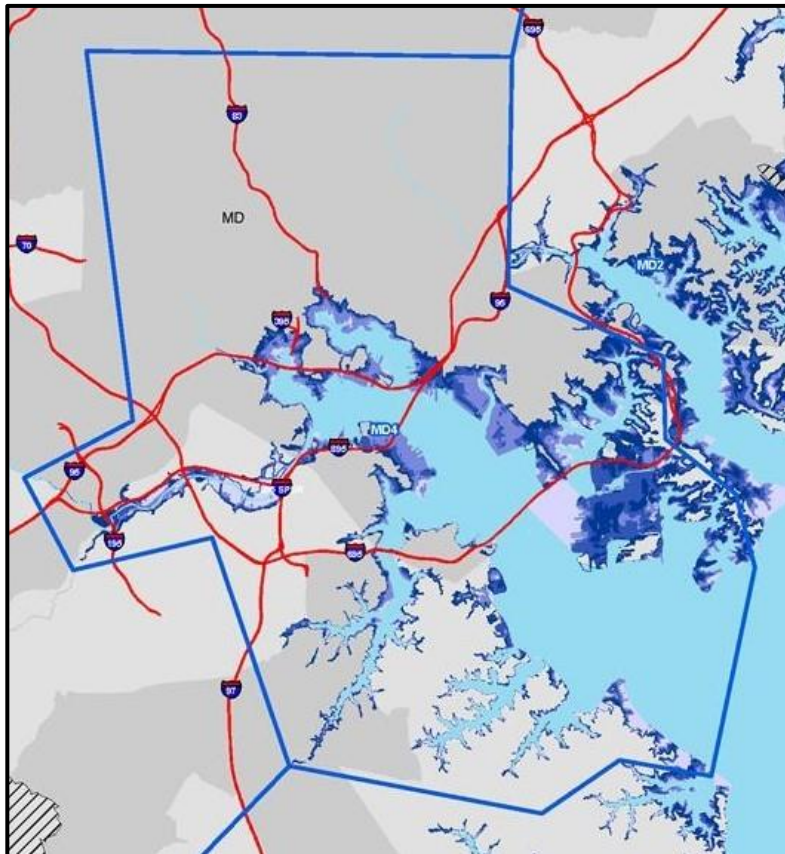

Baltimore Coastal Storm Risk Management Feasibility Study

Appendix G: Environmental and Cultural Resources Coordination



City of Baltimore, Anne Arundel and Baltimore Counties
July 2022



**US Army Corps
of Engineers**
Baltimore District



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DRAFT FINDING OF NO SIGNIFICANT IMPACT

Baltimore Coastal Storm Risk Management Feasibility Study Baltimore City and Baltimore County, Maryland

The U.S. Army Corps of Engineers, Baltimore District (USACE) has conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended. The Draft Integrated Feasibility Report and Environmental Assessment (IFR/EA) dated 1 July 2022, for the Baltimore Coastal Storm Risk Management Feasibility Study addresses coastal storm risk management opportunities and feasibility in Baltimore City and Baltimore County, Maryland. The final recommendation is contained in the report of the Chief of Engineers, dated XX.

The Draft IFR/EA, incorporated herein by reference, evaluated various alternatives that would reduce coastal flood risk in the study area. Protection of Critical Infrastructure would include a Select Structural Plan, which incorporates floodwalls and closure structures at the I-95 and I-895 Tunnels and supporting infrastructure (Ft. McHenry and Harbor Tunnels) as well as floodproofing (at 1-5 percent Annual Exceedance Probability) as non-structural measures in Canton, Fells Point, Inner Harbor, Riverside, and Locust Point areas. The recommended plan has been formulated to reduce economic damages, reduce disruption to critical infrastructure, improve the resiliency of critical infrastructure, and to reduce risk to human health and safety. The plan is the National Economic Development (NED) Plan and includes:

- Cast-in-place concrete T-walls for protection of the I-95 and I-895 tunnels. Two different types of floodwalls were selected and referenced as Type 1 and Type 2. Floodwall Type 1 will be constructed around tunnel entrances while Type 2 will be constructed to protect the tunnel ventilation buildings. Five different loading conditions were used during the analysis of the floodwalls. An additional loading condition, Design Resiliency Check (DRC), was also used and includes water at the top of the wall. The preliminary design results for T-wall types 1 and 2 are provided in Table 1 below.

Table 1. Floodwall dimensions at Transportation Facilities and Tunnel Entrances

Wall Type	Footing		Stem			Key	
	Width (ft)	Thickness (in)	Height (ft)	Thickness at Crest (in)	Thickness at Base (in)	Depth (ft)	Thickness (in)
1	11.5	18	8.2	12	18	2	12
2	6.67	14	5.2	10	14	1.5	12

For all alternatives, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the recommended plan are listed in Table 1:

Table 2: Summary of Potential Effects of the Recommended Plan

	Insignificant effects	Insignificant effects as a result of mitigation	Resource unaffected by action
Aesthetics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anadromous Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Benthic Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Chesapeake Bay Critical Area	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Climate Change and Sea Level Change	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cultural Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Environmental Justice	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floodplains	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geology	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Greenhouse Gases	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hazard, Toxic, and Radioactive Waste	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Use	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Migratory Birds	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noise	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Socioeconomics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Submerged Aquatic Vegetation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Transportation and Navigation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Waterways and Hydrology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wetlands	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utilities	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices (BMPs) as detailed in the IFR/EA will be implemented, if appropriate, to minimize impacts.

The recommended plan will result in approximately 1,068 square feet (0.02 acres) of unavoidable adverse impacts to the Critical Area 100-buffer adjacent to the Ft. McHenry West Ventilation Building. To mitigate for these unavoidable adverse impacts, USACE will develop a Critical Area Buffer Management Plan and/or Landscape Plan which highlights existing

conditions, proposed improvements, and a planting plan with schedules and specifications to fulfil mitigation requirements.

Public review of the Draft IFR/EA and Finding of No Significant Impact (FONSI) will be completed on July 31, 2022. All comments submitted during the public review period were responded to in the Final IFR/EA and FONSI. A 30-day state and agency review of the Final IFR/EA will be completed on July 31, 2022.

Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, USACE determined that the recommended plan will have no effect on federally listed species or their designated critical habitat.

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, USACE determined that historic properties may be adversely affected by the recommended plan. The USACE and the Maryland State Historic Preservation Office are proposed to enter a Programmatic Agreement (PA). All terms and conditions resulting from the agreement shall be implemented in order to minimize adverse impacts to historic properties.

A determination of consistency with the Maryland Coastal Zone Management program pursuant to the Coastal Zone Management Act of 1972 will be obtained from the Maryland Department of the Environment (MDE) prior to construction. Coordination efforts are in progress with Maryland's CZMP. Once a determination has been reached, all related documentation will be included in the IFR/EA.

All applicable environmental laws have been considered and coordination with appropriate agencies and officials is on-going.

Technical, environmental, economic, and cost effectiveness criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on this report, the reviews by other Federal, State and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the recommended plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

Date

Esther S. Pinchasin
Colonel, U.S. Army
Commander and District Engineer

DRAFT

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**BALTIMORE COASTAL STORM RISK MANAGEMENT
FEASIBILITY STUDY**

**DRAFT INTEGRATED FEASIBILITY REPORT &
ENVIRONMENTAL ASSESSMENT**

Coastal Zone Management Act Evaluation

1. Introduction

This document provides a Coastal Zone Management Act (CZMA) evaluation for the Baltimore Coastal Storm Risk Management Study in Baltimore, Maryland. The Baltimore CSRSM project was initiated by the Baltimore Metropolitan Water Resources – Patapsco Urban River Restoration Initiative authority. Committee on Public Works and Transportation of the United States House of Representatives adopted a House resolution on April 30, 1992:

Resolved by the Committee on Public Works and Transportation of the United States House of Representatives, That the Board of Engineers for Rivers and Harbors, is requested to review the report of the Chief of Engineers on the Baltimore Metropolitan Area, Maryland, published as House Document 589, Eighty-seventh Congress, Second Session, and the reports of the Chief of Engineers on Baltimore Harbor and Channels, Maryland, and Virginia, published as House Document 181, Ninety-fourth Congress, First Session, and House Document 86, Eighty-fifth Congress, First Session, and other pertinent reports, to determine whether modifications of the recommendations contained therein are advisable at the present time, in the interest of flood control, hurricane protection, navigation, erosion, sedimentation, fish and wildlife, water quality, environmental restoration, recreation, and other related purposes.

The Baltimore CSRSM project consists of structural and non-structural components to serve as flood protection of critical infrastructure throughout select areas in Baltimore City and Baltimore County, MD. The purpose of the study is to evaluate the feasibility of Federal participation in implementing solution to problems and opportunities associated with coastal storm damage in the study area in order to reduce coastal flood risk to vulnerable populations, properties, infrastructure, and environmental and cultural resources considering future climate and sea level change scenarios. Coastal storms have produced extensive property damage and loss of life resulting from storm surge and flooding in the recent past, particularly from Hurricane Isabel in 2003 which resulted in costs of \$4.8 million to the City of Baltimore, up to \$252 million in total damages in Southern Baltimore County, and one fatality due to flooding.

This analysis and the corresponding Draft Integrated Feasibility Report and Environmental Assessment (IFR/EA) will be submitted to the Maryland Coastal Consistency Review board for concurrence.

1.1. Location

The study authority encompasses Baltimore City and the surrounding metropolitan areas along rivers and other waterways that are subject to flooding, storm surge, and coastal storm damages. The study area includes the Baltimore coastline from the Seagirt Marine Terminal at the Port of Baltimore, around the Inner Harbor through areas of Canton, Fells Point, and Federal Hill, as well as areas around Middle Branch and Martin State Airport in Baltimore County. The study area was defined to include a large number of assets of importance to the Maryland Department of Transportation.

2. Federal Coastal Zone Management Act, 16 U.S.C. 1451 et seq.

The Federal Coastal Zone Management Act (CZMA) of 1972, as amended in 1990, aims to “preserve, protect, develop, and where possible, to restore or enhance the resources of the nation’s coastal zone” (CZMA 1972). To achieve this directive, CZMA requires that all federal agency activity affecting land or water use, or natural resources of the coastal zone (whether the activity is performed within or outside of the coastal zone), be carried out in a manner that is consistent with the enforceable policies of state management programs, consistent with the minimum Federal standards. To implement the CZMA and establish procedures for compliance with its federal consistency provisions, NOAA promulgated regulations in 15 CFR Part 930. As per 15 CFR 930.37, a federal agency may use its NEPA documents as a vehicle for its consistency determination.

2.1. Maryland Coastal Zone Management Program

The Maryland Coastal Zone Management Program (CZMP) was approved by NOAA in 1978, with the Maryland Department of Natural Resources (MDDNR) acting as the lead agency. The CZMP is composed of several state planning and regulatory programs that enforce policies to protect coastal resources and manage coastal uses, including the Chesapeake Bay Critical Area Protection Program (CBCA). Maryland’s coastal zone follows the inland boundary of the counties and Baltimore City bordering the Atlantic Ocean, Chesapeake Bay, and the Potomac River (as far as the municipal limits of Washington, D.C), and includes all local jurisdictions within the counties and Baltimore City (NOAA 2012).

2.2. Findings of the Coastal Zone Consistency Evaluation

Coordination efforts are in progress with Maryland’s CZMP. Once a determination has been reached, this section will be updated. Completed CZMA Coastal Resources and Coastal Uses forms relevant to the project are included in this Appendix.

Table 1: CZMA Enforceable Policies and Status of Compliance

TITLE OF ENFORCEABLE POLICY	STATUS OF COMPLIANCE
Core Policies	Pending.
The Chesapeake and Atlantic Coastal Bays Critical Area	Pending.
Tidal Wetlands	Not applicable.
Non-Tidal Wetlands	Not applicable.
Forests	Not applicable.
Historical and Archaeological Sites	Pending.
Living Aquatic Resources	Not applicable.
Mineral Extraction	Not applicable.
Electrical Generation and Transmission	Not applicable.
Tidal Shore Erosion Control	Not applicable.
Oil and Natural Gas Facilities	Not applicable.
Dredging and Disposal of Dredged Material	Not applicable.
Navigation	Not applicable.
Transportation	Pending.
Agriculture	Not applicable.
Development	Not applicable.
Sewage Treatment	Not applicable.



Coastal Zone Management Program - Core Policies Checklist

Name of Project:

Baltimore Coastal Storm Risk Management (CSRМ) Feasibility Study

5.1. CORE POLICIES

5.1.1. Quality of Life

Quality of Life Policy 1- Air Quality. It is State policy to maintain that degree of purity of air resources which will protect the health, general welfare, and property of the people of the State. MDE (C9) Md. Code Ann., Envir. §§ 2-102 to -103.

Select appropriate response:

- Project will be consistent with Air Quality policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Air Quality Analysis completed for the project determined when following the planned construction schedule, the project will not result in emissions exceeding the NOx emission threshold of 100 tpy.

Quality of Life Policy 2 – Noise. The environment shall be free from noise which may jeopardize health, general welfare, or property, or which degrades the quality of life. MDE (C9) COMAR 26.02.03.02.

Select appropriate response:

- Project will be consistent with Noise policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Proposed excess noise during the construction of the project will be consistent with the typical noise conditions experienced through the industrialized setting. Any excess noise will be temporary and only during construction of the proposed flood proofing measures.



Coastal Zone Management Program - Core Policies Checklist

Quality of Life Policy 3– Protection of State Wild Lands. The unique ecological, geological, scenic, and contemplative aspects of State wild lands shall not be affected in a manner that would jeopardize the future use and enjoyment of those lands as wild. DNR (C7) Md. Code Ann., Nat. Res. §§ 5-1201, -1203.

Select appropriate response:

- Project will be consistent with State Wild Lands Protection policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRSM study will not impact State Wild Lands as it is limited to industrialized and urban areas.

Quality of Life Policy 4 – Protection of State Lands & Cultural Resources. The safety, order, and natural beauty of State parks and forests, State reserves, scenic preserves, parkways, historical monuments and recreational areas shall be preserved. DNR (B1) Md. Code. Ann., Nat. Res. § 5-209.

Select appropriate response:

- Project will be consistent with Protection of State Lands & Cultural Resources policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Under Section 106 of the National Historic Preservation Act and its implementing regulations at 36 Code of Federal Regulations Part 800, the USACE assessed potential effects historic properties that are within the proposed project’s APE. Coordination with SHPO will continue through the study period

Quality of Life Policy 5 – Natural Character & Scenic Value of Rivers & Waterways. The natural character and scenic value of a river or waterway must be given full consideration before the development of any water or related land resources including construction of improvements, diversions, roadways, crossings, or channelization. MDE/DNR (C7) Md. Code Ann., Nat. Res. § 8-405; COMAR 26.17.04.11.

Select appropriate response:

- Project will be consistent with policy protecting Natural Character & Scenic Value of Rivers & Waterways.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

There are no scenic or wild rivers to be impacted by the Baltimore CSRSM study.



Coastal Zone Management Program - Core Policies Checklist

Quality of Life Policy 6 –Natural Flow of Scenic & Wild Rivers. A dam or other structure that impedes the natural flow of a scenic or wild river may not be constructed, operated, or maintained, and channelization may not be undertaken, until the applicant considers alternatives less harmful to the scenic and wild resource. Construction of an impoundment upon a scenic or wild river is contrary to the public interest, if that project floods an area of unusual beauty, blocks the access to the public of a view previously enjoyed, or alters the stream's wild qualities. MDE/DNR (C7) Md. Code Ann., Nat. Res. § 8-406; COMAR 26.17.04.11.

Select appropriate response:

- Project will be consistent with policy protecting Natural Flow of Scenic & Wild Rivers.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRM will not create any dams or impoundments for this project.

Quality of Life Policy 7 – Atlantic Coast Development. Any land clearing, construction activity, or the construction or placement of permanent structures is prohibited within the Beach Erosion Control District except the construction and installation of a qualified submerged renewable energy line, if the project does not result in any significant permanent environmental damage to the Beach Erosion Control District and is not constructed or installed within the Assateague State Park, and any project or activity specifically for storm control, beach erosion and sediment control, or maintenance projects designed to benefit the Beach Erosion Control District. MDE/DNR (B1) Md. Code Ann., Nat. Res. § 8-1102.

Select appropriate response:

- Project will be consistent with policy ensuring Environmentally Beneficial Atlantic Shoreline Development.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRM study does not take place in a Beach Erosion Control District.



Coastal Zone Management Program - Core Policies Checklist

Quality of Life Policy 8 – Integrity & Natural Character of Assateague Island. Activities which will adversely affect the integrity and natural character of Assateague Island will be inconsistent with the State's Coastal Management Program, and will be prohibited. MDE/DNR (B1) Md. Code. Ann., Nat. Res. §§ 5-209, 8-1102.

Select appropriate response:

- Project will be consistent with policy protecting the Integrity & Natural Character of Assateague Island.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRSM study does not take place on Assateague Island.

Quality of Life Policy 9 – Public Outreach. An opportunity for a public hearing shall be provided for projects in non-tidal waters that dredge, fill, bulkhead, or change the shoreline; construct or reconstruct a dam; or create a waterway, except in emergency situations. MDE (A3) COMAR 26.17.04.13A.

Select appropriate response:

- Project will be consistent with Public Outreach policy for relevant projects.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

A public meeting will be held during the public review period of the draft feasibility report and environmental assessment. However, the project will not impact non-tidal wetlands; therefore, no no public outreach will be held specific to that topic.

Quality of Life Policy 10 – Erosion & Sediment Control. Soil erosion shall be prevented to preserve natural resources and wildlife; control floods; prevent impairment of dams and reservoirs; maintain the navigability of rivers and harbors; protect the tax base, the public lands, and the health, safety and general welfare of the people of the State, and to enhance their living environment. MDA (C4) Md. Code Ann., Agric. § 8-102(d).

Select appropriate response:

- Project will be consistent with Erosion & Sediment Control policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

All erosion and sediment control measures will follow Federal, State, and local guidelines, as well as MDE-provided Best Management Practices.



Coastal Zone Management Program - Core Policies Checklist

Quality of Life Policy 11 – Safeguards for Outer Continental Shelf Development. Operations on the Outer Continental Shelf must be conducted in a safe manner by well-trained personnel using technology, precautions, and techniques sufficient to prevent or minimize the likelihood of blowouts, loss of well control, fires, spillages, physical obstruction to other users of the waters or subsoil and seabed, or other occurrences which may cause damage to the environment or property, or which may endanger life or health. (B2) Md. Code Ann., Envir. §§ 17-101 to -403; COMAR 26.24.01.01; COMAR 26.24.02.01, .03; COMAR 26.24.05.01.

Select appropriate response:

- Project will be consistent with policy ensuring Safeguards for Outer Continental Shelf Development.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRM study does not occur in the Outer Continental Shelf.



Coastal Zone Management Program - Core Policies Checklist

5.1.2. Waste & Debris Management

Waste & Debris Management Policy 1 – Hazardous Waste Management. Controlled hazardous substances may not be stored, treated, dumped, discharged, abandoned, or otherwise disposed anywhere other than a permitted controlled hazardous substance facility or a facility that provides an equivalent level of environmental protection. MDE (D4) Md. Code Ann., Envir. § 7-265(a).

Select appropriate response:

- Project will be consistent with Hazardous Waste Management policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Hazardous Waste Management will follow the USACE Engineering Regulation and Environmental Compliance Policies.

Waste & Debris Management Policy 2 – Hazardous Waste Management in Port of Baltimore. A person may not introduce in the Port of Baltimore any hazardous materials, unless the cargo is properly classed, described, packaged, marked, labeled, placarded, and approved for highway, rail, or water transportation. MDOT (D3) COMAR 11.05.02.04A.

Select appropriate response:

- Project will be consistent with Hazardous Waste Management in Port of Baltimore policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

No hazardous materials will be introduced at the Port of Baltimore.



Coastal Zone Management Program - Core Policies Checklist

5.1.3. Water Resources Protection & Management

Water Resources Protection & Management Policy 1 – Pollution Discharge Permit. No one may add, introduce, leak, spill, or emit any liquid, gaseous, solid, or other substance that will pollute any waters of the State without State authorization. MDE (A5) Md. Code Ann., Envir. §§ 4-402, 9-101, 9-322.

Select appropriate response:

- Project will be consistent with water policy requiring a Pollution Discharge Permit.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRSM study will comply with the project NPDES permit and all other State regulated programs.

Water Resources Protection & Management Policy 2 – Protection of Designated Uses. All waters of the State shall be protected for water contact recreation, fish, and other aquatic life and wildlife. Shellfish harvesting and recreational trout waters and waters worthy of protection because of their unspoiled character shall receive additional protection. MDE (A1) COMAR 26.08.02.02.

Select appropriate response:

- Project will be consistent with Protection of Designated Uses policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

No in-water work will take place for the Baltimore CSRSM study.

Water Resources Protection & Management Policy 3 – Prohibition of Harmful Toxic Impacts. The discharge of any pollutant which will accumulate to toxic amounts during the expected life of aquatic organisms or produce deleterious behavioral effects on aquatic organisms is prohibited. MDE (A4) COMAR 26.08.03.01.

Select appropriate response:

- Project will be consistent with water policy Prohibiting Harmful Toxic Impacts.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

No in-water work will take place for the Baltimore CSRSM study.



Coastal Zone Management Program - Core Policies Checklist

Water Resources Protection & Management Policy 4 – Pre-Development Discharge Permit

Requirement. Before constructing, installing, modifying, extending, or altering an outlet or establishment that could cause or increase the discharge of pollutants into the waters of the State, the proponent must hold a discharge permit issued by the Department of the Environment or provide an equivalent level of water quality protection. MDE (D6) Md. Code Ann., Envir. § 9-323(a).

Select appropriate response:

- Project will be consistent with water policy requiring a Pre-Development Discharge Permit.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRМ study will comply with all state erosion and sediment control practices as well as all state best management practices to prevent discharge of pollutants from the construction site(s).

Water Resources Protection & Management Policy 5 – Use of Best Available Technology or Treat to Meet Standards

The use of best available technology is required for all permitted discharges into State waters, but if this is insufficient to comply with the established water quality standards, additional treatment shall be required and based on waste load allocation. MDE (D4) COMAR 26.08.03.01C.

Select appropriate response:

- Project will be consistent with Use of Best Available Technology or Treat to Meet Standards water policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRМ study will comply with all state erosion and sediment control practices as well as all state best management practices to prevent discharge of pollutants from the construction site(s).



MARYLAND Coastal Zone Management Program - Core Policies Checklist

Water Resources Protection & Management Policy 6 – Control of Thermal Discharges. Thermal discharges shall be controlled so that the temperature outside the mixing zone (50 feet radially from the point of discharge) meets the applicable water quality criteria or discharges comply with the thermal mixing zone criteria. MDE (D4) COMAR 26.08.03.03C.

Select appropriate response:

- Project will be consistent with Control of Thermal Discharges water policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRM will not require control of thermal discharges.

Water Resources Protection & Management Policy 7 – Pesticide Storage. Pesticides shall be stored in an area located at least 50 feet from any water well or stored in secondary containment approved by the Department of the Environment. MDA (C4) COMAR 15.05.01.06.

Select appropriate response:

- Project will be consistent with Pesticides Storage water policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRM study does not require the use of pesticides.



Coastal Zone Management Program - Core Policies Checklist

Water Resources Protection & Management Policy 8 – Stormwater Management. Any development or redevelopment of land for residential, commercial, industrial, or institutional purposes shall use small-scale non-structural stormwater management practices and site planning that mimics natural hydrologic conditions, to the maximum extent practicable. Development or redevelopment will be consistent with this policy when channel stability and 100 percent of the average annual predevelopment groundwater recharge are maintained, nonpoint source pollution is minimized, and structural stormwater management practices are used only if determined to be absolutely necessary. MDE (C9) Md. Code Ann., Envir. § 4-203; COMAR 26.17.02.01, .06.

Select appropriate response:

- Project will be consistent with Stormwater Management policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRSM study will comply with all applicable City, County, and State Stormwater Management practices.

Water Resources Protection & Management Policy 9 – Unpermitted Dumping of Used Oil. Unless otherwise permitted, used oil may not be dumped into sewers, drainage systems, or any waters of the State or onto any public or private land. MDE (D4) Md. Code Ann., Envir. § 5-1001(f).

Select appropriate response:

- Project will be consistent with Unpermitted Dumping of Used Oil water policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

A spill plan is anticipated to be required before construction begins.

Water Resources Protection & Management Policy 10 – Toxicity Monitoring. If material being dumped into Maryland waters or waters off Maryland’s coastline has demonstrated actual toxicity or potential for being toxic, the discharger must perform biological or chemical monitoring to test for toxicity in the water. MDE (A5) COMAR 26.08.03.07(D); COMAR 26.08.04.01.

Select appropriate response:

- Project will be consistent with Toxicity Monitoring water policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRSM study will not result in material being dumped in Maryland waters or coastlines.



MARYLAND Coastal Zone Management Program - Core Policies Checklist

Water Resources Protection & Management Policy 11 – Public Outreach. Public meetings and citizen education shall be encouraged as a necessary function of water quality regulation. MDE (A2) COMAR 26.08.01.02E(3).

Select appropriate response:

- Project will be consistent with Public Outreach water policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

A public meeting will be planned if requested.

Water Resources Protection & Management Policy 12 - No Adverse Impact from Water Appropriation. Any water appropriation must be reasonable in relation to the anticipated level of use and may not have an unreasonable adverse impact on water resources or other users of the waters of the State. MDE (C9) COMAR 26.17.06.02.

Select appropriate response:

- Project will be consistent with policy ensuring No Adverse Impact from Water Appropriations.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

A water appropriations permit is not required.



Coastal Zone Management Program - Core Policies Checklist

5.1.4. Flood Hazards & Community Resilience

Flood Hazards & Community Resilience Policy 1 – No Adverse Impact. Projects in coastal tidal and non-tidal flood plains which would create additional flooding upstream or downstream, or which would have an adverse impact upon water quality or other environmental factors, are contrary to State policy. MDE (C2) Md. Code Ann., Envir. § 5-803; COMAR 26.17.05.04A.

Select appropriate response:

- Project will be consistent with No Adverse Impact flood hazard policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRM Study will not create flooding or impact flood risks in a negative way.

Flood Hazards & Community Resilience Policy 2 – Non-Tidal Waters and Non-Tidal Floodplains. The following policies apply to projects in non-tidal waters and non-tidal floodplains, but not non-tidal wetlands. MDE (C2) COMAR 26.17.04.01, .07,.11.

Flood Hazards & Community Resilience Policy 2a – 1-Foot Freeboard Above 100-year Flood.

Proposed floodplain encroachments, except for roadways, culverts, and bridges, shall be designed to provide a minimum of 1 foot of freeboard above the elevation of the 100-year frequency flood event. In addition, the elevation of the lowest floor of all new or substantially improved residential, commercial, or industrial structures shall also be at least 1 foot above the elevation of the 100-year frequency flood event.

Select appropriate response:

- Project will be consistent with policy requiring a 1-Foot Freeboard Above 100-Year Flood for Construction in flood hazard areas.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRM study will not impact non-tidal waters or non-tidal floodplains.



Coastal Zone Management Program - Core Policies Checklist

Flood Hazards & Community Resilience Policy 2b – Stability of Unlined Earth Channels.

Proposed unlined earth channels may not change the tractive force associated with the 2-year and the 10-year frequency flood events, by more than 10 percent, throughout their length unless it can be demonstrated that the stream channel will remain stable.

Select appropriate response:

- Project will be consistent with policy ensuring Stability of Unlined Earth Channels.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRSM Study will not create flooding or impact flood risks in a negative way.

Flood Hazards & Community Resilience Policy 2c – Stability of Lined Channels. Proposed lined channels may not change the tractive force associated with the 2-year and the 10-year frequency flood events, by more than 10 percent, at their downstream terminus unless it can be demonstrated that the stream channel will remain stable.

