes	Yes						Yes			
	Side-scan sonar		Contract	Yes	Yes						Yes			
	Single-beam sonar		Contract	Yes	Yes						Yes			
Manpower	Academic expertise/science & technology liaison				Yes	Yes							Yes	
	Compliance and permitting expertise		Yes	Yes	Yes	Yes							Yes	
	Dive support		Contract	Yes ³	Yes	Yes					Yes			
	Environmental expertise (location of sensitive areas and endangered species present, etc.)	Yes	Cont.	Yes	Yes	Yes					Yes	Yes	Yes	
	Geographic Information System (GIS) mapping and plotting of imagery	Yes	Cont.	Yes	Yes	Yes			Yes			Yes		
	Public Affairs trained staff	Yes	Cont.	Yes	Yes	Yes			Yes		Yes	Yes	Yes	
	State tribal representative				Yes	Yes							Yes	
	Volunteer manpower	Yes	Cont.		Yes									Contract
Equipment	Absorbents and solvents for oil cleanup						Contract							
	Aircraft		Contract	Yes			Yes							
	All-terrain vehicles or other vehicles for difficult terrain		Contract				Yes	Cont.			Yes ⁹	Yes		
	Autonomous Underwater Vehicle													
	Barge/Self-loading barge		Contract											
	Ocean Boom													
	Oil Boom		Contract					Contract						

	Yes - In-house Capability		FEMA Region III ¹	NOAA ²	USACE	U.S. EPA ⁷	USCG	DEMA ⁸	DNREC Fish & Wildlife	DNREC Parks & Recreation	DE SHPO	DSWA
	Contract - Contracted capability											
Equipment (Cont.)	Crane/knuckleboom crane		Contract			Contract						
	Dredge				Yes Cont.	Contract						
	Excavator		Contract		Yes	Contract						
	Ground Penetrating Radar					Contract				Yes		
	In-situ burning											
	Remotely Operated Vehicle		Contract	Yes								
	Unmanned Aerial Vehicle		Contract	Yes	Yes			Yes ¹⁰	Yes			
	Vessels		Contract	Yes	Yes ⁵	Yes			Yes			
Logistics	Contract authority and oversight capabilities		Yes Cont.	Yes	Yes	Yes		Contract			Yes	
	Disposal location for oiled debris											
	Docks for wet storage of vessels		Contract						Yes	Yes		
	Facility suitable for establishing an Emergency Operations Center (EOC)		Yes Cont.					Yes				
	Funding for waterway debris removal		Yes	Yes ⁴	Yes ⁶							
	Pre-approved waterway debris removal contractors		Contract									
	Pre-designated landfill/disposal sites		Contract									Yes
	Pre-event contracts and staged agreements in place		Contract									
	Staging/Off-Loading: Land with water access to stage, offload debris		Contract									
	Staging/Off-Loading: Pre-designated staging, off-loading and special handling areas		Contract									
	Staging area for dry storage of vessels		Yes Cont.							Yes		
	Other logistical support including fuel, housing, food, etc.		Yes Cont.					Contract		Yes		

Note: Capabilities which could be used during waterway debris response in Delaware were self-reported by organizations. 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
- 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
- ⁵USACE Funding available during federally declared disasters via FEMA mission assignment
- ⁶USACE Survey vessels and one airboat available
- ⁷U.S. EPA EPA does not have statutory authority to respond to debris. EPA has authority to respond to oil and hazardous materials pursuant to and consistent with the National Contingency Plan in the inland zone of the U.S.
- ⁸DEMA DEMA is the lead/primary coordinating agency following a disaster. Resources will be coordinated through the state EOC.
- ⁹DEMA DEMA has one all-terrain vehicle
- ¹⁰DEMA DEMA has three operational, licensed drone pilots on staff and two drones

8.3 Select Agency Authorities

8.3.1 State Agency Authorities

Delaware Department of Agriculture

- Delaware Agricultural Lands Preservation Act, 3 Del. C. c 9

Delaware Department of Natural Resources and Environmental Control (DNREC)

- Beach Preservation, 7 Del. C. c 68
- Coastal Zone Act, 7 Del. C. c 70
- Coastal Zone Management Act of 1972, 16 U.S.C § 1451 et seq.
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601 et seq.
- Hazardous Substance Cleanup Act, 7 Del. C. c 91
- Hazardous Waste Management, 7 Del. C. c 63
- Subaqueous Lands, 7 Del. C. c 72
- State Parks, 7 Del. C. c 47
- The Wetlands Act, 7 Del. C. c 66

Delaware Department of Transportation (DelDOT)

- Delaware Transportation Authority Act, 2 Del. C. c 13
- Transportation Trust Fund Act, 2 Del. C. c 14

Delaware Division of Historical and Cultural Affairs

- Archeological Resources in the State, 7 Del. C. c 53
- National Historic Preservation Act, 54 U.S.C. § 3001 et seq.
- State Archives and Historical Objects, 29 Del. C. c 5
- Unmarked Human Burials and Human Skeletal Remains, 7 Del. C. c 54

Delaware Emergency Management Agency (DEMA)

- Emergency Management, 20 Del. C. c 31
- Emergency Management Assistance Compact, 20 Del. C. c 34
- Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C § 5121 et seq.

Delaware National Guard

- Delaware National Guard, 20 Del. C. c 1

Delaware Solid Waste Authority (DSWA)

- Solid Waste, 7 Del. C. § 6025
- Delaware Solid Waste Authority, 7 Del. C. c 64

8.3.2 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)

- 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), Philadelphia 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 Delaware Bay

- 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

8.4 Delaware Legislation Applicable to Waterway Debris Response

- Activation of emergency or disaster response, 20 Del. C. § 3117
- Authority to enhance, preserve, and protect archaeological resources, 7 Del. C. § 5305
- Debris disposal area remediation, 7 Del. C. § 6039
- Hazardous waste management plan, 7 Del. C. § 6303
- Litter Control Law, 16 Del. C. c 6
- Obstructions of navigation in St. Jones' River; penalties, 23 Del. C. § 1108
- Penalties; jurisdiction, abandoned vessels, 23 Del. C. § 1305
- Permit required, wetlands, 7 Del. C. § 6604
- Pollution of streams, 16 Del. C. c 13
- Pollution of waters and lands prohibited, 7 Del. C. § 6203
- Subaqueous lands, jurisdiction, 7 Del. C. § 7203
- Vessels adrift or abandoned on public property and lost, abandoned, or stolen property relating to vessels, 23 Del. C. § 1303



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