Select appropriate response:

- Project will be consistent with policy ensuring Stability of Line Channels.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRSM Study will not create flooding or impact flood risks in a negative way.

Flood Hazards & Community Resilience Policy 2d – Prohibition of Dam Construction in High Risk Areas. Category II, III, or IV dams may not be built or allowed to impound water in any location where a failure is likely to result in the loss of human life or severe damage to streets, major roads, public utilities, or other high value property.

Select appropriate response:

- Project will be consistent with policy Prohibiting Dam Construction in High Risk Areas.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRSM Study will not result in dam construction.



Coastal Zone Management Program - Core Policies Checklist

Flood Hazards & Community Resilience Policy 2e – Prohibition of Projects That Increase Risk Unless Mitigation Requirements Are Met. Projects that increase the risk of flooding to other property owners are generally prohibited, unless the area subject to additional risk of flooding is purchased, placed in designated flood easement, or protected by other means acceptable to the Maryland Department of the Environment.

Select appropriate response:

- Project will be consistent with policy Prohibiting Projects That Increase Flood Risk Unless Mitigation Requirements Are Met.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRSM Study will not create flooding or impact flood risks in a negative way.

Flood Hazards & Community Resilience Policy 2f – Prohibition of Construction or Substantial Improvements in 100-Year Floodplain. The construction or substantial improvement of any residential, commercial, or industrial structures in the 100-year frequency floodplain and below the water surface elevation of the 100-year frequency flood may not be permitted. Minor maintenance and repair may be permitted. The modifications of existing structures for flood-proofing purposes may be permitted. Flood-proofing modifications shall be designed and constructed in accordance with specifications approved by the Maryland Department of the Environment.

Select appropriate response:

- Project will be consistent with policy Prohibiting Construction or Substantial Improvements in 100-Year Floodplain.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRSM Study is consistent with FEMA floodplain management regulations outlined in 44CFR Section 60.3(c) Floodplain Management Criteria for Flood-Prone Areas.



Coastal Zone Management Program - Core Policies Checklist

Flood Hazards & Community Resilience Policy 2g – Channelization Is Discouraged.

Channelization shall be the least favored flood control technique.

Select appropriate response:

- Project will be consistent with policy Discouraging Channelization.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRM Study will not create flooding or impact flood risks in a negative way.

Flood Hazards & Community Resilience Policy 2h – Preference of Multi-Purpose Use Projects, Project Accountability, & 50% Reduction in Damages. Multiple purpose use shall be preferred over single purpose use, the proposed project shall achieve the purposes intended, and, at a minimum, project shall provide for a 50 percent reduction of the average annual flood damages.

Select appropriate response:

- Project will be consistent with policy that ensures a Preference to Multi-Purpose Use Projects, Project Accountability & 50% Reduction in Damages.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRM study is proposing a combination of structural and nonstructural measures throughout the project area.

Flood Hazards & Community Resilience Policy 3 – Development-Related Runoff Restrictions for the Gwynne Falls and Jones Falls Watersheds. Development may not increase the downstream peak discharge for the 100-year frequency storm event in the following watersheds and all their tributaries: Gwynns Falls in Baltimore City and Baltimore County; and Jones Falls in Baltimore City and Baltimore County. MDE (C2) COMAR 26.17.02.07.

Select appropriate response:

- Project will be consistent with policy that Restricts Development-Related Runoff in the Gwynne Falls & Jones Falls Watersheds.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRM Study is not expected to increase urbanization; therefore, no changes in flow are expected.



Coastal Zone Management Program - Critical Area Policies Checklist

Name of Project:

Baltimore Coastal Storm Risk Management (CSRМ) Feasibility Study

5.2 COASTAL RESOURCES

5.2.1 The Chesapeake and Atlantic Coastal Bays Critical Area

In addition to the policies in this section, the laws approved by NOAA implementing the Chesapeake and Atlantic Coastal Bays Critical Area Protection Program are enforceable policies.

Critical Area Policy 1 – Scope of the Buffer. In the Critical Area, a minimum 100-foot vegetated buffer shall be maintained landward from the mean high water line of tidal waters, the edge of each bank of tributary streams, and the landward edge of tidal wetlands. The buffer shall be expanded in sensitive areas in accordance with standards adopted by the Critical Area Commission. The buffer is not required for agricultural drainage ditches if the adjacent agricultural land has in place best management practices that protect water quality. Mitigation or other measures for achieving water quality and habitat protection objectives may be necessary in buffer areas for which the Critical Area Commission has modified the minimum applicable requirements due to the existing pattern of development. CAC C9 COMAR 27.01.09.01, .01-6, .01-8.

Select appropriate response:

- Project will be consistent with Scope of Buffer policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRМ Study will complete a Buffer Management Protection Plan and/or Landscape Plan in compliance with the Baltimore City Critical Area Management Program (2011 edition).

Critical Area Policy 2 – Buffer Disturbance. Disturbance to a buffer in the Critical Area is only authorized for a shore erosion control measure or for new development or redevelopment that is water-dependent; meets a recognized private right or public need; minimizes the adverse effects on water quality and fish, plant, and wildlife habitat; and, insofar as possible, locates nonwater-dependent structures or operations associated with water-dependent projects or activities outside the buffer. Disturbance to a buffer may only be authorized in conjunction with mitigation performed in accordance with an approved buffer management plan. CAC (C9) COMAR 27.01.03.03; COMAR 27.01.09.01, .01-2, .01-3.

- Project will be consistent with Buffer Disturbance policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRМ Study will complete a Buffer Management Protection Plan and/or Landscape Plan in compliance with the Baltimore City Critical Area Management Program (2011 edition).



Coastal Zone Management Program - Critical Area Policies Checklist

Critical Area Policy 3 - Protection of Bird Nesting Areas. Colonial water bird nesting sites in the Critical Area may not be disturbed during breeding season. CAC (C9) COMAR 27.01.09.04.

Select appropriate response:

- Project will be consistent with policy Protecting Bird Nesting Areas.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 4 - Protection of Waterfowl. New facilities in the Critical Area shall not interfere with historic waterfowl concentration and staging areas. CAC (C9) COMAR 27.01.09.04.

Select appropriate response:

- Project will be consistent with the Protection of Waterfowl policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 5 -Restrictions on Stream Alterations. Physical alterations to streams in the Critical Area shall not affect the movement of fish. CAC (C9) COMAR 27.01.09.05.

Select appropriate response:

- Project will be consistent with the Restrictions on Stream Alterations policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:



Coastal Zone Management Program - Critical Area Policies Checklist

Critical Area Policy 6 - Prohibition of Riprap and Artificial Surfaces. The installation or introduction of concrete riprap or other artificial surfaces onto the bottom of natural streams in the Critical Area is prohibited unless water quality and fisheries habitat will be improved. CAC (C9) COMAR 27.01.09.05.

Select appropriate response:

- Project will be consistent with the Prohibition of Riprap and Artificial Surfaces policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 7 - Prohibition of Dams and Structures. The construction or placement of dams or other structures in the Critical Area that would interfere with or prevent the movement of spawning fish or larval forms in streams is prohibited. CAC (C9) COMAR 27.01.09.05.

Select appropriate response:

- Project will be consistent with the Prohibition of Dams and Structures policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 8 - Restrictions on Stream Crossings and Impacts. Development may not cross or affect a stream in the Critical Area, unless there is no feasible alternative and the design and construction of the development prevents increases in flood frequency and severity that are attributable to development; retains tree canopy and maintains stream water temperature within normal variation; provides a natural substrate for affected streambeds; and minimizes adverse water quality and quantity impacts of stormwater. CAC (C9) COMAR 27.01.02.04.

Select appropriate response:

- Project will be consistent with the Restrictions on Stream Crossings and Impacts policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:



Coastal Zone Management Program - Critical Area Policies Checklist

Critical Area Policy 9 - Time of Year Restrictions for Construction in Streams. The construction, repair, or maintenance activities associated with bridges or other stream crossings or with utilities and roads, which involve disturbance within the buffer or which occur in stream are prohibited between March 1 and May 15. CAC (C9) COMAR 27.01.09.05.

Select appropriate response:

- Project will be consistent with the Stream Construction Time-of-Year Restrictions policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 10 - Avoid & Minimize Construction Impacts in Habitat Areas. Roads, bridges, or utilities may not be constructed in any areas designated to protect habitat, including buffers, in the Critical Area, unless there is no feasible alternative and the road, bridge, or utility is located, designed, constructed, and maintained in a manner that maximizes erosion protection; minimizes negative impacts to wildlife, aquatic life, and their habitats; and maintains hydrologic processes and water quality. CAC (C9) COMAR 27.01.02.03C, .04C, .05C.

Select appropriate response:

- Project will be consistent with the Avoid or Minimize Habitat Area Impacts policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:



Coastal Zone Management Program - Critical Area Policies Checklist

Critical Area Policy 11 – Intensely Developed Areas. The following policies apply in those areas of the Critical Area that are determined to be areas of intense development.

- To the extent possible, fish, wildlife, and plant habitats should be conserved.
- Development and redevelopment shall improve the quality of runoff from developed areas that enters the Chesapeake or Atlantic Coastal Bays or their tributary streams.
- At the time of development or redevelopment, appropriate actions must be taken to reduce stormwater pollution by 10%. Retrofitting measures are encouraged to address existing water quality and water quantity problems from stormwater.
- Development activities may cross or affect a stream only if there is no feasible alternative, and those activities must be constructed to prevent increases in flood frequency and severity attributable to development, retain tree canopy, maintain stream water temperatures within normal variation, and provide a natural substrate for affected streambeds.
- Areas of public access to the shoreline, such as foot paths, scenic drives, and other public recreational facilities, shall be maintained and, if possible, are encouraged to be established.
- Ports and industries which use water for transportation and derive economic benefits from shore access, shall be located near existing port facilities or in areas identified by local jurisdictions for planned future port facility development and use if this use will provide significant economic benefit to the State or local jurisdiction.
- Development shall be clustered to reduce lot coverage and maximize areas of natural vegetation.
- Development shall minimize the destruction of forest and woodland vegetation.

CAC (C9) COMAR 27.01.02.03.

Select appropriate response:

- Project will be consistent with the Intensely Developed Areas policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRM Study will complete a Buffer Management Protection Plan and/or Landscape Plan in compliance with the Baltimore City Critical Area Management Program (2011 edition).



Coastal Zone Management Program - Critical Area Policies Checklist

Critical Area Policy 12 – Limited Development Areas & Resource Conservation Areas. The following policies apply in those portions of the Critical Area that are not areas of intense development.

- Development shall maintain, and if possible, improve the quality of runoff and ground water entering the Chesapeake and Coastal Bays.
- To the extent practicable, development shall maintain existing levels of natural habitat.
- All development sites shall incorporate a wildlife corridor system that connects undeveloped vegetated tracts onsite with undeveloped vegetated tracts offsite.
- All forests and developed woodlands that are cleared or developed shall be replaced on not less than an equal area basis.
- If there are no forests on a proposed development site, the site shall be planted to provide a forest or developed woodland cover of at least 15 percent.
- Development on slopes equal to or greater than 15 percent, as measured before development, shall be prohibited unless the project is the only effective way to maintain the slope and is consistent with other policies.
- To the extent practicable, development shall be clustered to reduce lot coverage and maximize areas of natural vegetation.
- Lot coverage is limited to 15 percent of the site.

CAC (C9) COMAR 27.01.02.04.

Select appropriate response:

- Project will be consistent with policy regarding Limited Development Areas and Resource Conservation Areas.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRMS Study will complete a Buffer Management Protection Plan and/or Landscape Plan in compliance with the Baltimore City Critical Area Management Program (2011 edition) and complete the appropriate Baltimore City pollutant removal worksheets.



Coastal Zone Management Program - Critical Area Policies Checklist

Critical Area Policy 13 - Public Facilities Allowed With Restrictions in Buffer. Public beaches or other public water-oriented recreation or education areas including, but not limited to, publicly owned boat launching and docking facilities and fishing piers may be permitted in the buffer in portions of the Critical Area not designated as intensely developed areas only if adequate sanitary facilities exist; service facilities are, to the extent possible, located outside the Buffer; permeable surfaces are used to the extent practicable, if no degradation of ground water would result; and disturbance to natural vegetation is minimized. CAC (C9) COMAR 27.01.03.08.

Select appropriate response:

- Project will be consistent with policy allowing Public Facilities within Buffer with Restrictions.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 14 - Water-Dependent Research Facilities. Water-dependent research facilities or activities may be permitted in the buffer, if nonwater-dependent structures or facilities associated with these projects are, to the extent possible, located outside the buffer. CAC (C9) COMAR 27.01.03.09.

Select appropriate response:

- Project will be consistent with the Water-Dependent Research Facilities policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 15 – Siting Industrial & Port-Related Facilities. Water-dependent industrial and port-related facilities may only be located in the portions of areas of intense development designated as modified buffer areas. CAC (C9) COMAR 27.01.03.05.

Select appropriate response:

- Project will be consistent with policy regarding Siting Industrial and Port-Related Facilities.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:



Coastal Zone Management Program - Critical Area Policies Checklist

Critical Area Policy 16 -Restrictions on Waste Facilities. Solid or hazardous waste collection or disposal facilities and sanitary landfills are not permitted in the Critical Area unless no environmentally acceptable alternative exists outside the Critical Area, and these facilities are needed in order to correct an existing water quality or wastewater management problem. CAC (C9) COMAR 27.01.02.02.

Select appropriate response:

- Project will be consistent with policy Restricting Waste Facilities.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 17 – Buffer Management Plan. If a development or redevelopment activity occurs on a lot or parcel that includes a buffer or if issuance of a permit, variance, or approval would disturb the buffer, the proponents of that activity must develop a buffer management plan that clearly indicates that all applicable planting standards developed by the Critical Area Commission will be met and that appropriate measures are in place for the protection and maintenance of the buffer. CAC C9 COMAR 27.01.09.01-1, .01-3.

Select appropriate response:

- Project will be consistent with the Buffer Management Plan policy.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRMP Study will complete a Buffer Management Protection Plan and/or Landscape Plan in compliance with the Baltimore City Critical Area Management Program (2002 edition) and complete the appropriate Baltimore City pollutant removal worksheets.



Coastal Zone Management Program - Critical Area Policies Checklist

Critical Area Policy 18 – Protection of Critical Area from Surface Mining Pollution. All available measures must be taken to protect the Critical Area from all sources of pollution from surface mining operations, including but not limited to sedimentation and siltation, chemical and petrochemical use and spillage, and storage or disposal of wastes, dusts, and spoils. CAC (D5) COMAR 27.01.07.02A.

Select appropriate response:

- Project will be consistent with policy Protecting Critical Area from Surface Mining Pollution.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 19 – Reclamation Requirements for Mining. In the Critical Area, mining must be conducted in a way that allows the reclamation of the site as soon as possible and to the extent possible. CAC (D5) COMAR 27.01.07.02B.

Select appropriate response:

- Project will be consistent with policy that requires Reclamation for Mining.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 20 – Restrictions on Sand & Gravel Operations. Sand and gravel operations shall not occur within 100 feet of the mean high water line of tidal waters or the edge of streams or in areas with scientific value, important natural resources such as threatened and endangered species, rare assemblages of species, or highly erodible soils. Sand and gravel operations also may not occur where the use of renewable resource lands would result in the substantial loss of forest and agricultural productivity for 25 years or more or would result in a degrading of water quality or a loss of vital habitat. CAC (D5) COMAR 27.01.07.03D.

Select appropriate response:

- Project will be consistent with policy regarding Restrictions on Sand & Gravel Operations
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:



Coastal Zone Management Program - Critical Area Policies Checklist

Critical Area Policy 21 - Prohibition of Wash Plants in Buffer. Wash plants including ponds, spoil piles, and equipment may not be located in the 100-foot buffer. CAC D5) COMAR 27.01.07.03E.

Select appropriate response:

- Project will be consistent with policy Prohibiting Wash Plants in Buffer.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 22 – Requirements for Agriculture in the Buffer. Agricultural activities are permitted in the buffer, if, as a minimum best management practice, a 25-foot vegetated filter strip measured landward from the mean high water line of tidal waters or tributary streams (excluding drainage ditches), or from the edge of tidal wetlands, whichever is further inland, is established in trees with a dense ground cover or a thick sod of grass. CAC C4) COMAR 27.01.09.01-6.

Select appropriate response:

- Project will be consistent with policy regarding Requirements for Agriculture in the Buffer.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 23 – Geographical Limits for Feeding or Watering Livestock. The feeding or watering of livestock is not permitted within 50 feet of the mean high water line of tidal waters and tributaries. CAC (C4) COMAR 27.01.09.01-6.

Select appropriate response:

- Project will be consistent with policy regarding Geographical Limits for Feeding or Watering Livestock.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:



Coastal Zone Management Program - Critical Area Policies Checklist

Critical Area Policy 24 – Creating New Agricultural Lands. In the Critical Area, the creation of new agricultural lands shall not be accomplished by diking, draining, or filling of non-tidal wetlands, without appropriate mitigation; by clearing of forests or woodland on soils with a slope greater than 15 percent or on soils with a "K" value greater than 0.35 and slope greater than 5 percent; by clearing that will adversely affect water quality or will destroy plant and wildlife habitat; or by clearing existing natural vegetation within the 100-foot buffer. CAC (C4) COMAR 27.01.06.02C.

Select appropriate response:

- Project will be consistent with policy regarding Creating New Agricultural Lands.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 25 - Best Management Practices for Agriculture. Agricultural activity permitted within the Critical Area shall use best management practices in accordance with a soil conservation and water quality plan approved or reviewed by the local soil conservation district. CAC (C4) COMAR 27.01.06.02G.

Select appropriate response:

- Project will be consistent with policy requiring Best Management Practices for Agriculture.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:



Coastal Zone Management Program - Critical Area Policies Checklist

Critical Area Policy 26 - Cutting or Clearing Trees in the Buffer. Cutting or clearing of trees within the buffer is prohibited except that commercial harvesting of trees by selection or by the clearcutting of loblolly pine and tulip poplar may be permitted to within 50 feet of the landward edge of the mean high water line of tidal waters and perennial tributary streams, or the edge of tidal wetlands if the buffer is not subject to additional habitat protection. Commercial harvests must be in compliance with a buffer management plan that is prepared by a registered professional forester and is approved by the Department of Natural Resources. CAC (C5) Md. Code Ann., Nat. Res. § 8-1808.7; COMAR 27.01.09.01-7

Select appropriate response:

- Project will be consistent with policy regarding Restrictions on Cutting or Clearing of Trees in the Buffer.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 27 - Requirements for Commercial Tree Harvesting in the Buffer. Commercial tree harvesting in the buffer may not involve the creation of logging roads and skid trails within the buffer and must avoid disturbing stream banks and shorelines as well as include replanting or allowing regeneration of the areas disturbed or cut in a manner that assures the availability of cover and breeding sites for wildlife and reestablishes the wildlife corridor function of the buffer. CAC (C5) Md. Code Ann., Nat. Res. § 8-1808.7; COMAR 27.01.09.01-7

Select appropriate response:

- Project will be consistent with policy regarding Requirements for Commercial Tree Harvesting in the Buffer.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:



Coastal Zone Management Program - Critical Area Policies Checklist

Critical Area Policy 28 - General Restrictions to Intense Development. Intense development should be directed outside the Critical Area. Future intense development activities, when proposed in the Critical Area, shall be directed towards the intensely developed areas. CAC D1 Md. Code Ann., Natural Res. § 8-1807(b); COMAR 27.01.02.02B.

Select appropriate response:

- Project will be consistent with policy regarding General Restrictions on Intense Development.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

Critical Area Policy 29 – Development Restrictions in Critical Area. The following development activities and facilities are not permitted in the Critical Area except in intensely developed areas and only after the activity or facility has demonstrated that there will be a net improvement in water quality to the adjacent body of water.

- Non-maritime heavy industry
- Transportation facilities and utility transmission facilities, except those necessary to serve permitted uses, or where regional or interstate facilities must cross tidal waters
- Permanent sludge handling, storage, and disposal facilities, other than those associated with wastewater treatment facilities. However, agricultural or horticultural use of sludge when applied by an approved method at approved application rates may be permitted in the Critical Area, but not in the 100-foot Buffer

CAC (C9) COMAR 27.01.02.02.

Select appropriate response:

- Project will be consistent with policy Restricting Development in Critical Area.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:



Coastal Zone Management Program - Historical & Archaeological Policies Checklist

Name of Project:

Baltimore Coastal Storm Risk Management (CSRМ) Feasibility Study

5.2 COASTAL RESOURCES

5.2.5 Historical and Archaeological Sites

Historical and Archaeological Policy 1 – Protection of Submerged Historic Resources. Unless permission is granted by the Maryland Historical Trust, activities that excavate, remove, destroy, injure, deface, or disturb submerged archaeological historic property are generally prohibited. MDP (C8) Md. Code Ann., State Fin. & Proc. §§ 5A-341, -333.

Select appropriate response:

- Project will be consistent with historical & archaeological policy Protecting Submerged Historic Resources.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRМ study will not involve any in-water work; therefore, not impacting any submerged historic resources.

Historical and Archaeological Policy 2 – Protection of Caves & Archaeological Sites. Unless permission is granted by the Maryland Historical Trust, activities that excavate, remove, destroy, injure, deface, or disturb cave features or archeological sites under State control are generally prohibited. MDP (C8) Md. Code Ann., State Fin. & Proc. §§ 5A-342 to -343.

Select appropriate response:

- Project will be consistent with historical & archaeological policy Protecting Caves & Archaeological Sites
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRМ study will not impact caves or archaeological sites.



Coastal Zone Management Program - Historical & Archaeological Policies Checklist

Historical and Archaeological Policy 3 – Protection of Burial Sites & Cemeteries. Neither human remains nor funerary objects may be removed from a burial site or cemetery, unless permission is granted by the local State’s Attorney. Funerary objects may not be willfully destroyed, damaged, or defaced. MDP (C8) Md. Code Ann., Crim. Law §§ 10-401 to -404.

Select appropriate response:

- Project will be consistent with historical & archaeological policy Protecting Burial Sites & Cemeteries.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRSM study will not impact historical and/or archaeological burial sites or cemeteries.



Coastal Zone Management Program - Transportation Policies Checklist

Name of Project:

Baltimore Coastal Storm Risk Management (CSRM) Feasibility Study

5.3 COASTAL USES

5.3.7 Transportation

Transportation Policy 1 – Sustainability Analysis of Transportation Projects. The social, economic, and environmental effects of proposed transportation facilities projects must be identified and alternative courses of action must be considered. MDOT (D8) COMAR 11.01.06.02B.

Select appropriate response:

- Project will be consistent with policy requiring a Sustainability Analysis of Transportation Projects.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRM study will not negatively impact transportation facilities. Coordination with the Maryland Department of Transportation - State Highway Administration, the Baltimore City Department of Public Works, and Federal Highway Administration will continue as the study progresses.

Transportation Policy 2 – Public Engagement in Transportation Project Planning. The public must be involved throughout the process of planning transportation projects. MDOT (D8) Md. Code Ann., Transp. § 7-304(a); COMAR 11.01.06.02B.

Select appropriate response:

- Project will be consistent with policy requiring Public Engagement in Transportation Project Planning.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRM study does not apply as a planning transportation project.



Coastal Zone Management Program - Transportation Policies Checklist

Transportation Policy 3 – Projects Must Support Multi-Modal Transportation. Transportation development and improvement projects must support the integrated nature of the transportation system, including removing impediments to the free movement of individuals from one mode of transportation to another. MDOT (D8) Md. Code Ann., Transp. § 2-602.

Select appropriate response:

- Project will be consistent with policy requiring Transportation Projects to Support Multi-Modal Transportation.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

The Baltimore CSRM study will allow continued use of multi-modal transportation.

Transportation Policy 4 – An Integrated Private-Public Regional Transportation System. Private transit facilities must be operated in such a manner as to supplement facilities owned or controlled by the State to provide a unified and coordinated regional transit system without unnecessary duplication or competing service. MDOT (D8) Md. Code Ann., Transp. § 7-102.1(b).

Select appropriate response:

- Project will be consistent with policy requiring that private transit facilities to Support An Integrated Private-Public Regional Transportation System.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:



Coastal Zone Management Program - Transportation Policies Checklist

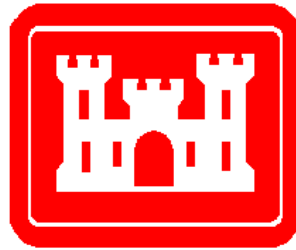
Transportation Policy 5 – Transportation Projects Must Consider the Needs of Bicyclists & Pedestrians. Access to and use of transportation facilities by pedestrians and bicycle riders must be enhanced by any transportation development or improvement project, and best engineering practices regarding the needs of bicycle riders and pedestrians shall be employed in all phases of transportation planning. MDOT (D8) Md. Code Ann., Transp. § 2-602.

Select appropriate response:

- Project will be consistent with policy requiring Transportation Projects to Consider the Needs of Bicyclists & Pedestrians.
- Not Applicable.

Describe situation and/or actions to make project or activity consistent with the above policy:

**AIR CONFORMITY ASSESSMENT
BALTIMORE
COASTAL STORM RISK MANAGEMENT STUDY**



Prepared by

**U.S. Army Corps of Engineers
Baltimore District
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Baltimore, Maryland 21201**

April 2022

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LIST OF ABBREVIATIONS & ACRONYMS

kW	kilowatts
hr	hour
g/kWh	grams per kilowatt-hour
CAA	Clean Air Act
CO	Carbon Monoxide
CSRM	Coastal Storm Risk Management Study
MOVES3	Motor Vehicle Emissions Simulator (version 3)
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO ₂	Nitrogen Dioxide
O ³	Ozone
OTR	Ozone Transport Region
PM ₁₀	Particulate Matter – 10 microns
PM _{2.5}	Particulate Matter – 2.5 microns
Pb	Lead
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
USEPA	US Environmental Protection Agency
VOC	Volatile Organic Compounds
WPCP	Water Pollution Control Plant

1 INTRODUCTION

This conformity analysis is submitted in support of the National Environmental Policy Act (NEPA) assessment for the Baltimore Coastal Storm Risk Management Study (CSRSM). The Baltimore CSRSM currently consists of four alternatives: Alternative 4, Alternative 5, Alternative 6, and Alternative 7.

1.1 Alternative 4

Alternative 4 includes the following planning units located in Baltimore City: Locust Point (I-95 Fort McHenry Tunnel and MTA Building), Patapsco South (895 Tunnel), and Patapsco North (Vent Building). Construction activities associated with this alternative include the construction of floodwalls at each planning unit. Work is anticipated to be conducted 8 hours per day assuming no time-of-day restrictions. It is anticipated that the construction duration of this project will take 1 year and 1 month (1 October 2026 – 27 October 2027). Planning unit construction phases are as follows:

- Locust Point (I-95 Fort McHenry Tunnel and MTA Building): 1 October 2026 – 27 October 2027
- Patapsco South (895 Tunnel): 1 October 2026 – 1 September 2027
- Patapsco North (Vent Building): 1 October 2026 – 23 December 2026

1.2 Alternative 5

Alternative 5 consists of the same planning units as Alternative 4. Construction activities associated with this alternative include the construction of floodwalls at each planning unit. Work is anticipated to be conducted 8 hours per day assuming no time-of-day restrictions. It is anticipated that the construction duration of this project will take 1 year and 1 month with the same schedule as Alternative 4 (1 October 2026 – 27 October 2027).

1.3 Alternative 6

Alternative 6 consists of the same planning units as Alternative 4 in addition to Patapsco North (Seagirt Port) located in Baltimore City. Construction activities associated with this alternative include the construction of floodwalls at each planning unit. Work is anticipated to be conducted 8 hours per day assuming no time-of-day restrictions. It is anticipated that the construction duration of this project will take 1 year and 10 months (1 October 2026 – 3 August 2028). Planning unit construction phases are as follows:

- Locust Point (I-95 Fort McHenry Tunnel and MTA Building): 1 October 2026 – 27 October 2027
- Patapsco South (895 Tunnel): 1 October 2026 – 1 September 2027

- Patapsco North (Vent Building): 1 October 2026 – 23 December 2026
- Patapsco North (Seagirt Port): 1 October 2026 – 3 August 2028

1.4 Alternative 7

Alternative 7 consists of the same planning units as Alternative 6 in addition to Locust Point (North), Locust Point (West), Locust Point (Fort McHenry), and Inner Harbor (includes four Modeled Areas) in Baltimore City, and Middle Branch (Incinerator) and Martin State Airport (includes two Modeled Areas) in Baltimore County. Work is anticipated to be conducted 8 hours per day assuming no time-of-day restrictions except for the Inner Harbor and Martin State Airport planning units where time-of-day restrictions may be initiated for work around the airport and residential areas. It is anticipated that the construction duration of this project will take 4 years and 7 months (1 October 2026 – 7 May 2031). Planning unit construction phases are as follows:

- Locust Point (North): 1 October 2026 – 17 March 2027
- Locust Point (West): 18 March 2027 – 16 February 2028
- Locust Point (I-95 Fort McHenry Tunnel and MTA Building): 17 February 2028 – 15 March 2029
- Locust Point (Fort McHenry): 15 March 2029 – 30 August 2029
- Patapsco South (895 Tunnel): 1 October 2026 – 1 September 2027
- Patapsco North (Vent Building): 1 October 2026 – 23 December 2026
- Patapsco North (Seagirt Port): 1 October 2026 – 3 August 2028
- Inner Harbor (Modeled Area 10): 1 October 2026 – 2 August 2028
- Inner Harbor (Modeled Area 11): 3 August 2028 – 6 June 2030
- Inner Harbor (Modeled Area 12): 6 June 2030 – 12 February 2031
- Inner Harbor (Modeled Area 13): 13 February 2031 – 7 May 2031
- Middle Branch (Incinerator): 1 October 2026 – 17 March 2027
- Martin State Airport (Modeled Area 2): 1 October 2026 – 1 September 2027
- Martin State Airport (Modeled Area 3): 1 October 2026 – 23 December 2026

2 BACKGROUND

2.1 General Conformity Regulations

General Conformity is the process required by Section 176(c) of the *Clean Air Act (CAA)*, which establishes the framework for improving air quality to protect public health and the environment. The goal of general conformity is to ensure that actions conducted or sponsored by federal agencies are consistent with State air quality goals. These air quality goals are tied to states meeting the National Ambient Air Quality Standards (NAAQS), requirements that are established by the U.S. Environmental Protection Agency (USEPA) and are designed to protect human health and the environment. Each state develops a State Implementation Plan (SIP), which includes the state's

strategy for attaining or maintaining the NAAQS, the modeling that demonstrates attainment or maintenance, and the various rules, regulations, and programs that provide the necessary air pollutant emissions reductions.

General Conformity rules of the CAA apply to all non-transportation related projects, excluding exempt actions which would cause only de minimis levels, are presumed to conform, or are specifically identified in the regulations as exempt. The General Conformity program is an emissions-based system which requires federal agencies taking or sponsoring an action in certain areas to ensure that increased air pollution emissions from that action conform with the current, approved SIP. This includes estimating both direct and indirect emissions that are likely to occur.

Six criteria pollutants that can injure health, harm the environment, and cause property damage are evaluated by the USEPA to determine air quality in an area. NAAQS for each of the criteria pollutants set permissible levels for these criteria pollutants in outdoor air. If the air quality in a geographic area meets or does better than the national standard, it is called an attainment area. The General Conformity regulations only apply in nonattainment and maintenance areas. A nonattainment area is an area designated by the USEPA as not meeting a NAAQS. A maintenance area is an area that was once designated as nonattainment but is currently meeting and maintaining the standard. The USEPA promulgated de minimis emissions levels for each of the NAAQS pollutants. If the total direct and indirect emissions from an action are less than the de minimis levels, the action is exempt from General Conformity rules. The de minimis levels are based on an area's designation and classification and are outlined in **Table 2-1**. Emissions from the total action are used to determine if they exceed the de minimis levels.

2.2 Attainment Status

The USEPA designates Baltimore, Maryland, including both Baltimore City and Baltimore County, as a marginal nonattainment area for ozone (O³) under the 8-hour standard. Baltimore, Maryland is designated in attainment of the NAAQS for all other criteria pollutants.

Table 2-1 De Minimis Emission Levels

Pollutant	Precursor	Designation	Classification/Location	De Minimis Level (tons/year)	
O ₃	VOC or NO _x	Nonattainment	Serious	50	
			Severe	25	
			Extreme	10	
	VOC		Other, outside an OTR	100	
			Other, inside an OTR	50	
	NO _x		Other, inside an OTR	100	
			All NAAs	100	
CO	-		All NAAs	100	
SO ₂	-		All NAAs	100	
NO ₂	-		All NAAs	100	
PM ₁₀	-		Moderate	100	
			Serious	70	
PM _{2.5}	Direct Emissions		All NAAs		100
	SO ₂				100
	NO _x ^a			100	
	VOC or NH ₃ ^b			100	
Pb	-	All NAAs	25		
O ₃	VOC or NO _x	Maintenance	All Maintenance Areas	100	
	VOC		Outside OTR	100	
	VOC		Inside OTR	50	
CO, SO ₂ , NO ₂ , PM ₁₀	-		All Maintenance Areas	100	
			All Maintenance Areas	100	
PM _{2.5}	SO ₂			100	
	NO _x			100	
	VOC			100	
Pb	-		All Maintenance Areas	25	
Notes: ^a Unless determined not to be a significant precursor ^b If determined to be a significant precursor O ₃ Ozone CO Carbon Monoxide SO ₂ Sulfur Dioxide NO ₂ Nitrogen Dioxide PM ₁₀ Particulate Matter – 10 microns PM _{2.5} Particulate Matter – 2.5 microns VOC Volatile Organic Compounds NO _x Nitrogen Oxides NH ₃ Ammonia NAA Nonattainment Areas OTR Ozone Transport Region					

3 PURPOSE AND OBJECTIVES

The purpose of this conformity analysis is to ensure that the alternative actions conducted as part of the Baltimore CSRMs are consistent with State air quality goals for the attainment and maintenance of the NAAQS in accordance with Section 176(c) of the CAA. The objective is to evaluate emission rates for the project alternatives to determine whether de minimis thresholds of the General Conformity Rule will be met and detail the results of the evaluation.

4 ASSESSMENT OF STUDY EMISSION RATES

Direct and indirect pollutant emissions were estimated from earthwork and construction equipment anticipated for use during the implementation of the Baltimore CSRMs alternatives. The equipment, total operational hours, and phase in which the equipment would be used was provided by the study team. Equipment operational hours were distributed per year based on the planning unit construction phase (as described in **Section 1**), and percentage of phase occurring in the elected years. The equipment and operational hours per year used in this analysis are included in **Table 4-1**. Pollutant emissions were estimated based on the operational hours per equipment for each planning unit and the alternatives were individually aggregated per year for comparison to de minimis thresholds. The alternatives build off one another, in other words, parts of Alternative 4 make up Alternative 6 as described in **Section 1**; therefore, to aggregate pollutant emissions from all alternatives for comparison to de minimis thresholds would be repetitious.

4.1 Motor Vehicle Emissions Simulator

The USEPA Motor Vehicle Emissions Simulator, version three (MOVES3) was used to estimate emission factors through a range of user-defined parameters based on the study location and provided construction information. Separate MOVES3 runs were completed based on the alternative locations in Baltimore City and Baltimore County, Maryland.

The study alternatives are scheduled to begin construction on 1 October 2026. Therefore, emission factors were modeled for a 12-month period in 2026 and applied to all succeeding years. Post processing scripts were run on the MOVES3 output databases to model emission factors in grams per hour for each equipment type. To remain conservative, the highest emission factor in the 12-month model period was used to calculate pollutant emissions for each alternative equipment.

Operational hours per year (**Table 4-1**) were multiplied by the highest emission factor in the 12-month period to determine pollutant emissions for each equipment type. Pollutant emission totals per year are included in **Table 4-2**. Emission totals for the aggregated study years are included in **Table 4-3**.

4.2 Greenhouse Gas Emissions

In addition to criteria pollutants, emissions were also estimated for the greenhouse gas (GHG) - carbon dioxide (CO₂). The same processes detailed in **Sections 4** and **4.1** for calculating criteria pollutant emissions were followed to for the GHG emission estimate. The total calculated CO₂ emissions are included in the yearly summary table, **Table 4-4**.

Table 4-1 Operational Equipment

Equipment per Planning Unit	Annual Operation (hours/year)					
	2026	2027	2028	2029	2030	2031
Alternative 4						
Flatbed truck (alternating with materials)	323	477	-	-	-	-
Excavator	2,102	5,258	-	-	-	-
Dumpster Trucks (Haul & Trash)	2,222	4,658	-	-	-	-
Concrete Trucks	1,531	2,629	-	-	-	-
Pump Truck	461	899	-	-	-	-
Small Bulldozer	781	899	-	-	-	-
Front End Loader	781	899	-	-	-	-
Skid Steer	1,562	1,798	-	-	-	-
Pick-up Trucks (Testing & Moving Contractor)	6,464	13,376	-	-	-	-
Road Roller Machine	140	180	-	-	-	-
Walk behind rollers or tampers	279	361	-	-	-	-
Landscaping trucks, seeding and grading	235	245	-	-	-	-
Asphalt Trucks	160	0	-	-	-	-
Chainsaw for vegetation removal	40	0	-	-	-	-
Alternative 5						
Flatbed truck (alternating with materials)	323	477	-	-	-	-
Excavator	2,102	5,258	-	-	-	-
Dumpster Trucks (Haul & Trash)	2,222	4,658	-	-	-	-
Concrete Trucks	1,531	2,629	-	-	-	-
Pump Truck	461	899	-	-	-	-
Small Bulldozer	781	899	-	-	-	-
Front End Loader	781	899	-	-	-	-
Skid Steer	1,562	1,798	-	-	-	-
Pick-up Trucks (Testing & Moving Contractor)	6,464	13,376	-	-	-	-
Road Roller Machine	140	180	-	-	-	-
Walk behind rollers or tampers	279	361	-	-	-	-
Landscaping trucks, seeding and grading	235	245	-	-	-	-
Asphalt Trucks	160	0	-	-	-	-
Chainsaw for vegetation removal	40	0	-	-	-	-
Alternative 6						
Flatbed truck (alternating with materials)	411	824	205	-	-	-
Excavator	2,540	6,996	1,024	-	-	-
Dumpster Trucks (Haul & Trash)	2,747	6,744	1,229	-	-	-
Concrete Trucks	1,969	4,367	1,024	-	-	-
Pump Truck	593	1,420	307	-	-	-
Small Bulldozer	913	1,420	307	-	-	-
Front End Loader	913	1,420	307	-	-	-
Skid Steer	1,825	2,840	614	-	-	-

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Equipment per Planning Unit	Annual Operation (hours/year)					
	2026	2027	2028	2029	2030	2031
Pick-up Trucks (Testing & Moving Contractor)	8,742	22,414	5,324	-	-	-
Road Roller Machine	162	267	51	-	-	-
Walk behind rollers or tampers	323	535	102	-	-	-
Landscaping trucks, seeding and grading	279	361	0	-	-	-
Asphalt Trucks	204	174	102	-	-	-
Chainsaw for vegetation removal	40	0	0	-	-	-
Alternative 7						
Flatbed truck (alternating with materials)	1,466	2,507	1,472	568	414	214
Excavator (2 Large & 2 Small sizes)	6,751	16,494	9,400	3,416	2,338	641
Dumpster Trucks (Haul & Trash)	8,922	17,824	10,133	3,915	2,086	881
Concrete Trucks	6,342	12,243	7,618	2,898	1,539	801
Pump Truck	3,129	5,962	3,631	896	422	200
Small Bulldozer	6,400	6,611	3,631	1,296	821	600
Front End Loader	9,538	10,673	3,631	1,296	821	600
Skid Steer	6,891	7,948	4,805	2,593	1,643	1,201
Pick-up Trucks (Testing & Moving Contractor)	17,608	44,135	28,654	14,999	9,173	2,991
Road Roller Machine	1,009	1,039	638	197	104	93
Walk behind rollers or tampers	1,203	1,383	866	394	207	187
Landscaping trucks, seeding and grading	896	304	260	380	0	0
Asphalt Trucks	859	869	584	174	207	187
Chainsaw for vegetation removal	377	47	0	0	0	0
Asphalt Milling Machine	62	58	0	0	0	0
Asphalt Paver Machine	62	58	0	0	0	0
Total Operating Hours per Year	127,339	241,294	85,919	33,021	19,774	8,596

Table 4-2 Emission Totals per Year from Study Equipment

2027	CO	1.16	1.16	1.84	3.07	7.23
	NOx	10.62	10.62	17.66	31.06	69.96
	SO2	0.01	0.01	0.02	0.03	0.08
	VOC	0.29	0.29	0.48	0.83	1.89
	PM2.5	0.18	0.18	0.30	0.51	1.17
	PM10	0.19	0.19	0.30	0.53	1.21
2029	CO	-	-	-	1.35	1.35
	NOx	-	-	-	11.82	11.82
	SO2	-	-	-	0.01	0.01
	VOC	-	-	-	0.33	0.33
	PM2.5	-	-	-	0.20	0.20
	PM10	-	-	-	0.21	0.21
2031	CO	-	-	-	0.27	0.27
	NOx	-	-	-	2.50	2.50
	SO2	-	-	-	0.00	0.00
	VOC	-	-	-	0.08	0.08
	PM2.5	-	-	-	0.05	0.05
	PM10	-	-	-	0.05	0.05

Table 4-3 Emission Study Totals

Pollutant	Alternative 4 Total Emissions (tons)	Alternative 5 Total Emissions (tons)	Alternative 6 Total Emissions (tons)	Alternative 7 Total Emissions (tons)	De Minimis Threshold ¹ (tons)
CO	2.00	2.00	3.22	9.03	100
NOx	15.88	15.88	28.84	84.45	100
SO2	0.02	0.02	0.03	0.09	100
VOC	0.46	0.46	0.79	2.30	100
PM2.5	0.28	0.28	0.49	1.42	100
PM10	0.29	0.29	0.50	1.47	100

Note: ¹ De minimis threshold values for maintenance areas

Table 4-4 Carbon Dioxide Emission Totals

Year	CO2 Emissions (tons)				Total Emissions (tons)
	Alternative 4	Alternative 5	Alternative 6	Alternative 7	
2026	2,134	2,134	2,836	5,446	12,549
2027	4,319	4,319	7,104	12,465	28,207
2028	-	-	1,640	7,337	8,977
2029	-	-	-	4,720	4,720
2030	-	-	-	2,895	2,895
2031	-	-	-	1,010	1,010
Total	6,453	6,453	11,580	33,873	58,359

5 CONCLUSIONS

Ozone precursors, volatile organic compounds (VOCs) and oxides of nitrogen (NO_x) are below the USEPA threshold of 100 tons per year for all maintenance areas. All other annual emission totals and aggregated study emission totals for criteria pollutants are not anticipated to exceed all other USEPA de minimis thresholds; therefore, no mitigation measures are required.

6 REFERENCES

- US Environmental Protection Agency (USEPA). 2020. *Port Emissions Inventory Guidance: Methodologies for Estimating Port-Related and Goods Movement Mobile Source Emissions*. September.
- USEPA. 2020. *MOVES3 Technical Guidance: Using MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity*. November.
- USEPA. 2021. *General Conformity*. Retrieved from <https://www.epa.gov/general-conformity>.

**DRAFT-BALTIMORE CSR
HTRW INVESTIGATION
BALTIMORE, MD**

Prepared by:



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March 2022

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Appendix B EDR[®] Area/Corridor Report

Appendix C EDR[®] Historical Topographical Maps (1894-1907)

Appendix D EDR[®] Historical Topographical Maps (1908-2014)

LIST OF ACRONYMS AND ABBREVIATIONS

AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
AUL	Activity and Use Limitation
BHAC	Baltimore Harbor Anchorages and Channels
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response Compensation and Liability Information System
CORRACTS	RCRA Corrective Action
DMMP	Dredged Material Management Plan
DoD	Department of Defense
EDR [®]	Environmental Data Resources, Inc.
EMDC	Environmental and Munitions Design Center
EP	Environmental Professional
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FOIA	Freedom of Information Act
HTRW	Hazardous, Toxic and Radioactive Waste
IC/EC	Institutional Control/Engineering Control
LUST	Leaking Underground Storage Tank
MDOT	Maryland Department of Transportation
MEC	Munitions and Explosives of Concern
MPA	Maryland Port Administration
MEC	Munitions and Explosives of Concern
NAB	United States Army Corps of Engineers, Baltimore District
NRCS	Natural Resources Conservation Service
NFRAP	No Further Remedial Action Planned
NPL	National Priority List
PEL	Probable Effects Level
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
SCRD	State Coalition for Remediation of Dry Cleaners
SWHS	State Hazardous Waste Sites
TSD	Treatment, Storage and Disposal
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
UST	Underground Storage Tank
UXO	Unexploded Ordnance

EXECUTIVE SUMMARY

A study was performed to evaluate the possible presence of hazardous, toxic, and radioactive waste (HTRW) in the study area, which is the Baltimore Metro Area, Baltimore, Maryland (MD). The area includes the entirety of Downtown Baltimore and Inner Harbor, Port Facilities and other infrastructure, Middle Branch Patapsco and the Fells Point Historic District. The overall study is being conducted to develop solutions that: Reduce life safety risk to vulnerable populations, reduce economic damages from coastal flooding to residences and businesses, reduce coastal flooding impacts that disrupt critical infrastructure assets, services, and independent systems in the study area, and reduce coastal flooding impacts that disrupt or damage transportation infrastructure and assets in the study area. This study is being conducted by the U.S. Army Corps of Engineers (USACE) Baltimore District (NAB). The Maryland Department of Natural Resources is participating as the sponsor for the City of Baltimore Flood Risk Management Feasibility Study. The non-federal sponsor for the study is the Maryland Department of Transportation (MDOT).

1.0 INTRODUCTION

1.1 Purpose

This report is a summary of an investigation of the properties that may impact the Downtown Baltimore and Inner Harbor, Port Facilities and other infrastructure, Middle Branch Patapsco and the Fells Point Historic District, Baltimore, Maryland (MD), and was conducted as an environmental site assessment (ESA). The purpose of the ESA is to evaluate whether or not hazardous substances or petroleum products may be present on the property under conditions suggesting that a past release, continuing release, or material threat of a release to the property is present, and to conclude whether or not recognized environmental conditions (RECs) exist based on the results of the process. This assessment is not intended to identify *de minimis* conditions that do not present a significant risk of harm to public health or the environment, and that would generally not be subject to enforcement action if brought to the attention of appropriate governmental agencies.

1.2 Scope of Services

U.S. Army Corps of Engineers (USACE) Baltimore District (NAB) personnel performed the following work:

- Reviewed records [Federal environmental records, State and Tribal environmental records, Environmental Data Resources (EDR[®]) proprietary records, aerial photographs, city directory abstract and historical topographic maps]. The EDR[®] report includes properties within a one-quarter mile radius of the study area as required by ASTM E 1527-13.

1.3 Standards

NAB personnel followed the practice established by ASTM International (formerly the American Society for Testing and Materials) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Designation E 1527-13). This practice defines “good commercial and customary practice in the United States for conducting an environmental site assessment of a parcel of commercial real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products.”

1.4 Assumptions, Limitations, Exceptions, Deviations, Terms and User Reliance

1.4.1 Significant Assumption

NAB EMDC-RID personnel completed this project with the following significant assumption in mind:

- The client (NAB-PPMD) relayed any specialized knowledge or experience material to recognized environmental conditions.

1.4.2 Exceptions and Deviations

There were no exceptions to the ASTM E 1527-13 standards or deviations from the standards during the preparation of this report.

1.4.3 Special Terms and Conditions

There are no special terms or conditions related to this ESA.

1.4.4 User Reliance

The contents of this document should not be used or relied upon by any other party without the express written consent of USACE.

1.4.5 Continuing Obligations

Since the property is not being purchased, this ASTM E 1527-13 topic is not applicable.

2.0 SITE DESCRIPTION

2.1 Location

Address: Downtown Baltimore and Inner Harbor, Port Facilities and other infrastructure, Middle Branch Patapsco and the Fells Point Historic District, Baltimore, MD 21222

Approximate coordinates: (NAD 83) 39.256622, -76.546697

The extent of the study area includes the areas outlined in **Figure 1** Downtown Baltimore and Inner Harbor, Port Facilities and other infrastructure, Middle Branch Patapsco and the Fells Point Historic District

2.2 Current Owners

The area is under the jurisdiction of the State of Maryland, City of Baltimore. Because most of the area is a large industrial area, there are many properties within EDR's one-quarter mile search radius of the project area. The EDR[®] report lists owners of the properties (EDR[®] Area/Corridor Report).

2.3 Historical and Current Use of the Property

Baltimore is one of the oldest port cities on the east coast. It has been, and continues to be, an integral part in the nation's transportation and commerce since its founding nearly 300 years ago. The city has undergone countless changes and modifications over the years to accommodate increasing population. It is a large city landscape with large industrial areas, parks, highway systems, railway systems, marine terminals, retail and residential areas.

2.4 Description of the Site Infrastructure

There are several industrial areas, both buildings and housing. Highways and railways run throughout the area. There are several rivers, streams and inlets which carry both heavy and light boat traffic.

2.5 Regional Geology and Topography

2.5.1 Regional Geology

Roughly the western half of the City of Baltimore lies in the Piedmont Plateau Province. Ranging in age from about 200 million to 1.1 billion years old, Piedmont rocks consist of granite, gneiss (pronounced "nice"), slate, marble, quartzite, and other rocks.

2.5.2 Topography

The Chesapeake Bay is located within in the Atlantic Coastal Plain physiographic province and is underlain by sequences of clay, silt and gravel. The general geologic setting of Baltimore is comprised of a series of wedge-shaped sediment layers dipping and thickening bayward. The study area is characterized by manmade, landfilled, and/or altered features. The topography of the study area is level, with an approximate topographic range of 1 to 8 feet above mean sea level.

3.0 RECORDS REVIEW

3.1 Information from Federal Environmental Records

3.1.1 Introduction

EDR[®] proprietary records were obtained for the properties within the search area. EDR[®] is recognized as an industry standard for records research. The EDR[®] vendor states:

EDR[®] searches over 1,600 environmental databases, including hundreds of federal, state, city, and tribal sources. The “High-Risk Historical Records database” includes data about historic gas stations, dry cleaners, or manufactured gas plants for example.

3.1.2 Information from EDR[®] Proprietary Records

The search range is defined as any property within one-half mile of the target search area. There are several properties within the search area of the EDR[®] report as the proposed alternatives cover a large area of the city of Baltimore, Inner Harbor, Middle Branch Patapsco, and Fells Point Historic District (Focus Maps within EDR[®] report). The EDR[®] report identified one National Priority List (NPL) site, The Curtis Bay Coast Guard Facility. There were 3 properties listed on the Superfund Enterprise Management System (SEMS) list. Curtis Bay Coast Guard Yard, Chemical Metals Industries, Inc., and Origin Baltimore Recycling, LLC. There are fifty-five properties on the SEMS-Archive list. Fourteen properties listed in the Federal RCRA Corrective Action Report (CORRACTS) Facilities List. Eleven properties listed as Federal RCRA non-CORRACTS Treatment, Storage, and Disposal (TSD) facilities list. There are sixty-five RCRA Large Quantity Waste Generators (LQG) listed in the study area. There are 150 RCRA Small Quantity Waste Generators (SQG) listed. In addition, there are 167 RCRA Very Small Quantity Waste Generators (RCRA-VSQG) listed in the report. There are five sites listed with Engineering Controls (US ENG CONTROL). There are five sites listed with Institutional Controls (US INST CONTROL). There are 1317 records found in the Emergency Response Management System (ERNS). There are forty-nine MD State Hazardous Waste Sites (SHWS)- Notice of Potential Hazardous Waste Sites listed as well. There are ten MD Permitted Solid Waste Disposal Facilities (SWF/LF) listed. There are 840 Oil Control Program Cases (OCPCASES) listed within the study area, most of which are closed. There are fifty-three Recovery Sites (MD HIST LUST) listed, nineteen of which are closed. There are 486 Registered Underground Storage Tanks (MD UST) sites listed. There are 100 sites listed as Permitted Aboveground Storage Tanks (MD AST). There are fifty Brownfields (US BROWNFIELDS) sites listed within the EDR[®] search area. There are seven Formerly Used Defense Sites (FUDS) listed in the search area. There are three sites

listed as EPA Watch List (EPA WATCH LIST) sites. There are thirty -one properties listed on the Toxic Substances Control Act (TSCA) list. There are twelve properties listed in the PCB Activity Database System (PADS). There are several more categories broken down and available in the EDR report. The ones listed here are more relevant to the purposes of this study.

3.1.3 Orphan Sites

There are 3200 orphan sites listed in the EDR[®] report (EDR[®] Area/Corridor Report pgs. OR-1 - OR-71). Orphan sites are sites that are unmappable and are not considered by EDR[®] in their analysis.

3.2 Aerial Photographs

Aerial photos of the project location were obtained through Google Earth for 2018-2022.

The aerial photographs are in Appendix B.

4.0 EVALUATION

4.1 Data Gaps

A site visit was determined to be unfeasible as the study area covers a large area encompassing the entire city of Baltimore. It should be noted that over the life of the project, teams have visited various areas of concern for this project. There were site visits that took place over several days in November 2019 when a team visited and photographed the Harbor Tunnel Vent, the Canton Industrial Area, Fells Point and Martin State Airport. A group also made a visit to the tunnels with MDTA on December 17, 2021.

5.0 FINDINGS AND CONCLUSIONS

There are several areas around the city of Baltimore being considered for various structural and non-structural measures to protect critical facilities and infrastructure. They are identified in Alternative plans #4 through #7. Areas of the Inner Harbor, Harbor Point for example, are former hazardous waste sites. Harbor Point was a source of chromium that was discovered to be migrating into the harbor and into the groundwater below the harbor.(USEPA) There are a number of waste generators listed at Martin State Airport. They range from LQG to VSQG according to the data provided. There are also numerous USTs and ASTs listed on the grounds containing heating oil, diesel fuel, gasoline, aviation jet fuel, used oil and motor oil. There have been cases of spills resulting in contamination of the soil and groundwater. There have been ongoing actions at the airport to investigate the extent

of the presence of total petroleum hydrocarbon (TPH), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), inorganic compounds, and polychlorinated biphenyls (PCBs) in the groundwater and the soil. In addition, in 2000 a contractor uncovered pieces of unexploded ordnance (UXO). The Army's Explosive Ordnance Division investigated and found the items to be unfused, unarmed, and contained inert material. (MDE) Any ground disturbance that would need to be done would need to take into consideration the location of these waste generators and any possible contamination in the path of the construction. There are several marine terminals and industrial complexes surrounding the entrance points of the Baltimore Harbor Tunnel and the Fort McHenry Tunnel. Many of these are listed in one or more of the above listed categories. While there are instances of documented spills and violations attributed to entities around the areas of concern, any potential impact they would have to the project would depend on what alternative is chosen. Any alternative that requires anchoring could pose a problem depending on the placement.

6.0 REFERENCES

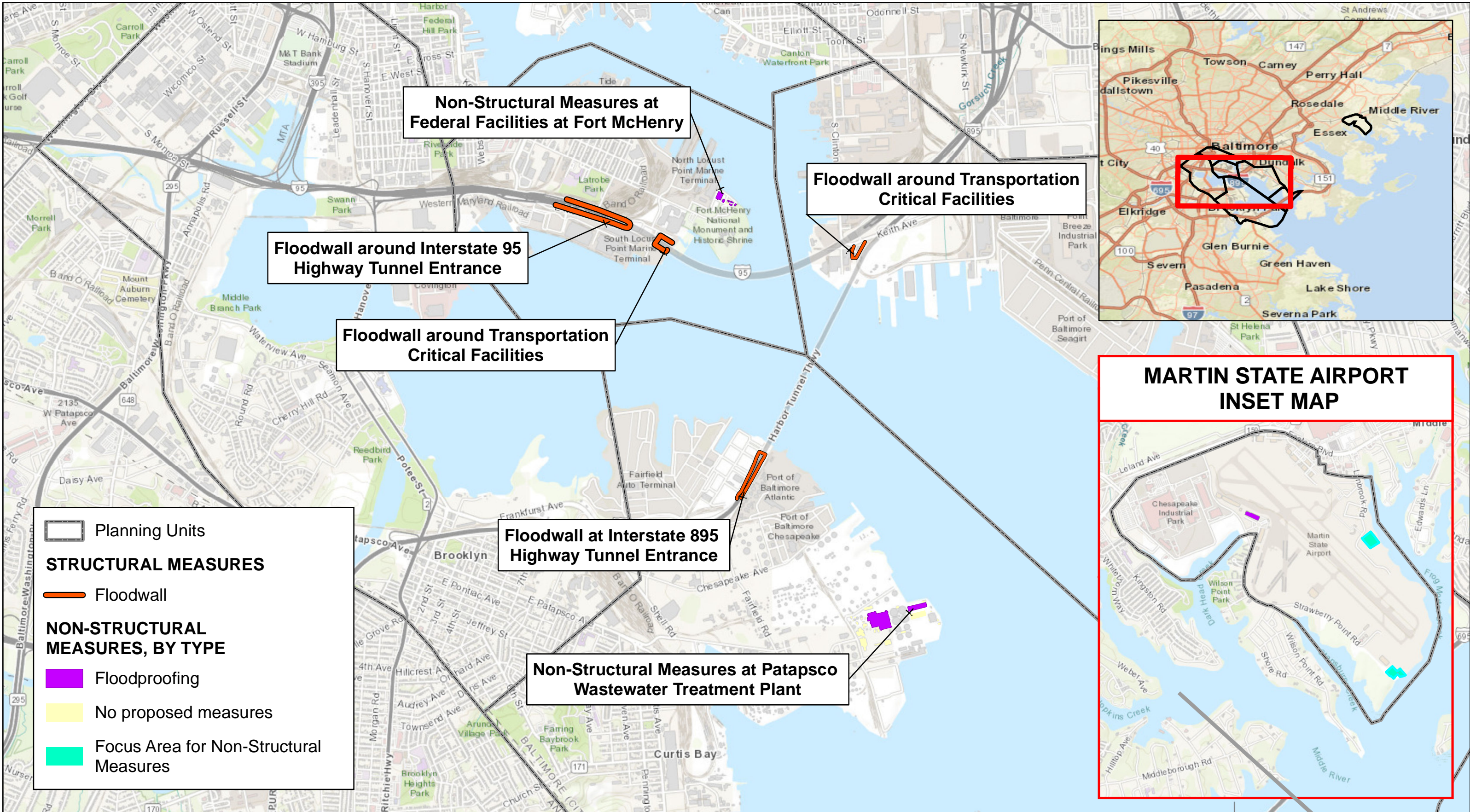
EDR® Area/Corridor Report-Baltimore Metro CSRM Study Prepared October 31, 2019, EDR Lightbox

EDR® Historical Topographical Map Report June 8, 2021.

Hazardous Waste Cleanup: Honeywell Baltimore Inner Harbor in Baltimore Maryland. USEPA <https://www.epa.gov/hwcorrectiveaction/hazardous-waste-cleanup-honeywell-baltimore-inner-harbor-baltimore-md#Description>

Martin State Airport. Maryland Department of the Environment <https://mde.maryland.gov/programs/land/marylandbrownfieldvcp/pages/martinstateairport.aspx>

APPENDIX A
ALTERNATIVE PLAN FIGURES



Non-Structural Measures at Federal Facilities at Fort McHenry

Floodwall around Transportation Critical Facilities

Floodwall around Interstate 95 Highway Tunnel Entrance

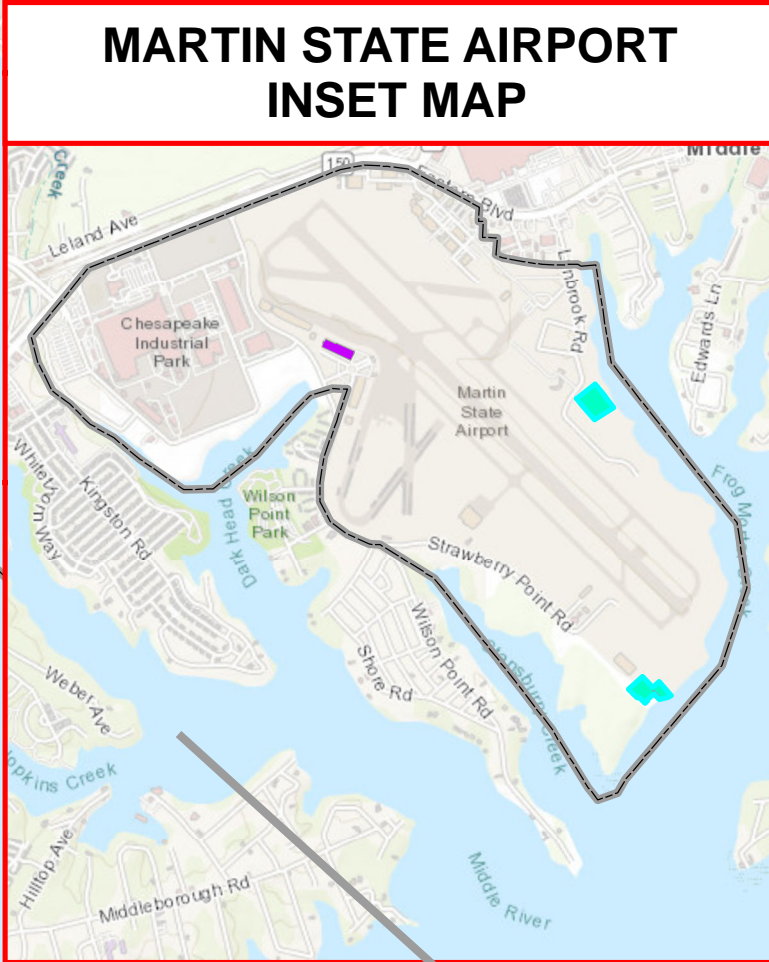
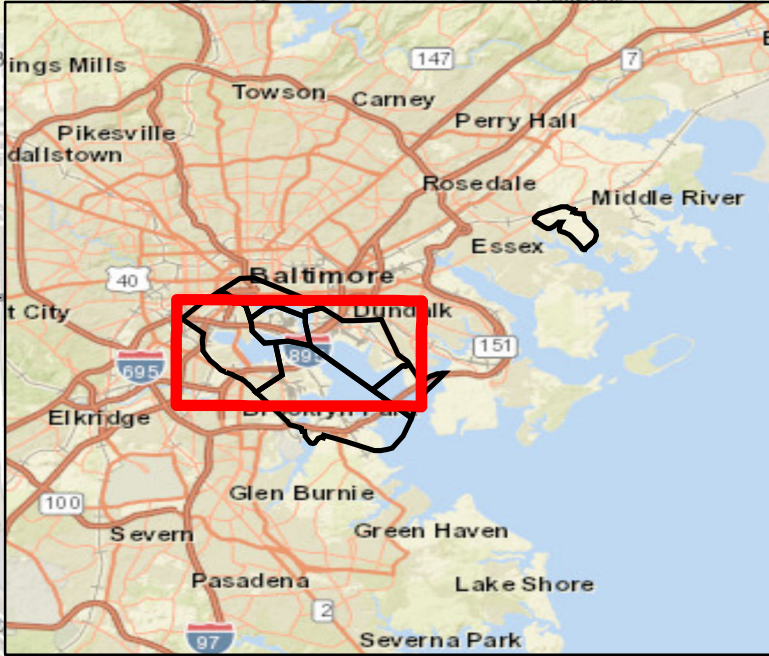
Floodwall around Transportation Critical Facilities

Floodwall at Interstate 895 Highway Tunnel Entrance

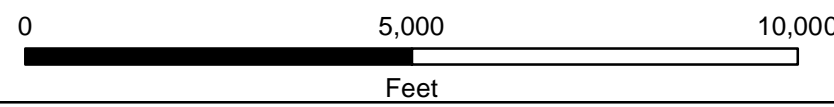
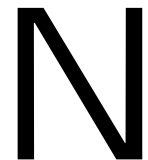
Non-Structural Measures at Patapsco Wastewater Treatment Plant

Legend

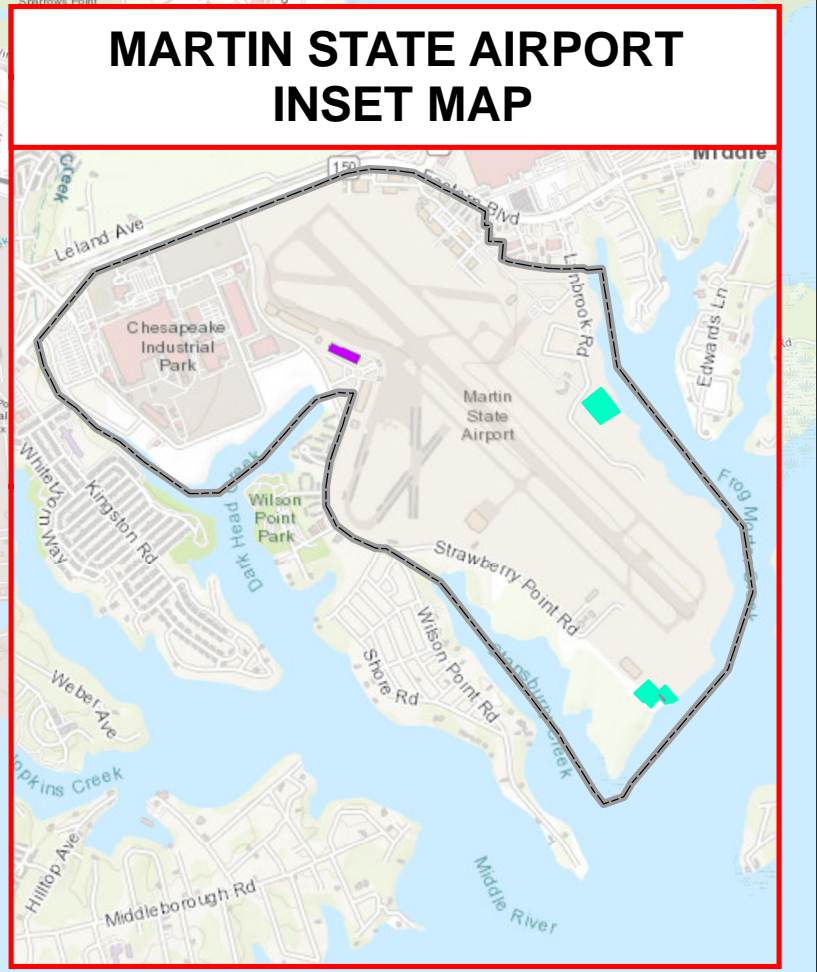
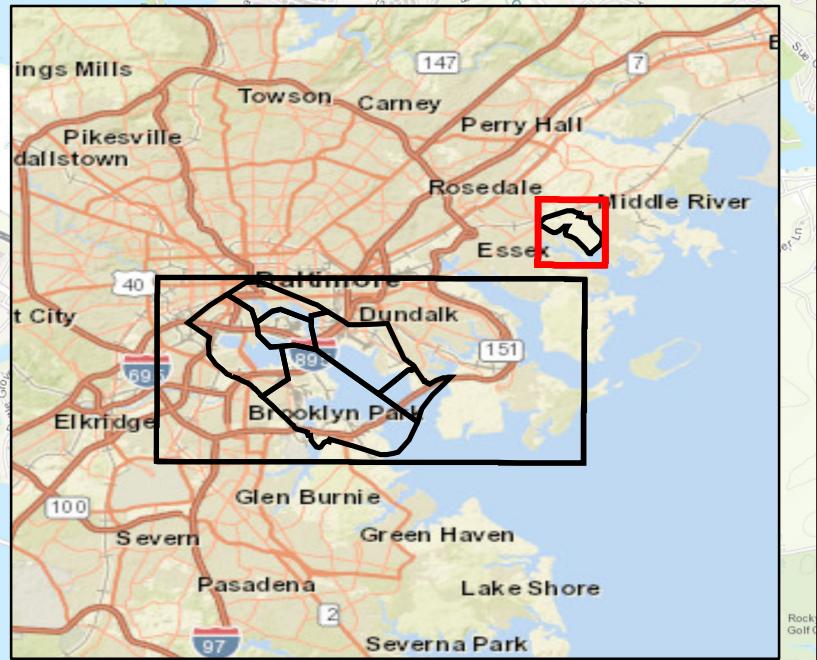
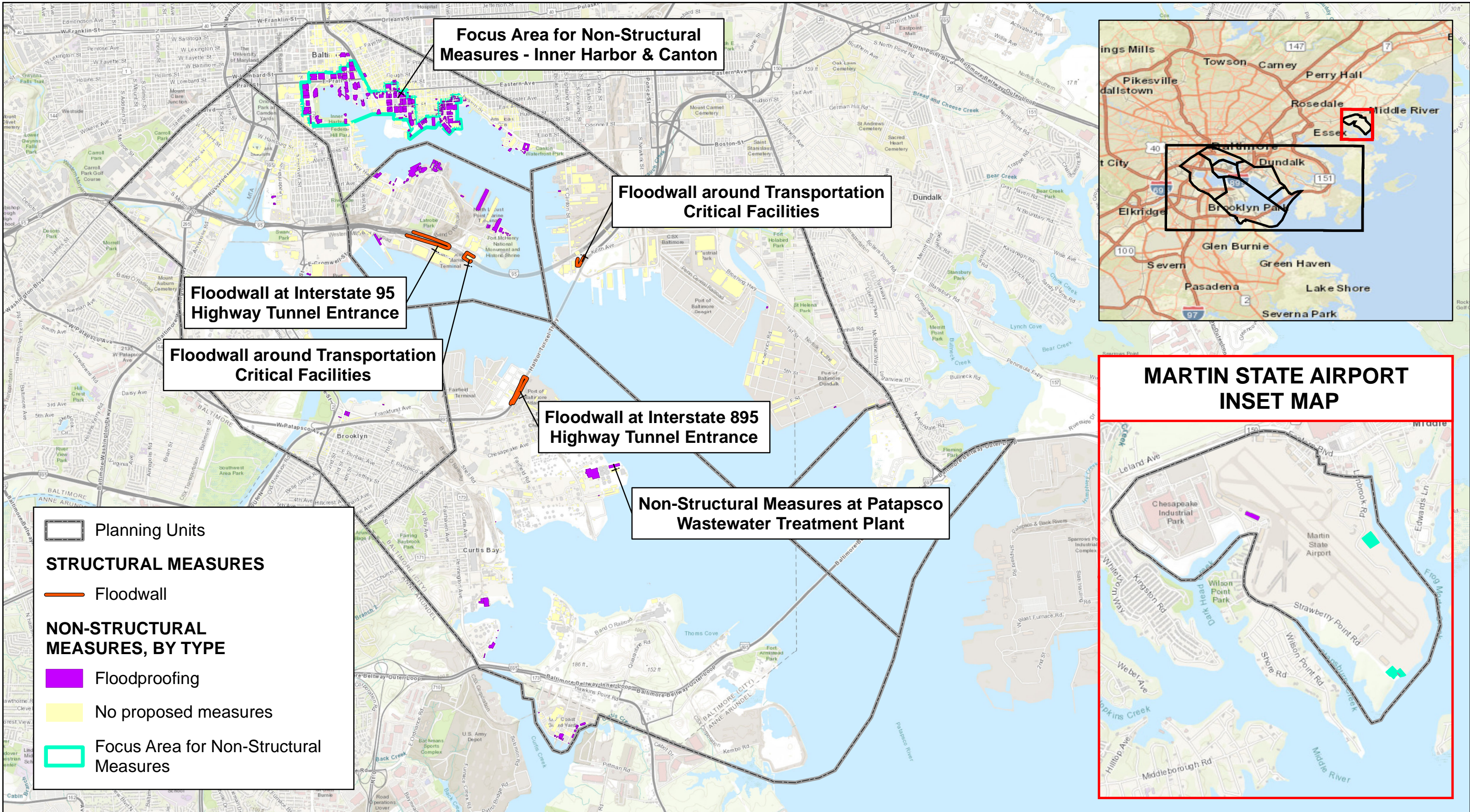
- Planning Units
- STRUCTURAL MEASURES**
- Floodwall
- NON-STRUCTURAL MEASURES, BY TYPE**
- Floodproofing
- No proposed measures
- Focus Area for Non-Structural Measures



**Alternative Plan 4
Critical Infrastructure Plan
Baltimore, Maryland**



Map: Critical Infrastructure Plan.mxd
Developed by: USACE Baltimore
Date: 12/14/2021

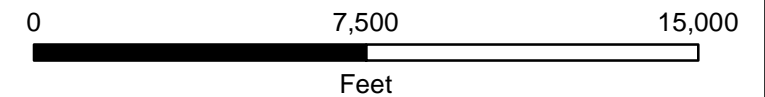


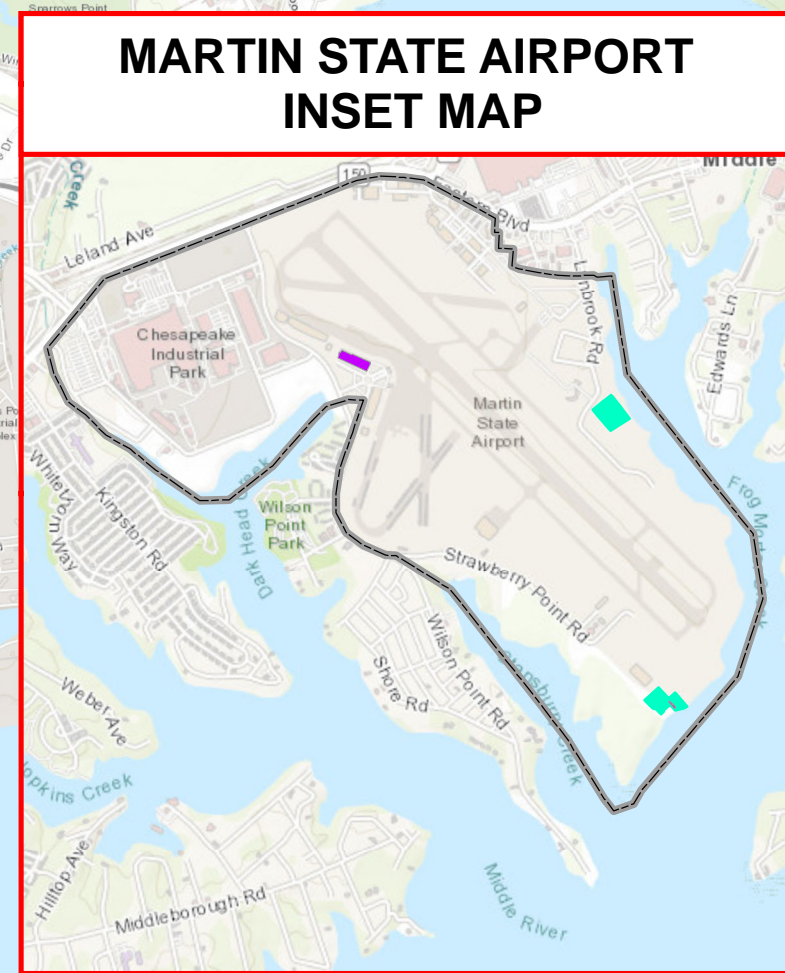
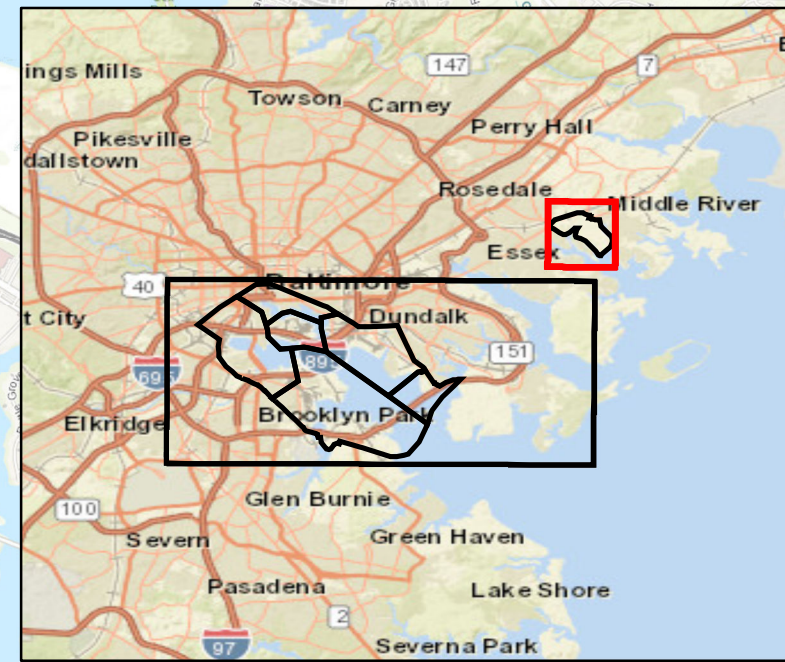
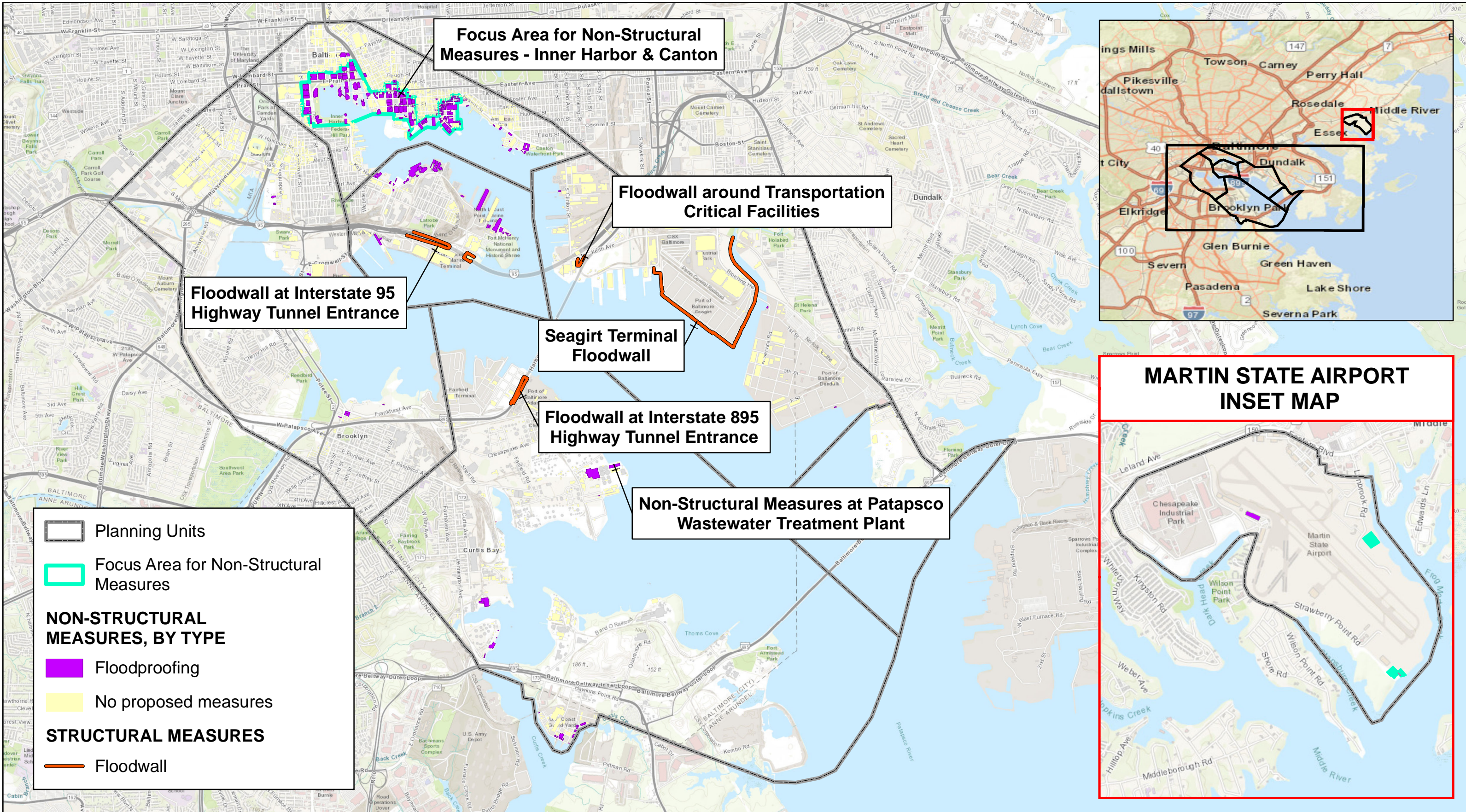
US Army Corps
of Engineers
Baltimore District

**Alternative Plan 5
Critical Infrastructure with Non-Structural Measures Plan
Baltimore & Martin State Airport, Maryland**

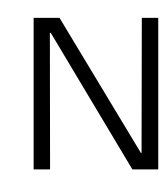


Map: Critical Infrastructure + NonStructural Plan.mxd
Developed by: USACE Baltimore
Date: 12/14/2021



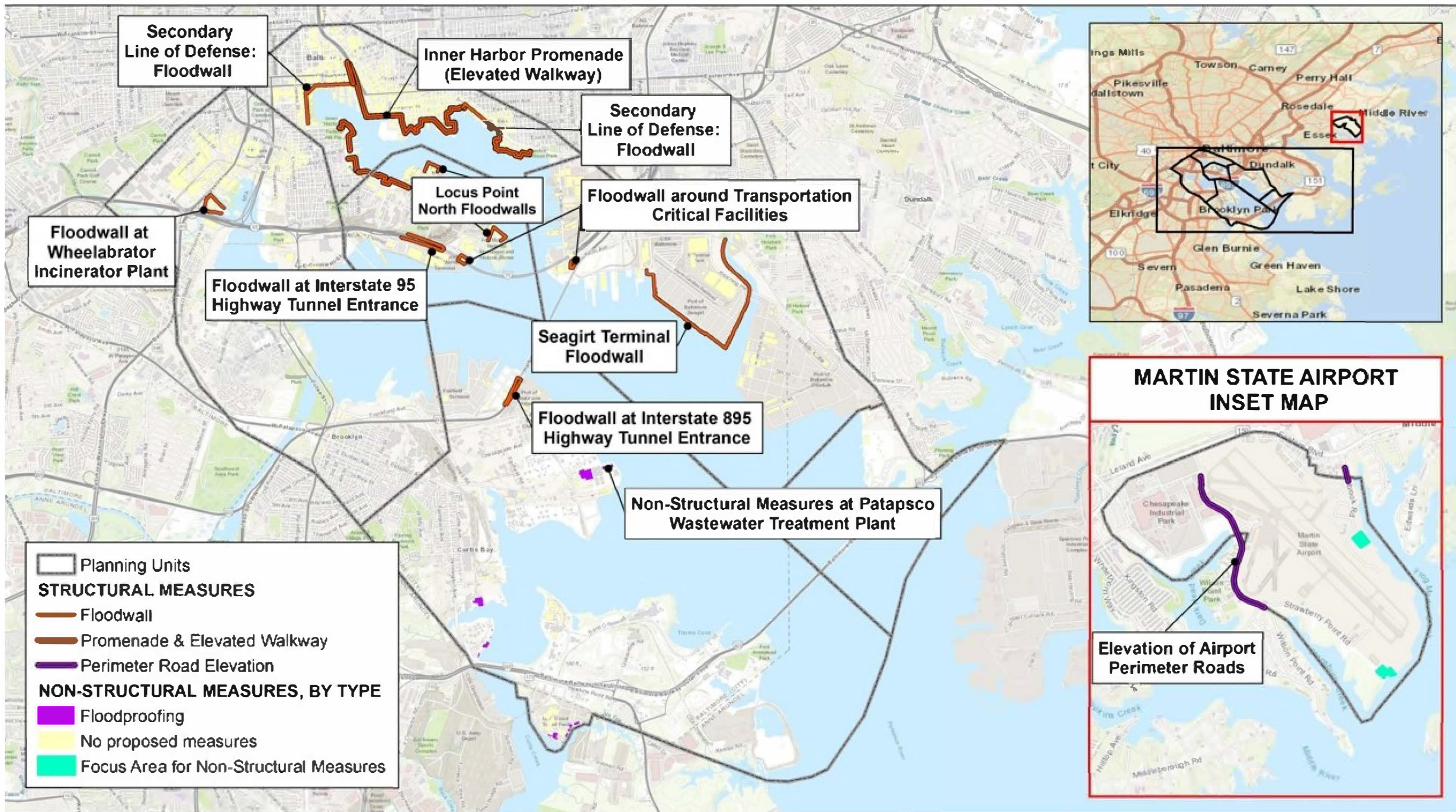


**Alternative Plan 6
Critical Balanced Plan - Critical Infrastructure with
Non-Structural Measures Plan and Port of Baltimore Floodwalls
Baltimore & Martin State Airport, Maryland**

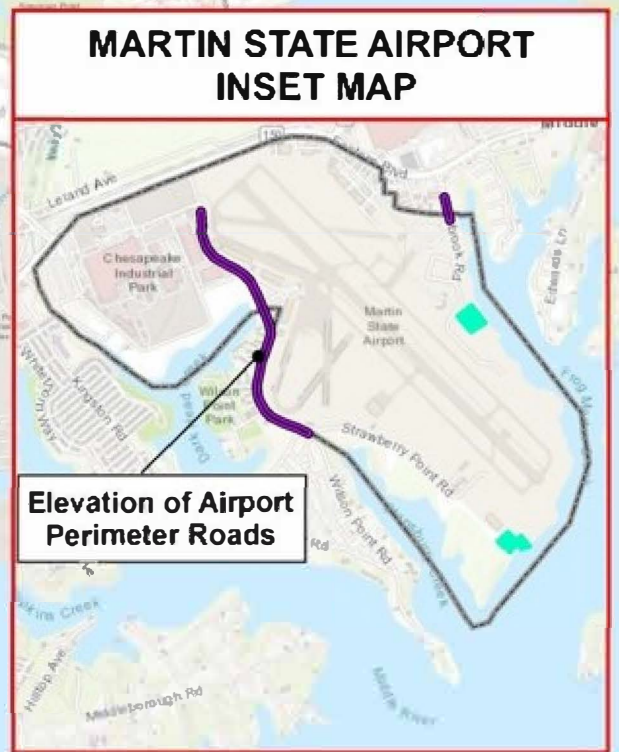


Map: Critical Balanced Plan.mxd
Developed by: USACE Baltimore
Date: 12/14/2021

0 8,500 17,000
Feet



Planning Units
STRUCTURAL MEASURES
 Floodwall
 Promenade & Elevated Walkway
 Perimeter Road Elevation
NON-STRUCTURAL MEASURES, BY TYPE
 Floodproofing
 No proposed measures
 Focus Area for Non-Structural Measures



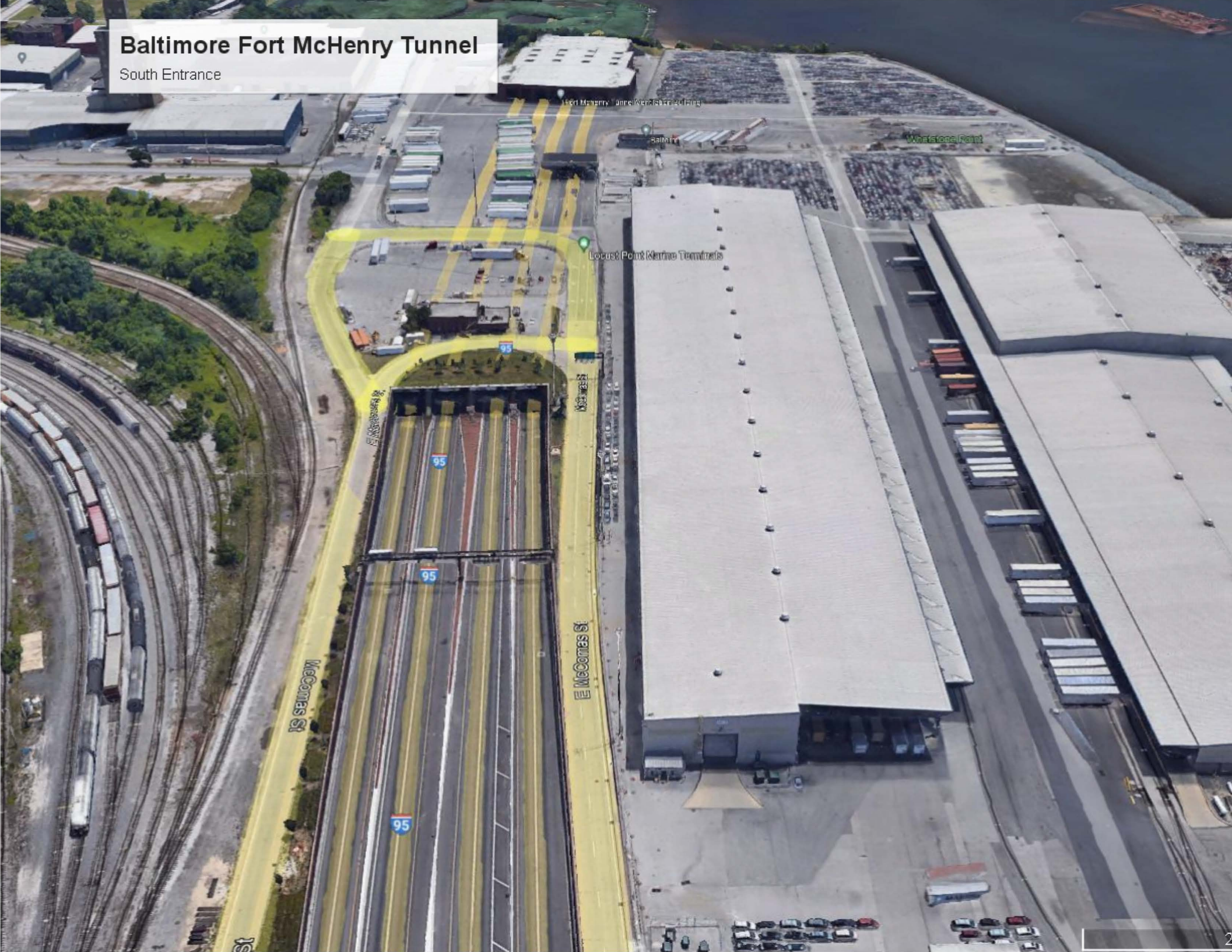
Alternative Plan 7
Mid-Tier Plan
Mid-Tier Plan with Secondary Shoreline Line of Defense
Baltimore & Martin State Airport, Maryland



APPENDIX B
AERIAL PHOTOGRAPHS

Baltimore Fort McHenry Tunnel

South Entrance



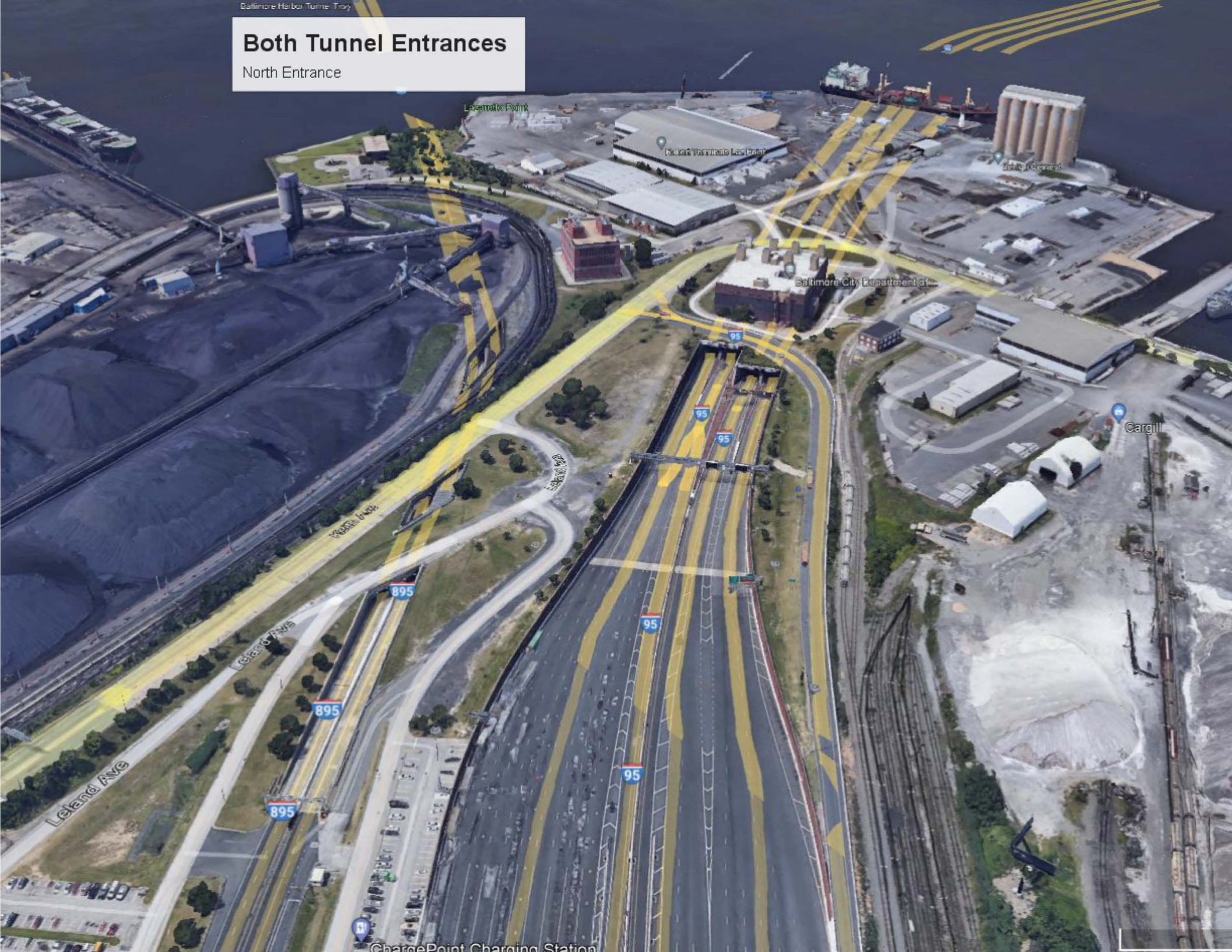
Baltimore Harbor Tunnel

South Entrance



Both Tunnel Entrances

North Entrance



Leland Ave

Baltimore City Department of

Cargill

Cargill

I-895

I-895

I-895

I-95

I-95

I-95

ChargePoint Charging Station

Baltimore Harbor APR 2018

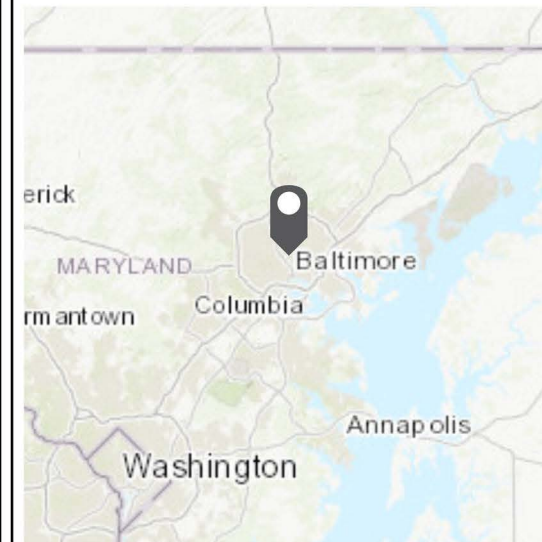
Baltimore CSRM
Baltimore City, MD

0 1 2 Miles



 Baltimore City Boundary

Historical Imagery obtained from
ArcGIS Online Wayback digital archive



Spatial Reference
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Auxiliary Sphere
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GIS by: KJP, 14 APR 22



US Army Corps of Engineers
Baltimore District
Environmental & Munitions Design Center

Baltimore Harbor APR 2019

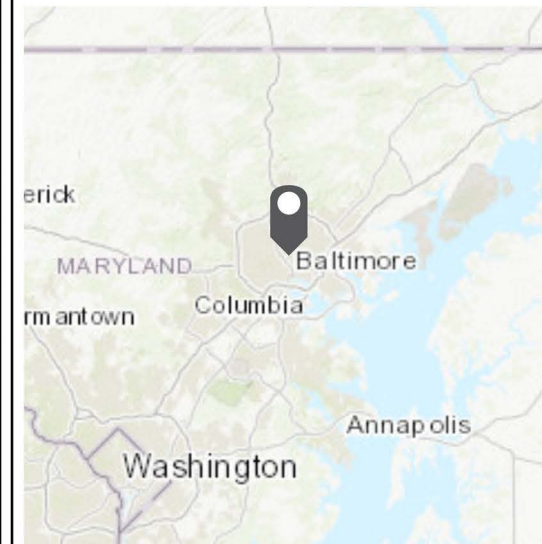
Baltimore CSRM
Baltimore City, MD

0 1 2 Miles



— Baltimore City Boundary

Historical Imagery obtained from
ArcGIS Online Wayback digital archive



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GIS by: KJP, 14 APR 22



US Army Corps of Engineers
Baltimore District
Environmental & Munitions Design Center

Baltimore Harbor APR 2020

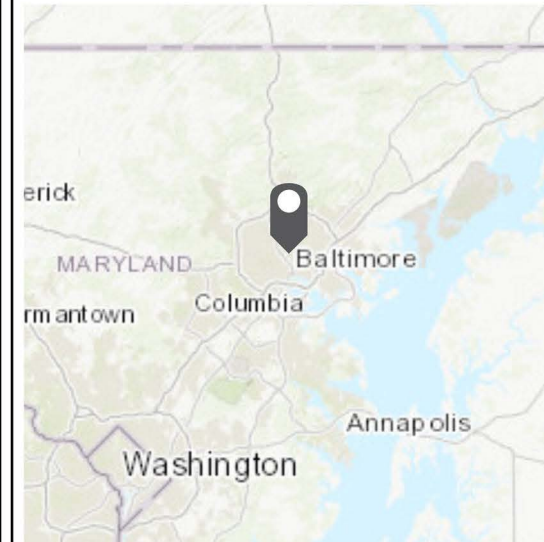
Baltimore CSRM
Baltimore City, MD

0 1 2 Miles



 Baltimore City Boundary

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GIS by: KJP, 14 APR 22



US Army Corps of Engineers
Baltimore District
Environmental & Munitions Design Center

Baltimore Harbor APR 2021

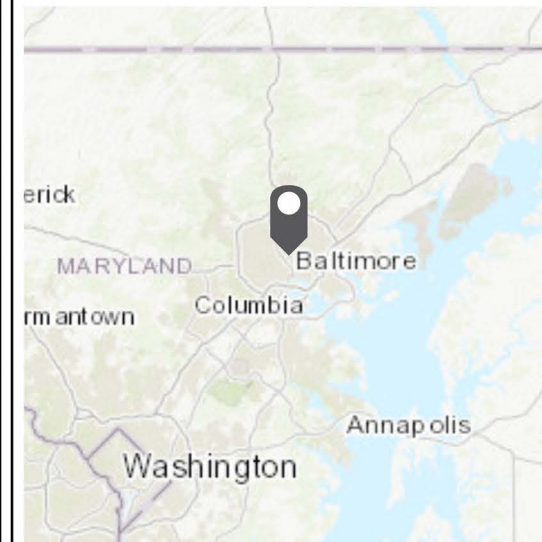
Baltimore CSRM
Baltimore City, MD

0 1 2 Miles



 Baltimore City Boundary

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Spatial Reference

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GIS by: KJP, 14 APR 22



US Army Corps of Engineers
Baltimore District
Environmental & Munitions Design Center

Baltimore Harbor APR 2022

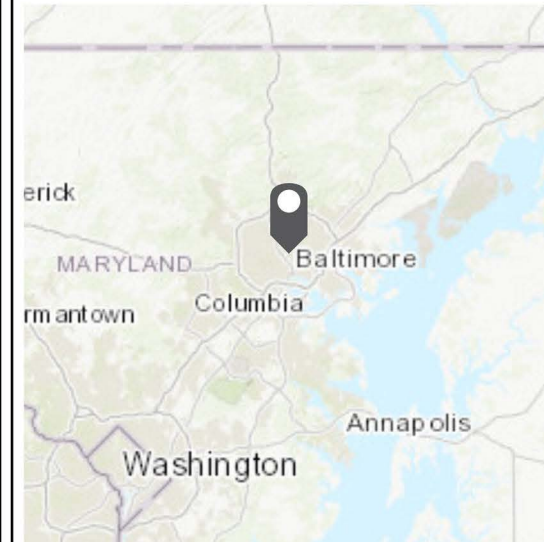
Baltimore CSRM
Baltimore City, MD

0 1 2 Miles



— Baltimore City Boundary

Historical Imagery obtained from
ArcGIS Online Wayback digital archive



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Scale: 1:90,453
GIS by: KJP, 14 APR 22



US Army Corps of Engineers
Baltimore District
Environmental & Munitions Design Center

Martin State Airport APR 2018

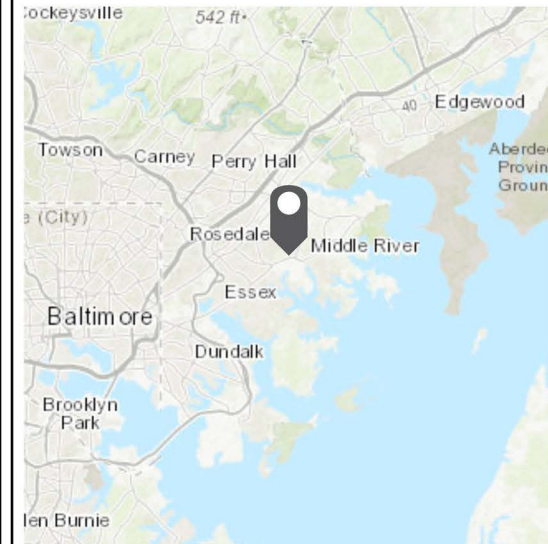
Baltimore CSRM
Baltimore County, MD

0 1,000 2,000 Feet



 Martin State Airport

Historical Imagery obtained from
ArcGIS Online Wayback digital archive



Spatial Reference
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GIS by: KJP, 14 APR 22



US Army Corps of Engineers
Baltimore District
Environmental & Munitions Design Center

Martin State Airport APR 2019

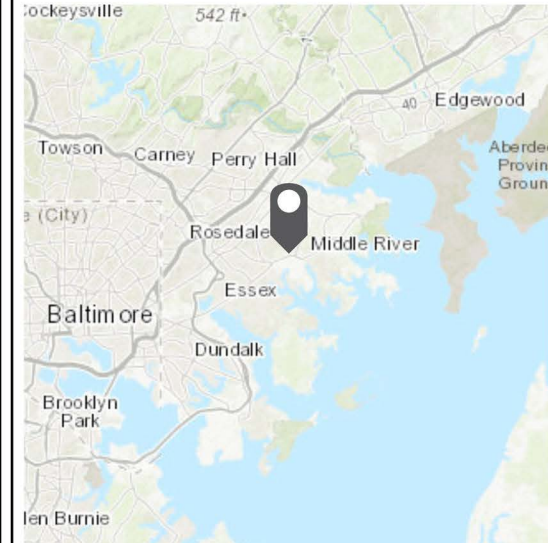
Baltimore CSRM
Baltimore County, MD

0 1,000 2,000 Feet



 Martin State Airport

Historical Imagery obtained from
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Spatial Reference
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GIS by: KJP, 14 APR 22



US Army Corps of Engineers
Baltimore District
Environmental & Munitions Design Center

Martin State Airport APR 2020

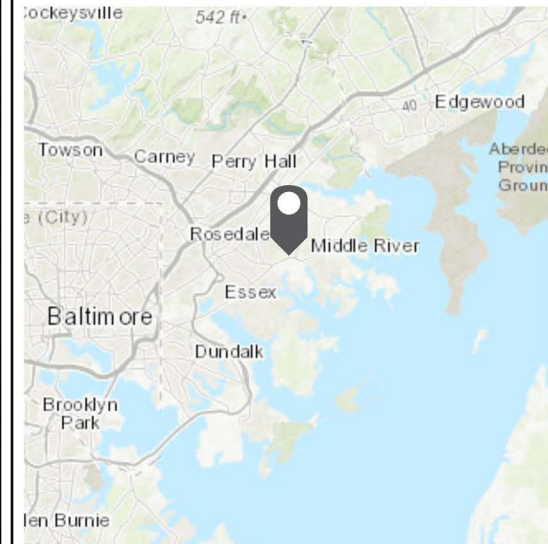
Baltimore CSRM
Baltimore County, MD

0 1,000 2,000 Feet



 Martin State Airport

Historical Imagery obtained from
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GIS by: KJP, 14 APR 22



US Army Corps of Engineers
Baltimore District
Environmental & Munitions Design Center



Martin State Airport APR 2021

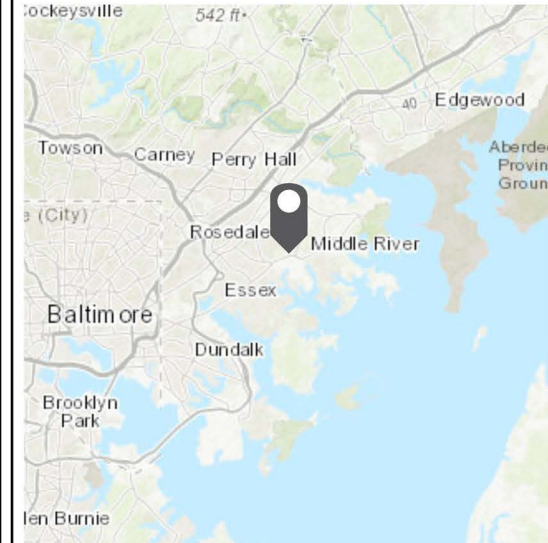
Baltimore CSRM
Baltimore County, MD

0 1,000 2,000 Feet



 Martin State Airport

Historical Imagery obtained from
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US Army Corps of Engineers
Baltimore District
Environmental & Munitions Design Center

Martin State Airport APR 2022

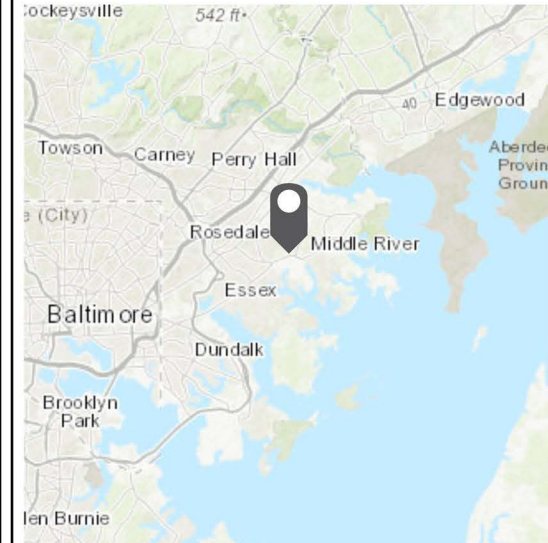
Baltimore CSRM
Baltimore County, MD

0 1,000 2,000 Feet



 Martin State Airport

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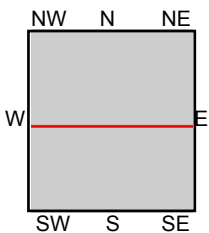
US Army Corps of Engineers
Baltimore District
Environmental & Munitions Design Center

APPENDIX C
EDR[®] AREA/CORRIDOR REPORT

APPENDIX D
EDR[®] HISTORICAL TOPOGRAPHICAL MAPS (1894-1907)



This report includes information from the following map sheet(s).



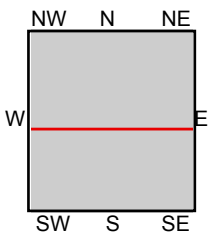
TP, Baltimore, 1904, 15-minute
S, Relay, 1907, 15-minute

SITE NAME: Seagirt Study
 ADDRESS: Baltimore, MD
 Baltimore, MD 21224
 CLIENT: U.S. Army Corps of Engineers





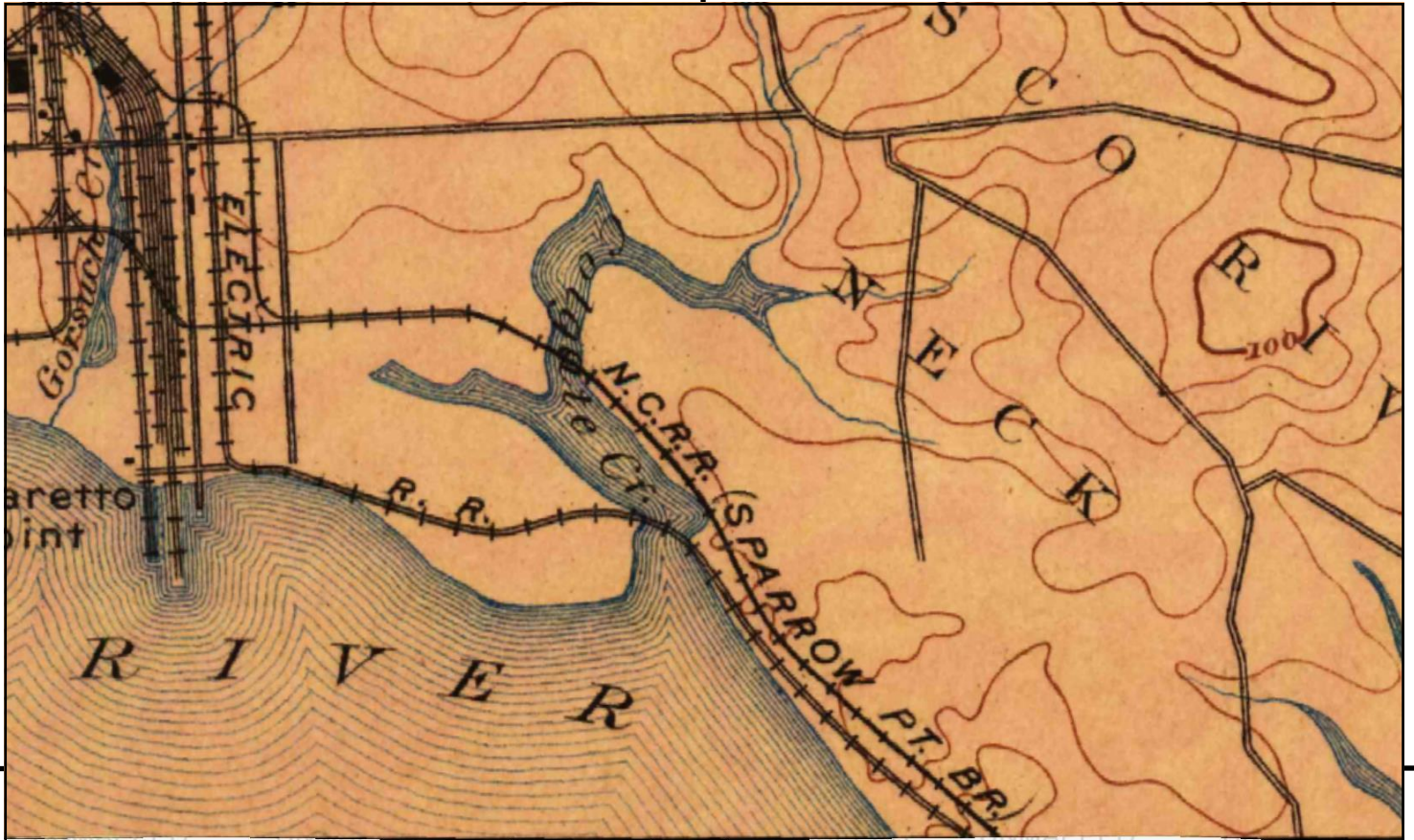
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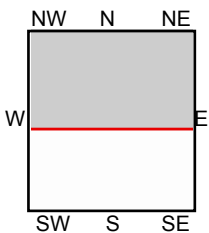
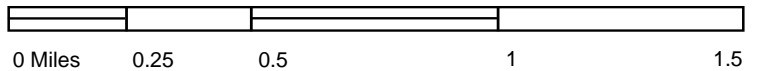
TP, Baltimore, 1904, 15-minute
 SW, Relay, 1907, 15-minute

SITE NAME: Seagirt Study
 ADDRESS: Baltimore, MD
 Baltimore, MD 21224
 CLIENT: U.S. Army Corps of Engineers





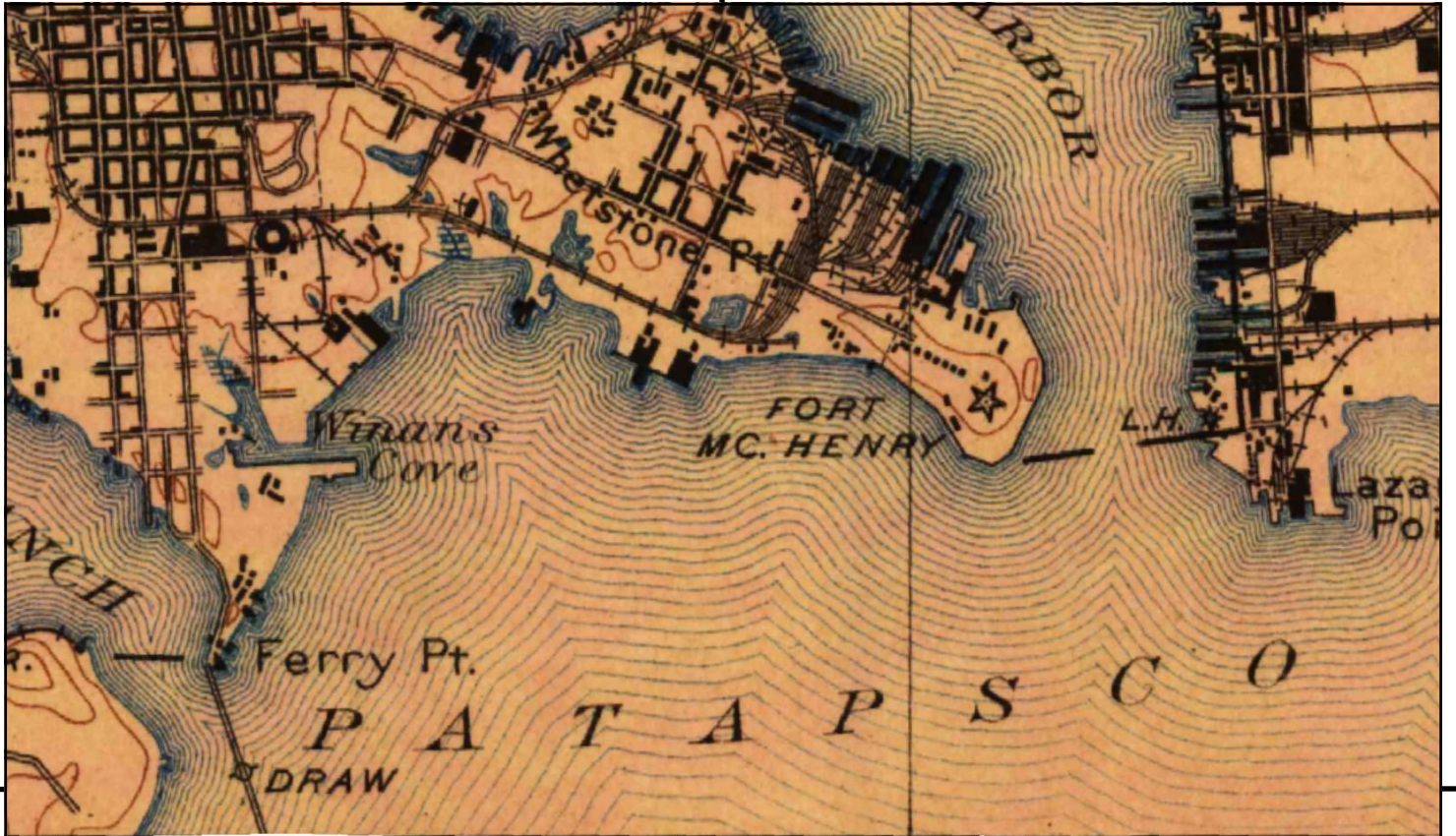
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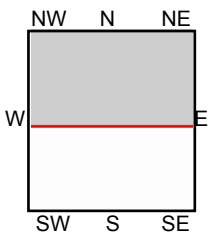
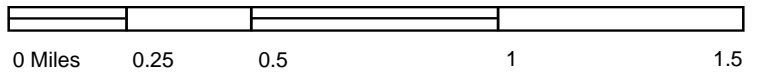
TP, Baltimore, 1899, 15-minute

SITE NAME: Seagirt Study
 ADDRESS: Baltimore, MD
 Baltimore, MD 21224
 CLIENT: U.S. Army Corps of Engineers





This report includes information from the following map sheet(s).



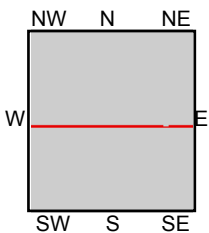
TP, Baltimore, 1899, 15-minute

SITE NAME: Seagirt Study
ADDRESS: Baltimore, MD
Baltimore, MD 21224
CLIENT: U.S. Army Corps of Engineers





This report includes information from the following map sheet(s).



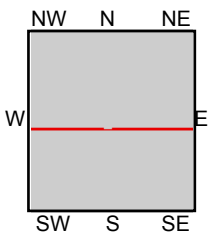
TP, Baltimore, 1894, 15-minute
S, Relay, 1894, 15-minute

SITE NAME: Seagirt Study
ADDRESS: Baltimore, MD
Baltimore, MD 21224
CLIENT: U.S. Army Corps of Engineers





This report includes information from the following map sheet(s).



TP, Baltimore, 1894, 15-minute
 SW, Relay, 1894, 15-minute

SITE NAME: Seagirt Study
 ADDRESS: Baltimore, MD
 Baltimore, MD 21224
 CLIENT: U.S. Army Corps of Engineers



APPENDIX E
EDR[®] HISTORICAL TOPOGRAPHICAL MAPS (1908-2014)

Seagirt Study

Baltimore, MD

Baltimore, MD 21224

Inquiry Number: 6519239.1

June 08, 2021

EDR Historical Topo Map Report

with QuadMatch™



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

06/08/21

Site Name:

Seagirt Study
Baltimore, MD
Baltimore, MD 21224
EDR Inquiry # 6519239.1

Client Name:

U.S. Army Corps of Engineers
2 Hopkins Plaza
Baltimore, MD 21201
Contact: Constantine Ditsious



EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by U.S. Army Corps of Engineers were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDR's Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:**Coordinates:**

P.O.#	W81W3G11489315	Latitude:	39.24514 39° 14' 43" North
Project:	W81W3G11489315	Longitude:	-76.54837 -76° 32' 54" West
		UTM Zone:	Zone 18 North
		UTM X Meters:	366384.52
		UTM Y Meters:	4345122.94
		Elevation:	0.00' above sea level

Maps Provided:

2014	1904, 1907
1974	1899
1966, 1969	1894
1953, 1957	
1949	
1946	
1944	
1908	

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This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

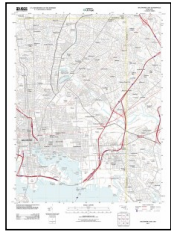
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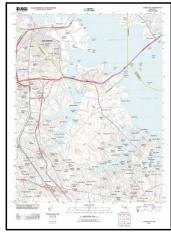
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2014 Source Sheets

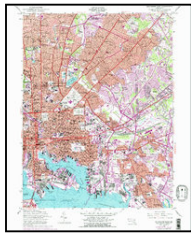


Baltimore East
2014
7.5-minute, 24000

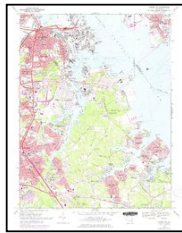


Curtis Bay
2014
7.5-minute, 24000

1974 Source Sheets



Baltimore East
1974
7.5-minute, 24000
Aerial Photo Revised 1974

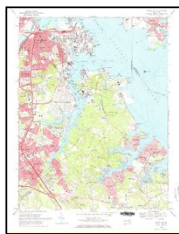


Curtis Bay
1974
7.5-minute, 24000
Aerial Photo Revised 1974

1966, 1969 Source Sheets

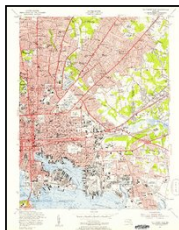


Baltimore East
1966
7.5-minute, 24000
Aerial Photo Revised 1966



Curtis Bay
1969
7.5-minute, 24000
Aerial Photo Revised 1966

1953, 1957 Source Sheets



Baltimore East
1953
7.5-minute, 24000
Aerial Photo Revised 1943

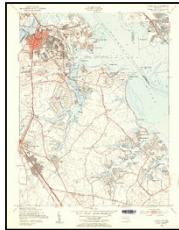


Curtis Bay
1957
7.5-minute, 24000
Aerial Photo Revised 1955

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1949 Source Sheets



Curtis Bay
1949
7.5-minute, 24000
Aerial Photo Revised 1947

1946 Source Sheets



BALTIMORE EAST
1946
7.5-minute, 24000

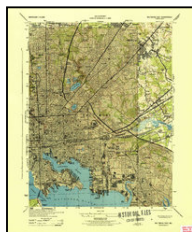


Curtis Bay
1946
7.5-minute, 24000
Aerial Photo Revised 1943

1944 Source Sheets

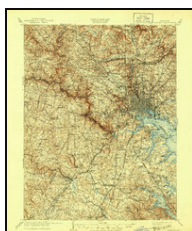


Curtis Bay
1944
7.5-minute, 31680
Aerial Photo Revised 1943



Baltimore East
1944
7.5-minute, 31680
Aerial Photo Revised 1943

1908 Source Sheets



Patapsco
1908
30-minute, 125000

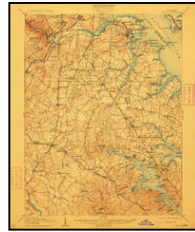
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1904, 1907 Source Sheets

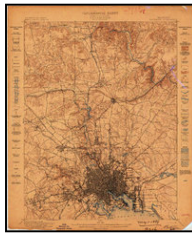


Baltimore
1904
15-minute, 62500



Relay
1907
15-minute, 62500

1899 Source Sheets

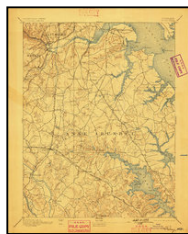


Baltimore
1899
15-minute, 62500

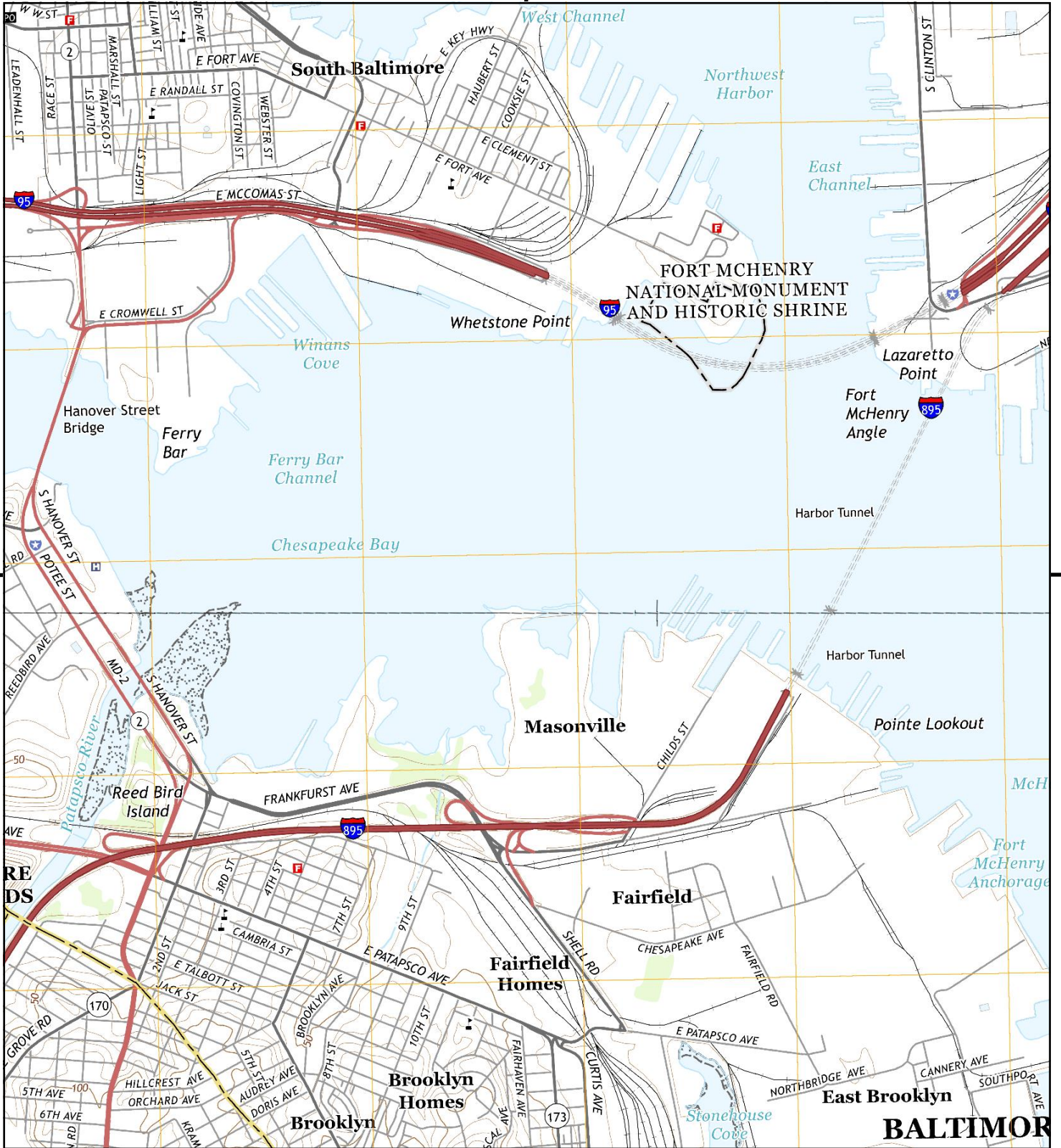
1894 Source Sheets



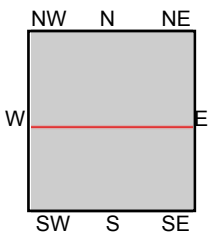
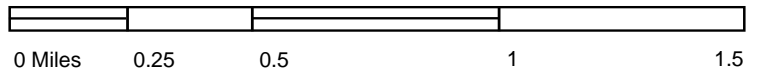
Baltimore
1894
15-minute, 62500



Relay
1894
15-minute, 62500



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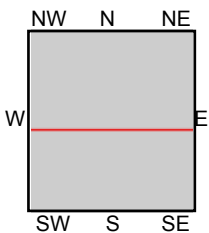
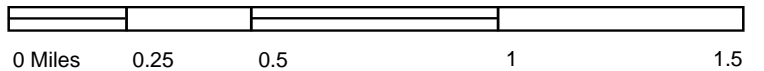
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S, Curtis Bay, 2014, 7.5-minute

SITE NAME: Seagirt Study
ADDRESS: Baltimore, MD
Baltimore, MD 21224
CLIENT: U.S. Army Corps of Engineers





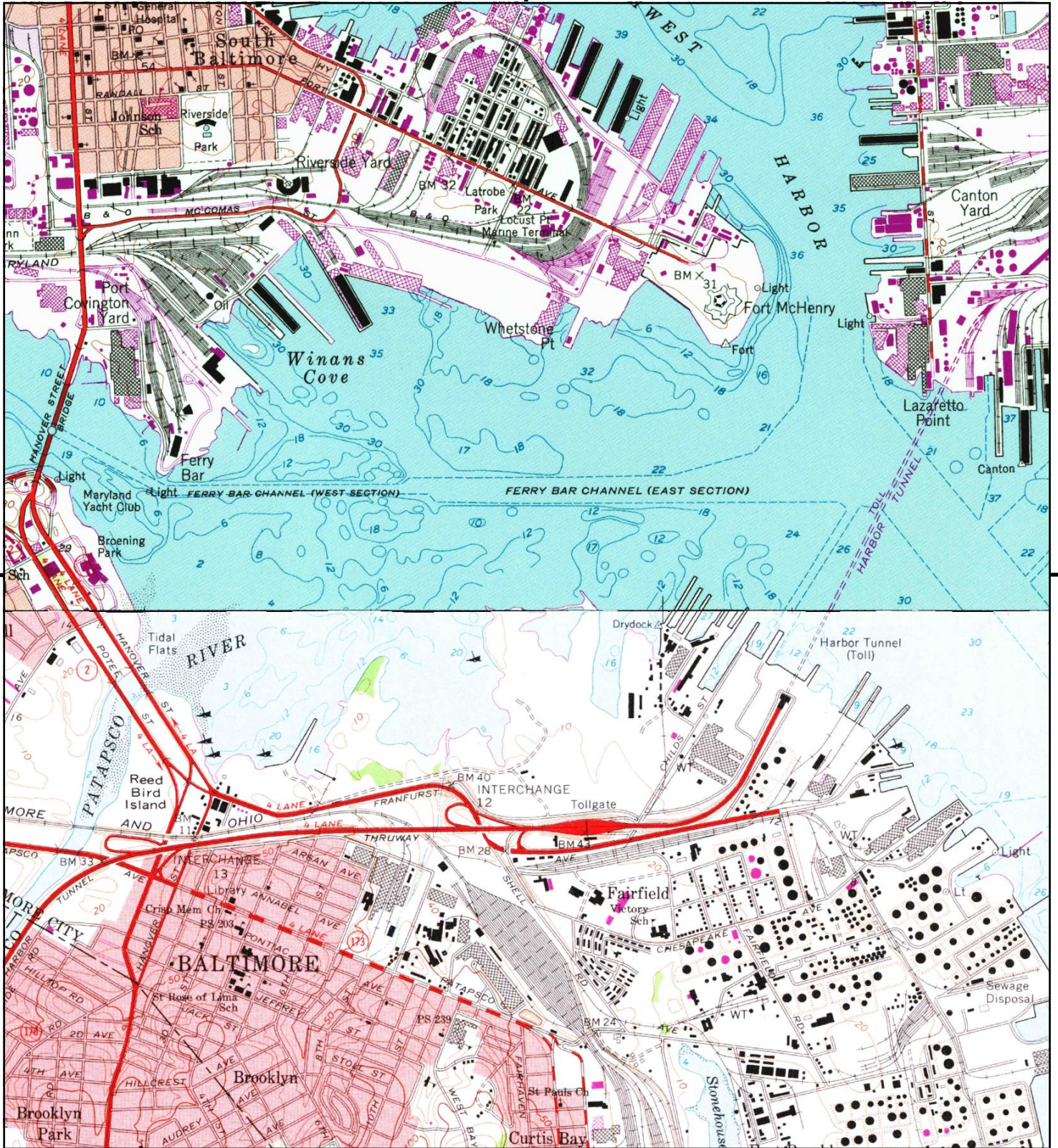
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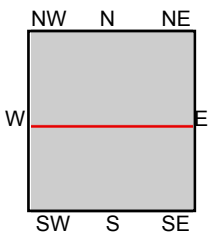
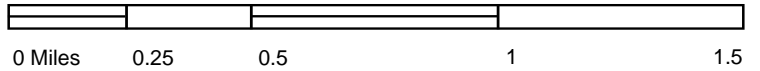
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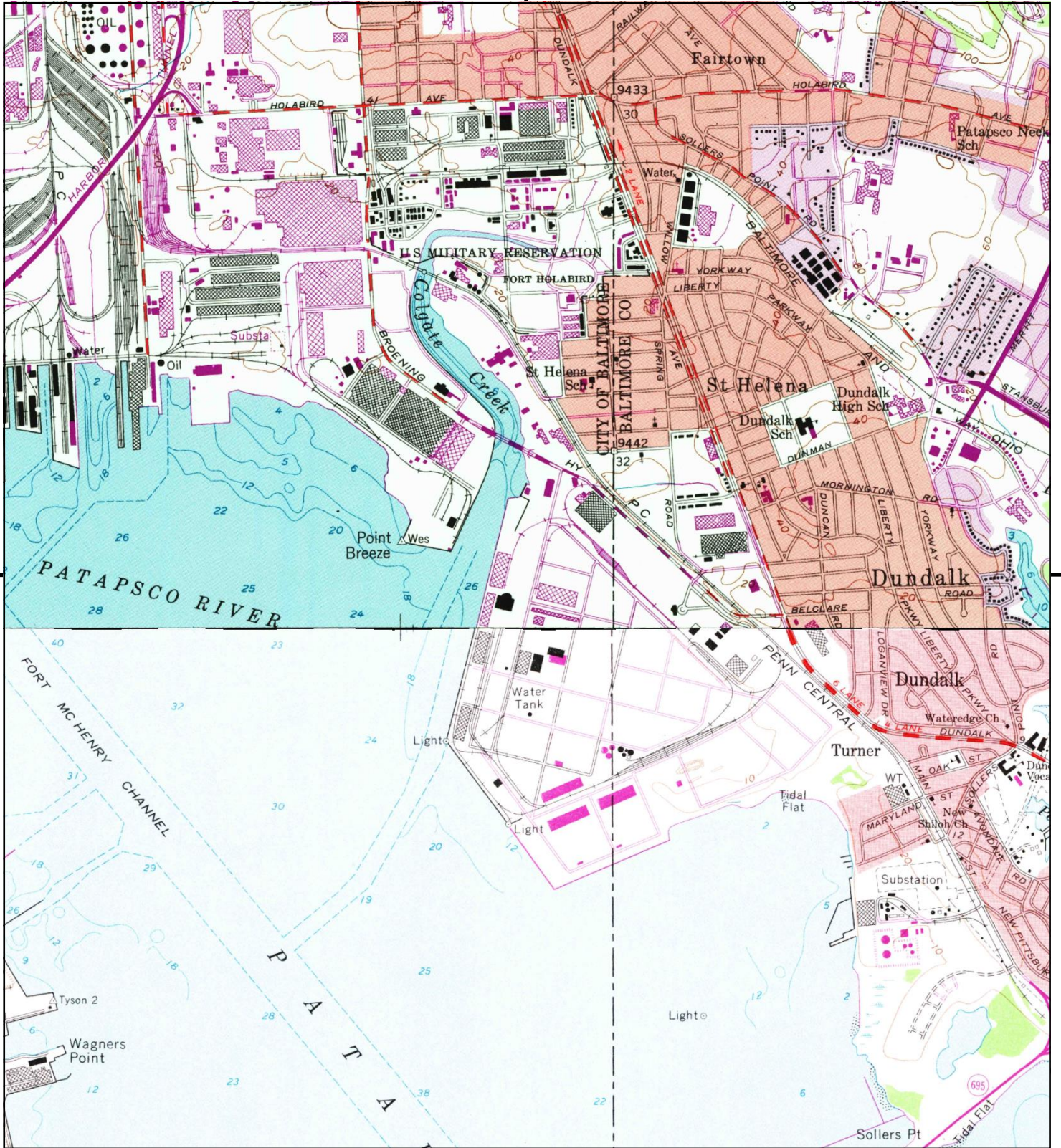
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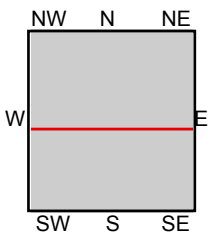
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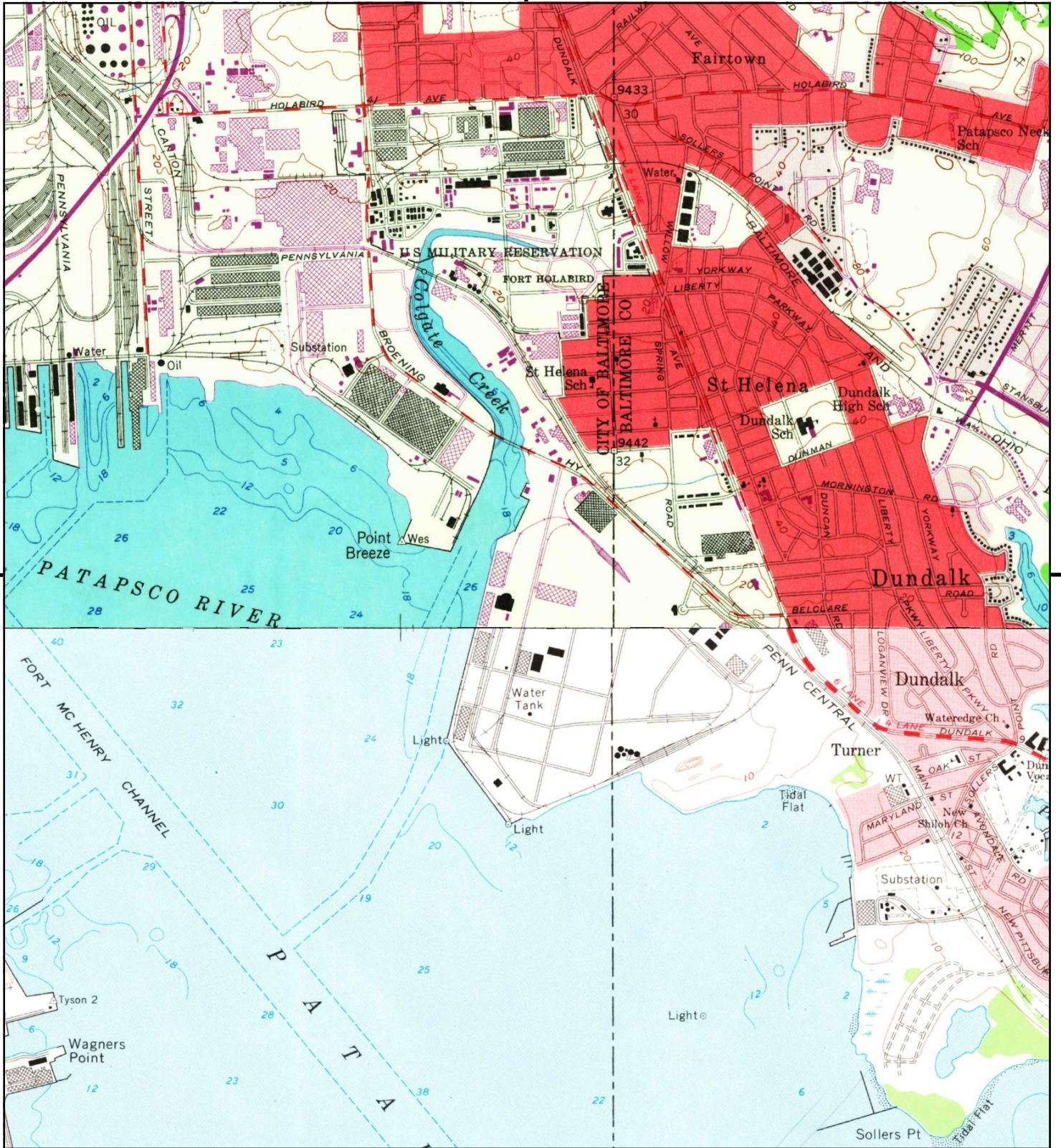
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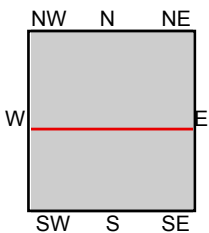
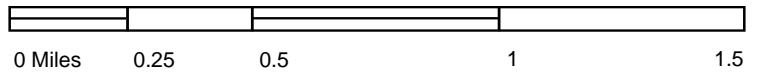
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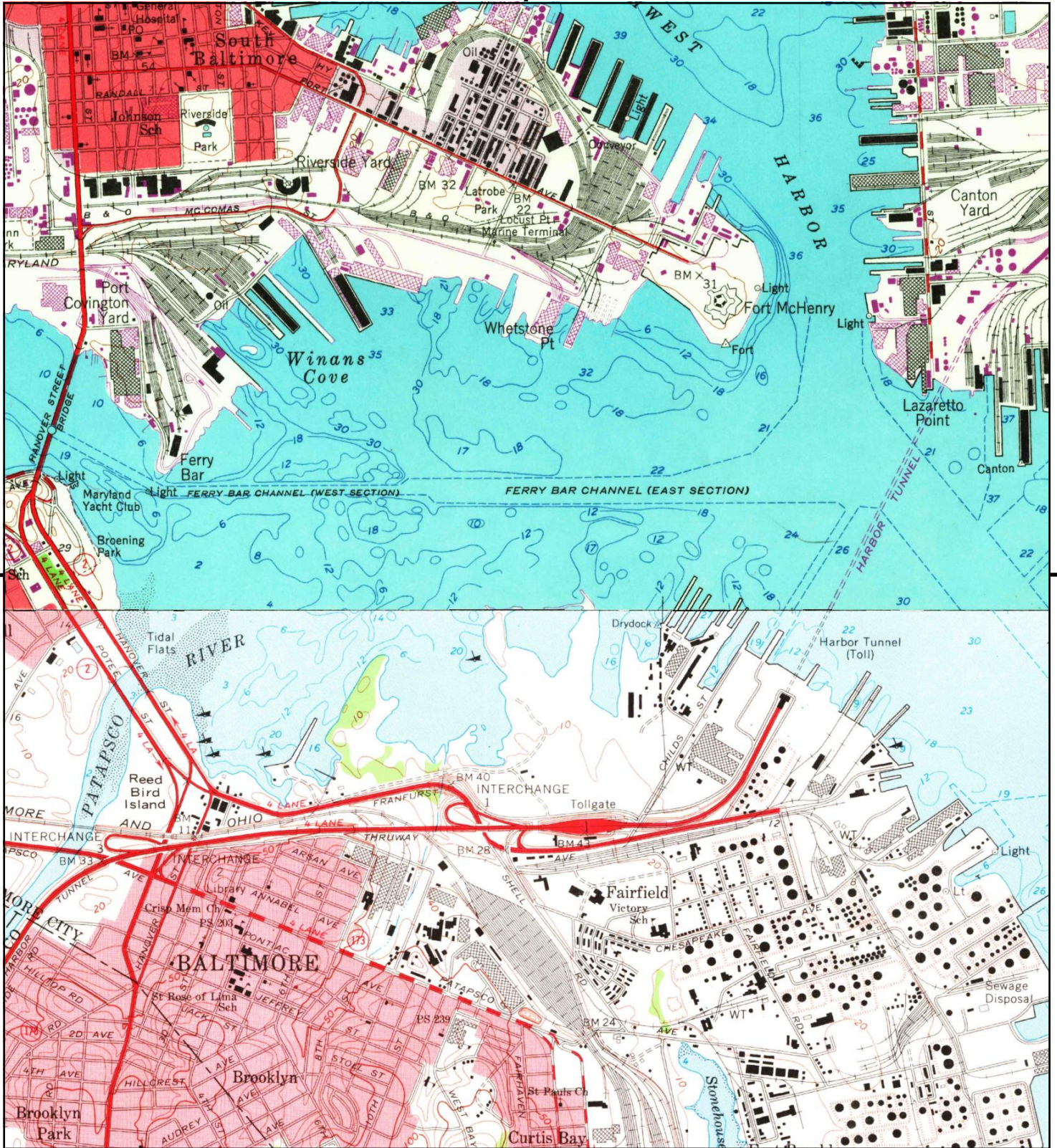
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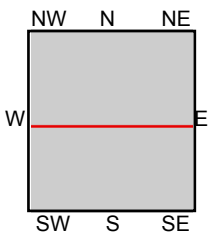
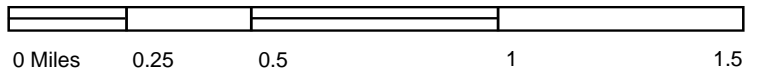
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S, Curtis Bay, 1969, 7.5-minute

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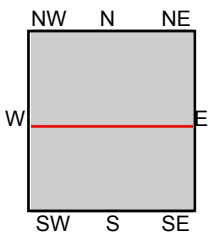
TP, Baltimore East, 1966, 7.5-minute
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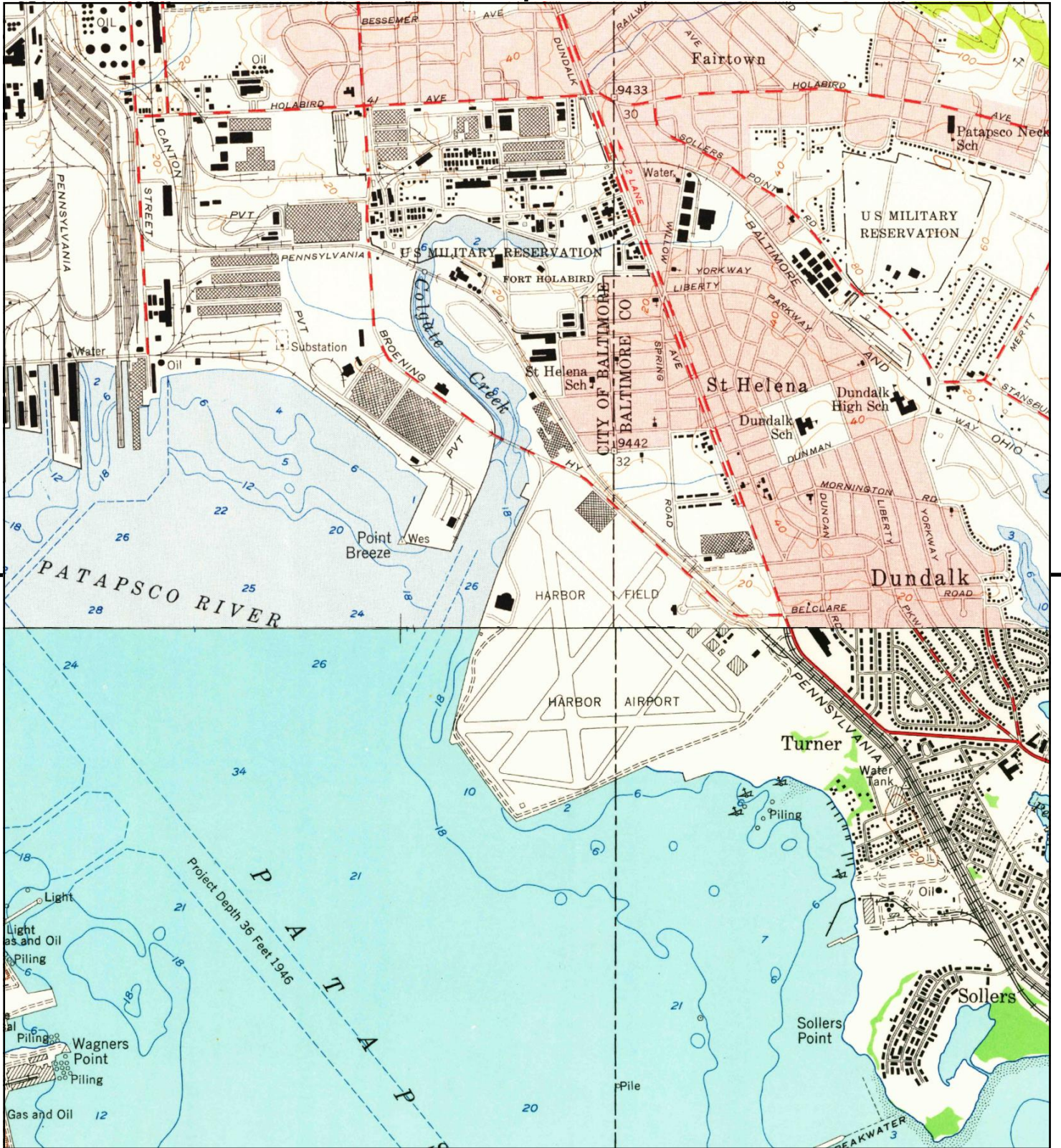
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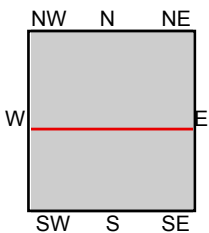
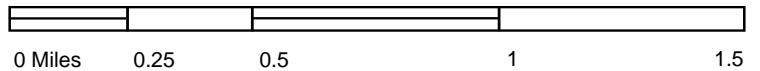
TP, Baltimore East, 1953, 7.5-minute
S, Curtis Bay, 1957, 7.5-minute

SITE NAME: Seagirt Study
ADDRESS: Baltimore, MD
Baltimore, MD 21224
CLIENT: U.S. Army Corps of Engineers





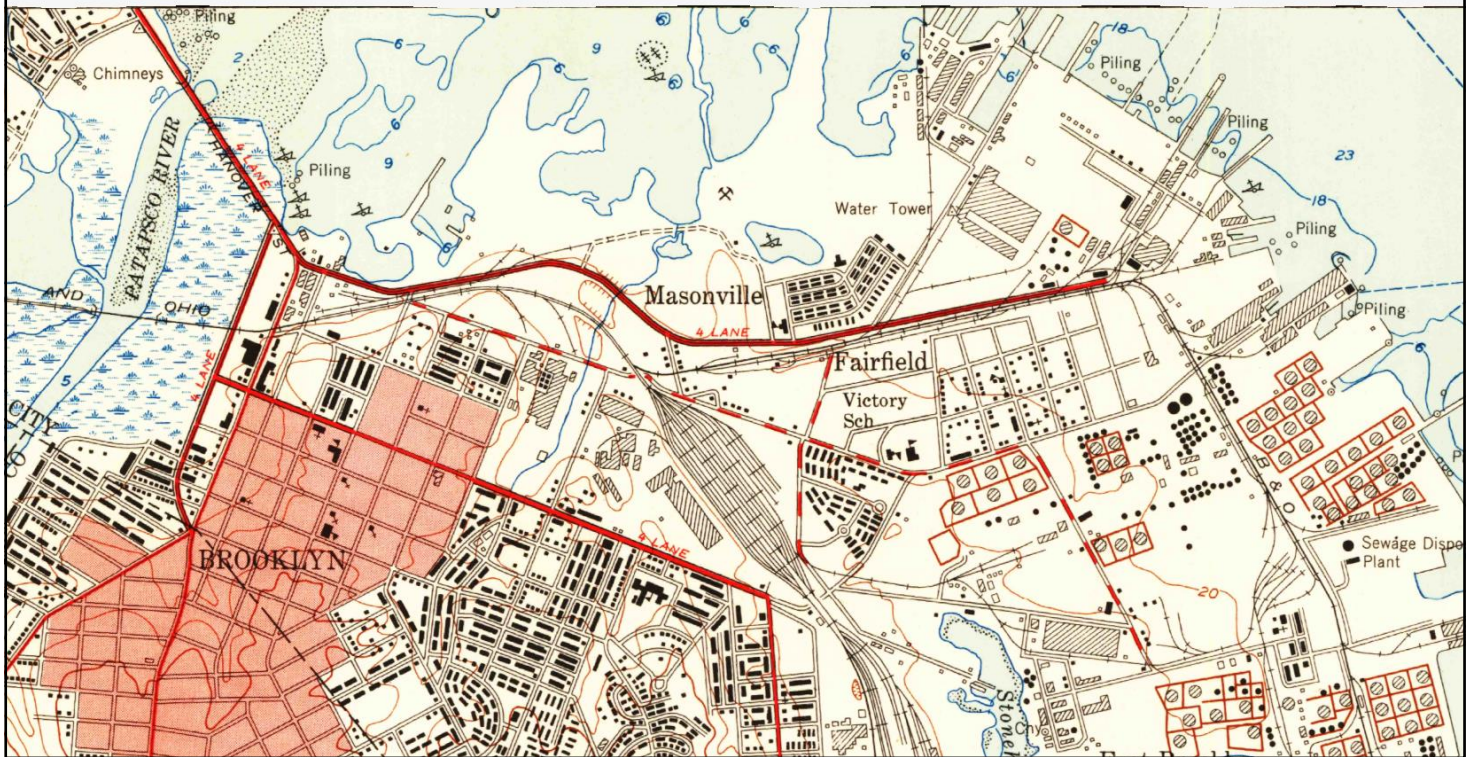
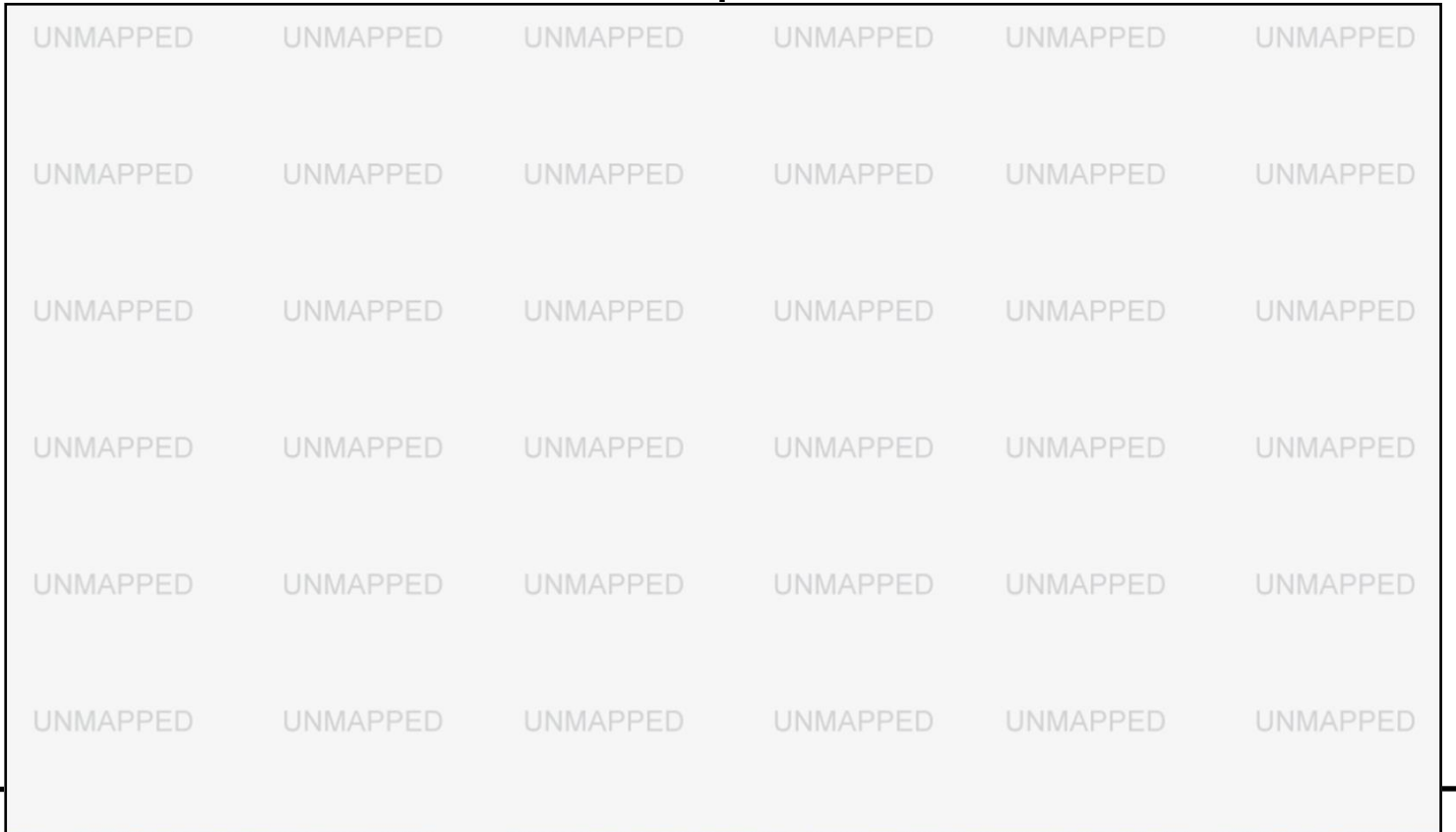
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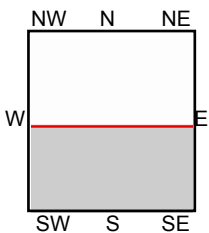
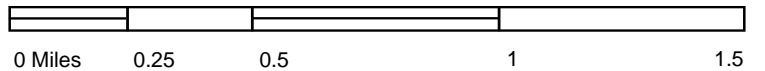
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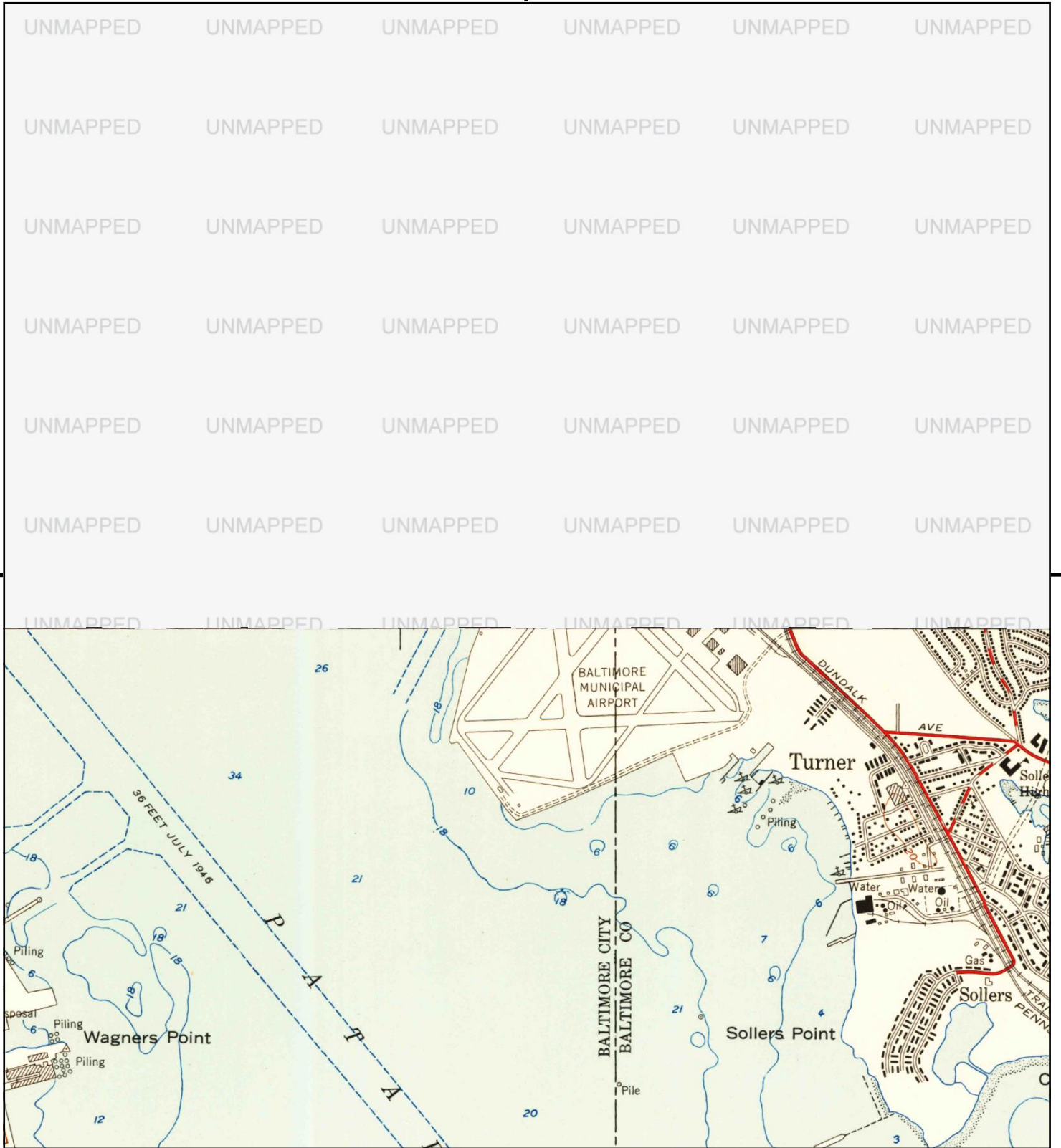
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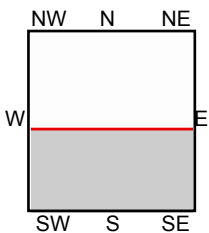
S, Curtis Bay, 1949, 7.5-minute

SITE NAME: Seagirt Study
ADDRESS: Baltimore, MD
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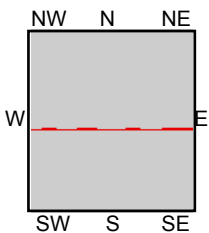
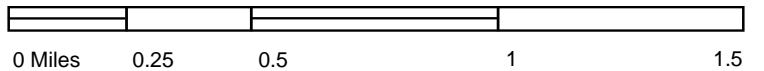
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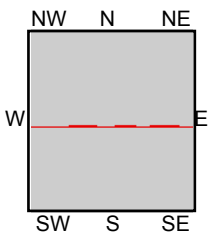
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SITE NAME: Seagirt Study
ADDRESS: Baltimore, MD
Baltimore, MD 21224
CLIENT: U.S. Army Corps of Engineers





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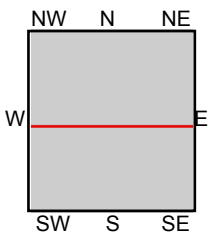
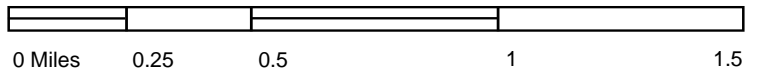
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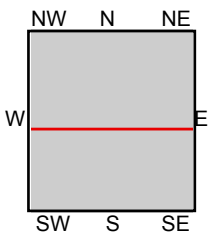
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ADDRESS: Baltimore, MD
Baltimore, MD 21224
CLIENT: U.S. Army Corps of Engineers





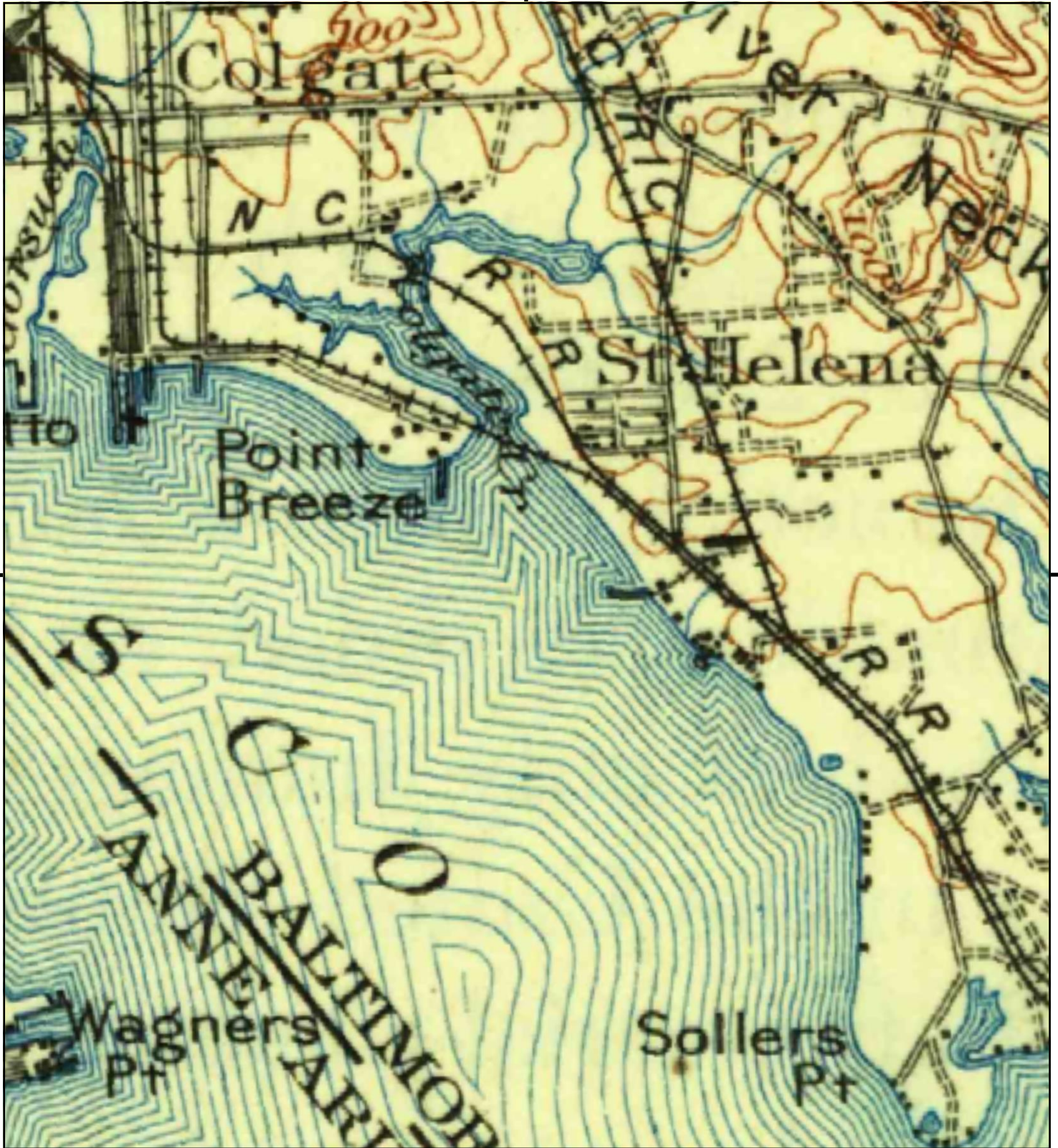
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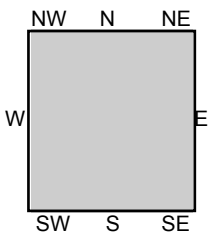
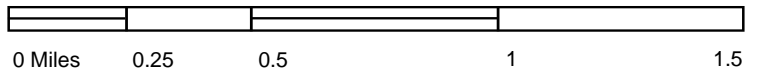
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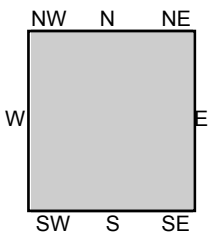
TP, Patapsco, 1908, 30-minute

SITE NAME: Seagirt Study
ADDRESS: Baltimore, MD
Baltimore, MD 21224
CLIENT: U.S. Army Corps of Engineers





This report includes information from the following map sheet(s).



TP, Patapsco, 1908, 30-minute

SITE NAME: Seagirt Study
 ADDRESS: Baltimore, MD
 Baltimore, MD 21224
 CLIENT: U.S. Army Corps of Engineers



DRAFT PROGRAMMATIC AGREEMENT BETWEEN THE U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT AND THE MARYLAND STATE HISTORIC PRESERVATION OFFICER REGARDING THE BALTIMORE METROPOLITAN COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY

WHEREAS, the U.S. Army Corps of Engineers, Baltimore District (USACE) has proposed to design and implement measures to reduce damages caused by flooding during coastal storms, an undertaking referred to as the Baltimore Metropolitan Coastal Storm Risk Management Project (Project); and,

WHEREAS, the USACE has drafted a feasibility study and environmental assessment that has identified a Tentatively Selected Plan (TSP) that includes the construction of floodwalls and non-structural measures; and,

WHEREAS, the USACE proposes to continue to refine the TSP; and,

WHEREAS, the Project is a federally funded undertaking, and therefore subject to the requirements of Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108; Section 106); and,

WHEREAS, the USACE has determined that that the proposed Undertaking may have the potential to cause an adverse effect on properties eligible for or listed in the National Register of Historic Places (NRHP) pursuant to Section 106 and 36 CFR Part 800; and,

WHEREAS, Interstate 895 has been determined eligible for the National Register of Historic Places; and,

WHEREAS, the USACE has consulted about the Project with the Maryland Historical Trust (MHT), which serves as the Maryland State Historic Preservation Office (SHPO), pursuant to 36 CFR Part 800, the regulations implementing Section 106; and,

WHEREAS, in consultation with the SHPO, has established the Project's area of potential effects (APE) as the areas where structural and non-structural measures may directly or indirectly alter the character defining features of historic properties, if any such properties exist; and,

WHEREAS, 36 CFR § 800.14(b)(1)[ii] allows federal agencies to fulfill their obligations under Section 106 through the development and implementation of programmatic agreements when effects on historic properties cannot be determined prior to approval of an undertaking; and,

WHEREAS, in accordance with 36 CFR Part 800.6(a)(1)(i)(C) and in accordance with 36 CFR Part 800.14(b), the USACE has invited the Advisory Council on Historic Preservation (ACHP) to participate in consultation via the ACHP e106 submission on (WILL BE ENTERED ONCE SUBMITTED); and,

WHEREAS, in accordance with 36 CFR § 800.2(c)(3) the USACE has invited the Baltimore County Department of Planning, Baltimore City Commission for Historical and Architectural Preservation (CHAP), National Park Service, and Preservation Maryland to consult on this Programmatic Agreement; and,

WHEREAS, in accordance with 36 CFR § 800.14(b)(2)(i), the USACE has invited the Delaware Nation, Delaware Tribe of Indians, and the Seneca-Cayuga Tribe to consult on this PA; and,

WHEREAS, the consulting parties agree that it is advisable to accomplish compliance with Section 106 of the NHPA through the development and execution of this Programmatic Agreement (PA) in accordance with 36 CFR § 800.6 and § 800.14 (b)(1)(ii); and,

WHEREAS, the USACE is coordinating, and shall continue to coordinate a public outreach program for this Project which in the past has consisted of a number of public meetings and the circulation of cultural resource and environmental documents related to the Section 106 and National Environmental Policy Act review processes; and,

NOW, THEREFORE, the USACE and the SHPO (Signatories) agree that the Project shall be implemented in accordance with the following stipulations in order to take into account the effects of the Project on historic properties:

DRAFT STIPULATIONS

The USACE shall ensure that the following measures are carried out:

I. Archaeological Resources

a. Identification

- i. Prior to initiating construction activities and in an effort to identify historic properties within the direct APE, pursuant to 36 CFR Part 800.4, the USACE shall complete efforts to identify archaeological sites, as applicable, eligible for listing in the NRHP within the direct APE for the Project. Any investigations will be conducted in accordance with Stipulations VI.a and VI.b of this Agreement. Pursuant to Stipulation III.b of this Agreement, the USACE shall provide the SHPO and other consulting parties the opportunity to review and comment on a report of its findings.
- ii. The USACE shall conduct any further investigations necessary to evaluate the NRHP-eligibility of any archaeological sites identified as a result of the activities described in Stipulation A.i. These evaluations will be conducted in accordance with 36 CFR Part 800.4(c), and pursuant to the requirements of Stipulations VI and VII.A. of this Agreement. Pursuant to Stipulation III.B., the USACE shall provide the SHPO and other

consulting parties the opportunity to review and comment on a report of its findings.

b. Assessment of Effects

If archaeological sites meeting the criteria for listing in the NRHP are identified as a result of the activities described in Stipulations I.a.i and I.a.ii, the USACE shall assess the effects of the Project on these properties in a manner consistent with 36 CFR Part 800.5, and submit its findings to the SHPO for its review and concurrence, and to the other Consulting Parties for review and comment pursuant to Stipulation III.B.

c. Mitigation of Adverse Effects

The mitigation of adverse effects to archaeological sites eligible for listing or listed in the NRHP shall be funded by USACE and the non-federal sponsor as part of the construction budget. No construction affecting an archaeological site eligible for listing in the NRHP shall be allowed to commence until the mitigation for adverse effects to that archaeological site have been completed. Mitigation may vary according to the type of effect, as follows:

- i. If the USACE, in consultation with the SHPO and other consulting parties, determines that an archaeological site eligible for listing on the NRHP will be adversely affected by the Project, the USACE, in consultation with the SHPO, shall determine whether avoidance or minimization of the adverse effects is practicable. If the adverse effects cannot be practicably avoided, the USACE, in consultation with the SHPO and other consulting parties, shall develop a treatment plan for the affected archaeological site. In a manner consistent with Stipulation I.c.ii of this Agreement, the USACE shall provide the SHPO and other consulting parties the opportunity to review and comment on the treatment plan.
- ii. Any treatment plan the USACE develops for an archaeological site under the terms of this stipulation shall be consistent with the requirements of Stipulation VI.a of this Agreement and shall include, at a minimum:
 1. Information on the portion of the property where data recovery or controlled site burial, as appropriate, is to be carried out, and the context in which the property is eligible for the NRHP;
 2. The results of previous research relevant to the project;
 3. Research problems or questions to be addressed, with an explanation of their relevance and importance;
 4. The field and laboratory analysis methods to be used, with a justification of their cost-effectiveness and how they apply to this particular property and the research needs;
 5. The methods to be used in artifact, data, and other records management;

6. Explicit provisions for disseminating in a timely manner the research findings to professional peers;
 7. Arrangements for presenting to the public the research findings, focusing particularly on the community or communities that may have interests in the results;
 8. The curation of recovered materials and records resulting from the data recovery in accordance with 36 CFR Part 79;
 9. Conservation of materials from both submerged and terrestrial contexts as appropriate for the preservation of artifacts; and
 10. Procedures for evaluating and treating discoveries of unexpected remains during the course of the project, including necessary consultation with other parties.
- iii. The USACE shall ensure the treatment plan is implemented and that any agreed-upon data recovery field operations have been completed before ground disturbing activities associated with the Project are initiated at or near the affected archaeological site. The USACE shall notify the SHPO once data recovery field operations have been completed so that a site visit may be scheduled, if the SHPO finds a visit appropriate. The proposed construction may proceed following this notification while the technical report is in preparation. The USACE shall ensure that the archaeological site form on file in the SHPO's Cultural Resources Geographic Information System, Medusa, is updated to reflect the implementation of the treatment plan for each affected site.

II. Architectural Properties

a. Identification

Within the direct APE, USACE shall ensure surveys are conducted of all pre-1973 structures that have not already been evaluated for NRHP eligibility ("unevaluated structures"). Within the indirect APE, USACE shall ensure surveys are conducted of any such unevaluated structure 50 years or older that would potentially be visible from the project alternative. USACE shall coordinate with SHPO and Consulting Parties to determine the eligibility of all such unevaluated structures identified during these surveys. These surveys shall employ methods conforming to those described in the SHPO's Standards and Guidelines for Architectural and Historical Investigations in Maryland (2019), or subsequent revisions or replacements to the document.

b. Assessment of Effects

USACE shall give a detailed account of effects to historic properties resulting from the Project and coordinate with the SHPO and other consulting parties to determine any adverse effects.

If architectural properties meeting the criteria for listing in the NRHP are identified as a result of the activities described in Stipulation II.a, the USACE shall assess the effects of the Project on these properties in a manner consistent with 36 CFR Part 800.5, and submit its findings to the SHPO for its review and concurrence, and to the other Consulting Parties for review and comment pursuant to Stipulation III.B.

c. Mitigation of Adverse Effects

The mitigation of adverse effects to architectural historic properties shall be funded by USACE and the non-federal sponsor as part of the construction budget. No construction affecting a given architectural historic property shall be allowed to commence until the mitigation for adverse effects to that property has been completed.

If the USACE, in consultation with the SHPO and other consulting parties, determines that an architectural property eligible for listing or listed in the NRHP will be adversely affected by the Project, the USACE, in consultation with the SHPO, shall determine whether avoidance or minimization of the adverse effects is practicable. If the adverse effects cannot be practicably avoided, the USACE, in consultation with the SHPO and other consulting parties, shall develop a treatment plan for the affected resource.

III. Preparation and Review of Documents

a. Technical Preparation

All archaeological studies, technical reports, and treatment plans prepared pursuant to this Agreement shall be consistent with the federal standards entitled Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (48 FR 44716-44742, September 29, 1983), the SHPO's Standards and Guidelines for Archeological Investigations in Maryland (1994), and the ACHP's Recommended Approach for Consultation on Recovery of Significant Information from Archaeological Sites (1999), or subsequent revisions or replacements to these documents.

b. Review

The SHPO and other consulting parties agree to provide comments to the USACE on all technical materials, findings, and other documentation arising from this Agreement within thirty (30) calendar days of receipt unless otherwise specified. If no comments are received from the SHPO and other consulting parties within the thirty (30) calendar-day review period, the USACE may assume that the non-responsive party has no comment. The USACE shall take into consideration all comments received in writing from the SHPO and other consulting parties within the thirty (30) calendar-day review period.

c. Physical Documents

The USACE shall provide the SHPO two (2) copies, one (1) hard copy comb-bound on acid-free paper and one (1) in Adobe (R) Portable Document Format (.pdf) on compact disk of all final reports prepared pursuant to this Agreement. The USACE shall also provide the other consulting parties all final reports in a format of their choosing.

IV. Curation Standards

The USACE shall ensure that all original archaeological records (research notes, field records, maps, drawings, and photographic records) and all archaeological collections recovered from the USACE Project area produced as a result of implementing the Stipulations of this Agreement are provided to a facility that meets the standards of 36 CFR Part 79, Curation of Federally Owned and Administered Archaeological Collections. Any archaeological items and materials from privately-owned lands shall be returned to their owners upon completion of analyses required for Section 106 compliance under this PA.

V. Changes in Project Scope

In the event of any changes to the Project scope that may alter the APE, the USACE shall consult with the SHPO and other consulting parties pursuant to 36 CFR § 800.2 through § 800.5.

VI. Standards

a. Research Standards

All work carried out pursuant to this Agreement shall the Secretary of the Interior's Standards for Archaeology and Historic Preservation (SOI's Standards: http://www.nps.gov/history/local-law/arch_stnds_9.htm).

VII. Professional Qualification Standards

The USACE shall ensure that all work carried out pursuant to this Agreement shall be done by or under the direct supervision of marine archaeology professionals who meet the Secretary of Interior's Professional Qualifications Standards. The USACE shall ensure that consultants retained for services pursuant to this Agreement meet these standards.

VIII. Post-Review Discoveries

- a. Should any activity that takes place as a result of this Agreement result in unanticipated or post-review archaeological discoveries, the USACE shall ensure work in the area is immediately stopped, the area secured, and the SHPO and other consulting parties notified. The USACE, in consultation with the SHPO and other consulting parties, shall determine if significant resources are present and, if so, may be adversely affected by the remaining work. If avoidance of the

resources is not possible the USACE shall ensure appropriate minimization and/or mitigation measures are implemented in consultation with the SHPO and other consulting parties before activity in the location of the discovery resumes.

b. Treatment of Human Remains

- i. In the event human skeletal remains or burials are encountered during implementation of the Project, the USACE shall coordinate its compliance with Section 106 with other applicable federal, state, and local laws and reviews as appropriate. As such, if human remains are discovered, the USACE shall ensure work in that portion of the Project area is stopped immediately. The remains shall be covered and/or protected in place in such a way that minimizes further exposure of and damage to the remains and the USACE shall immediately notify the SHPO and other consulting parties. If the remains are found to be Native American, in accordance with applicable law, the USACE shall develop a treatment plan in consultation with the SHPO, other consulting parties, and appropriate federal and state recognized Indian tribes. The USACE shall ensure that any treatment and reburial plan is fully implemented. If the remains are not Native American, the appropriate local authority shall be consulted to determine final disposition of the remains. Avoidance and preservation in place is the preferred option for treating human remains.

IX. Communications

Electronic mail (email) may serve as the official correspondence method for all communications regarding this Agreement and its provisions. See Appendix C for a list of contacts and email addresses. Contact information in Appendix C may be updated as needed without an amendment to this Agreement. It is the responsibility of each party to the Agreement to immediately inform the USACE of any change in name, address, email address, or phone number of any point-of-contact. The USACE shall forward this information to all parties to this Agreement by email.

X. Electronic Copies

Within one (1) week of the last signature on this Agreement, the USACE shall provide the SHPO and other consulting parties with one (1) high-quality, legible, color, electronic copy of this fully-executed Agreement and all of its appendices fully integrated into one, single document. Internet links shall not be used as a means to provide copies of the appendices since web-based information often changes. If the electronic copy is too large to send by email, the USACE shall provide the SHPO and other consulting parties with a copy of this Agreement on a compact disc or other appropriate means.

XI. Monitoring and Reporting

Each year on the anniversary of the execution of this Agreement until it expires or is terminated, the USACE shall provide all parties to this Agreement a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in the USACE's efforts to carry out the terms of this Agreement. The reporting period shall be the fiscal year from October 1 to September 30.

XII. Dispute Resolution

Should any party to this Agreement object in writing to the USACE regarding any actions proposed under this Agreement, or the manner in which the terms of this Agreement are implemented, the USACE shall consult with the objecting party to resolve the objection. If the USACE determines that such objection cannot be resolved, the USACE shall:

a. Documentation

Forward all documentation relevant to the dispute, including the USACE's proposed resolution, to the ACHP. The ACHP shall provide the USACE with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the USACE shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and consulting parties, and provide them with a copy of this written response. The USACE shall then proceed according to its final decision.

b. Resolution

If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, the USACE may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the USACE shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and consulting parties to the Agreement, and provide them and the ACHP with a copy of such a written response.

c. Continuity

The USACE's responsibility to carry out all other actions subject to the terms of this Agreement that are not the subject of the dispute remain unchanged.

XIII. Availability of Federal Funds / Anti-Deficiency Act

The obligations of the USACE under this Agreement are subject to the availability of appropriated funds, and the stipulations of this Agreement are subject to the provisions of the Anti-Deficiency Act and other applicable provisions of federal fiscal law. The USACE shall make a reasonable and good faith effort to secure the necessary funds to implement its obligations under this Agreement. If compliance with the Anti-Deficiency Act or other applicable provisions of federal fiscal law alters or impairs USACE's ability to implement its obligations under this Agreement, the USACE shall consult in

accordance with Stipulation XIV (Amendments) and, if necessary, Stipulation XV (Termination).

XIV. Amendments

This Agreement may be amended when an amendment is agreed to in writing by both Signatories. The amendment shall be effective on the date a copy signed by both of the Signatories is filed with ACHP.

XV. Termination

If either Signatory to this Agreement determines that the terms of the Agreement cannot or are not being carried out, that objecting party shall so notify the other Signatory in writing and consult with them to seek amendment of the Agreement. If within sixty (60) days, an amendment cannot be reached, either Signatory may terminate the Agreement upon written notification to the other Signatory. Once the Agreement is terminated, and prior to work continuing on the Project, the USACE must (a) either execute a new programmatic agreement pursuant to 36 CFR 800.14.(b) or (b) comply with 36 CFR 800 for any uncompleted aspects of the Project. The USACE shall notify the SHPO and other consulting parties as to the course of the action it will pursue.

XVI. Duration

This Agreement shall be in effect for a period of fifteen (15) years from the date of the last signature of a Signatory party on this Agreement. At any time in the six (6)-month period prior to such date, the USACE may request that the Signatories consider an extension of this Agreement. No extension shall be effective unless all Signatories to the Agreement have agreed with the extension in writing.

EXECUTION OF THIS AGREEMENT

Execution of this Agreement and implementation of its terms evidences that USACE has taken into account the effects of the Project on historic properties and afforded ACHP a reasonable opportunity to comment.

Appendix A – Area of Potential Effects

Appendix B – Procedures for Post-Review Discoveries

Appendix C – Contact Information

Signatures Follow on Separate Page

SIGNATORY:

U.S. Army Corps of Engineers

Colonel Esther S. Pinchasin,
Commander and District Engineer

Date

DRAFT

SIGNATORY:

Maryland State Historic Preservation Officer

Elizabeth Hughes, SHPO

Date

DRAFT

DRAFT APPENDIX A
Area of Potential Effects



Tentatively Selected Plan - Alternative Plan 5A
Critical Infrastructure with Select Non-Structural Measures Plan
Baltimore, Maryland



Map: Critical Infrastructure with Select NonStructural Plan.mxd
Developed by: USACE Baltimore
Date: 4/1/2022

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DRAFT APPENDIX C
Contact Information

DRAFT

U.S. Army Corps of Engineers, Baltimore District

Ethan Bean
Cultural Resources Specialist
U.S. Army Corps of Engineers
Baltimore District (NAB)
2 Hopkins Plaza
Baltimore, MD 21201
Office: 410-962-2173
Ethan.a.bean@usace.army.mil

DRAFT

Baltimore Metro and Martin State Airport Soils Analysis Table

Martin State Airport Planning Units

Map Unit Symbol	Map Unit Name	Hydric Rating	K-Factor	Farmland Classification
BfB	Beltsville-Urban land complex, 0 to 5 percent slopes	5	0.37	Not prime farmland
CmA	Corsica mucky loam, 0 to 2 percent slopes	95	N/A	Farmland of statewide importance
EeA	Elkton silt loam, 0 to 2 percent slopes	95	0.43	Not prime farmland
EfA	Elkton-Urban land complex, 0 to 2 percent slopes	70	0.43	Not prime farmland
FaaA	Fallsington sandy loams, 0 to 2 percent slopes, northern coastal plain	75	N/A	Prime farmland if drained
FBA	Fallsington-Urban land complex, 0 to 2 percent slopes	55	0.20	Not prime farmland
FcB	Fort Mott loamy sand, 0 to 5 percent slopes	0	0.17	Prime farmland if irrigated
FdB	Fort Mott-Urban land complex, 0 to 5 percent slopes	0	0.17	Not prime farmland
GbB	Galestown loamy sand, 0 to 5 percent slopes	0	0.10	Prime farmland if irrigated
GbC	Galestown loamy sand, 5 to 10 percent slopes	0	0.10	Farmland of statewide importance
IsA	Issue silt loam, occasionally flooded	10	0.37	Not prime farmland
IuA	Issue-Urban land complex, occasionally flooded	10	0.37	Not prime farmland
KeA	Keyport silt loam, 0 to 2 percent slopes	5	0.49	All areas are prime farmland
KeB	Keyport silt loam, 2 to 5 percent slopes	5	0.49	All areas are prime farmland
KeC	Keyport silt loam, 5 to 10 percent slopes	5	0.49	Farmland of statewide importance

Martin State Airport Planning Units

Map Unit Symbol	Map Unit Name	Hydric Rating	K-Factor	Farmland Classification
KuB	Keyport-Urban land complex, 0 to 5 percent slopes	5	0.49	Not prime farmland
MfC	Matapeake silt loam, 5 to 10 percent slopes	0	0.49	Farmland of statewide importance
MgB	Matapeake-Urban land complex, 0 to 5 percent slopes	0	0.49	Not prime farmland
MhaB	Mattapex silt loam, 2 to 5 percent slopes, northern coastal plain	5	0.49	All areas are prime farmland
MhC	Mattapex silt loam, 5 to 10 percent slopes	2	0.49	Farmland of statewide importance
MkB	Mattapex-Urban land complex, 0-5 percent slopes	0	0.49	Not prime farmland
NM	Nanticoke and Mannington soils, very frequently flooded, tidal	100	0.43	Not prime farmland
OtA	Othello silt loams, 0 to 2 percent slopes, northern coastal plain	95	0.43	Farmland of statewide importance
OuB	Othello-Urban land complex, 0 to 5 percent slopes	65	N/A	Not prime farmland
RsB	Russett fine sandy loam, 2 to 5 percent slopes	0	0.28	All areas are prime farmland
RsC	Russett fine sandy loam, 5 to 10 percent slopes	0	0.28	Farmland of statewide importance
RuB	Russett-Urban land complex, 0 to 5 percent slopes	0	N/A	Not prime farmland
SaaA	Sassafras sandy loam, 0 to 2 percent slopes, Northern Coastal Plain	4	0.20	All areas are prime farmland
SaaB	Sassafras sandy loam, 2 to 5 percent slopes, Northern Coastal Plain	4	0.20	All areas are prime farmland

Martin State Airport Planning Units

Map Unit Symbol	Map Unit Name	Hydric Rating	K-Factor	Farmland Classification
SaaC	Sassafras sandy loam, 5 to 10 percent slopes, Northern Coastal Plain	4	0.20	Farmland of statewide importance
SaD	Sassafras sandy loam, 10 to 15 percent slopes	5	0.37	Not prime farmland
SbA	Sassafras loam, 0 to 2 percent slopes	4	0.32	All areas are prime farmland
SbB	Sassafras loam, 2 to 5 percent slopes	4	0.32	All areas are prime farmland
SbC	Sassafras loam, 5 to 10 percent slopes	0	0.32	Farmland of statewide importance
SfB	Sassafras-Urban land complex, 0 to 5 percent slopes	0	0.24	Not prime farmland
ShD	Sassafras-Croom-Urban land complex, 5 to 15 percent slopes	0	0.15	Not prime farmland
UaB	Udorthents, 0 to 8 percent slopes	0	0.24	Not prime farmland
UcF	Udorthents, highway, 0 to 65 percent slopes	0	N/A	Not prime farmland
Ur	Urban land, 0 to 8 percent slopes	0	N/A	Not prime farmland
UuB	Urban land-Udorthents complex, 0 to 8 percent	0	N/A	Not prime farmland
WdaA	Woodstown sandy loam, 0 to 2 percent slopes, Northern Coastal Plain	7	0.24	All areas are prime farmland
WdaB	Woodstown sandy loam, 2 to 5 percent slopes, Northern Coastal Plain	7	0.24	All areas are prime farmland
WuB	Woodstown-Urban land complex, 0 to 5 percent slopes	5	0.28	Not prime farmland

Baltimore Metro Planning Units

Map Unit Symbol	Map Unit Name	Hydric Rating	K-Factor	Farmland Classification
2B	Beltsville-Keyport complex, 0 to 8 percent slopes	0	0.37	Not prime farmland
2UB	Beltsville-Urban land complex, 0 to 8 percent slopes	5	0.37	Not prime farmland
3UB	Urban land-Beltsville-Keyport complex, 0 to 8 percent slopes	0	N/A	Not prime farmland
4UB	Urban land-Beltsville complex, 0 to 8 percent slopes	5	N/A	Not prime farmland
7UB	Christiana-Urban land complex, 0 to 8 percent slopes	0	0.37	Not prime farmland
7UC	Christiana-Urban land complex, 8 to 15 percent slopes	0	0.37	Not prime farmland
9UB	Elkton-Urban land complex, 0 to 5 percent slopes	41	N/A	Not prime farmland
11B	Galestown loamy sand, 0 to 8 percent slopes	0	0.15	Not prime farmland
13UB	Joppa-Urban land complex, 0 to 8 percent slopes	0	N/A	Not prime farmland
13UC	Joppa-Urban land complex, 8 to 15 percent slopes	0	N/A	Not prime farmland
14UB	Urban land-Joppa complex, 0 to 8 percent slopes	0	N/A	Not prime farmland
15B	Keyport loam, 0 to 8 percent slopes	5	0.43	Not prime farmland
15UB	Keyport-Urban land complex, 0 to 8 percent slopes	5	0.43	Not prime farmland
16UB	Urban land-Keyport complex, 0 to 8 percent slopes	0	N/A	Not prime farmland
17B	Legore loam, 0 to 8 percent slopes	0	0.32	Not prime farmland
17C	Legore loam, 8 to 15 percent slopes	0	0.32	Not prime farmland

Baltimore Metro Planning Units

Map Unit Symbol	Map Unit Name	Hydric Rating	K-Factor	Farmland Classification
18UB	Legore-Urban land complex, 0 to 8 percent slopes	0	0.32	Not prime farmland
20UB	Leonardtown-Urban land complex, 0 to 8 percent slopes	46	0.49	Not prime farmland
24UB	Matapeake-Urban land complex, 0 to 8 percent slopes	0	0.55	Not prime farmland
25UB	Mattapex-Urban land complex, 0 to 8 percent slopes	5	0.49	Not prime farmland
29B	Sassafras, gravelly loam, 0 to 8 percent slopes	0	0.20	Not prime farmland
29UB	Sassafras-Urban land complex, 0 to 8 percent slopes	0	N/A	Not prime farmland
30B	Sassafras-Joppa complex, 0 to 8 percent slopes	0	0.20	Not prime farmland
31UB	Urban land-Sassafras complex, 0 to 8 percent slopes	0	N/A	Not prime farmland
32	Sulfaquepts, dredge	100	N/A	Not prime farmland
33UB	Urban land-Sunnyside complex, 0 to 8 percent slopes	0	N/A	Not prime farmland
33UC	Sunnyside-Urban land complex, 8 to 15 percent slopes	0	N/A	Not prime farmland
34UB	Urban land-Sunnyside- Christiana complex, 0 to 8 percent slopes	0	N/A	Not prime farmland

Baltimore Metro Planning Units

Map Unit Symbol	Map Unit Name	Hydric Rating	K-Factor	Farmland Classification
34UC	Urban land-Sunnyside- Christiana complex, 8 to 15 percent slopes	0	N/A	Not prime farmland
35B	Sunnyside fine sandy loam, 0 to 8 percent slopes	0	0.28	Not prime farmland
35C	Sunnyside fine sandy loam, 8 to 15 percent slopes	0	0.28	Not prime farmland
36UB	Sunnyside-Urban land complex, 0 to 8 percent slopes	0	N/A	Not prime farmland
37	Sulfaquepts, frequently flooded	100	N/A	Not prime farmland
38C	Udorthents, clayey, very deep, 0 to 15 percent slopes	0	0.32	Not prime farmland
39C	Udorthents, sanitary landfill, 0 to 15 percent slopes	0	N/A	Not prime farmland
40B	Udorthents, loamy, very deep, 0 to 8 percent slopes	0	0.32	Not prime farmland
40C	Udorthents, loamy, very deep, 8 to 15 percent slopes	0	0.32	Not prime farmland
40E	Udorthents, loamy, very deep, 15 to 60 percent slopes	0	0.32	Not prime farmland
42E	Udorthents, smoothed, 0 to 35 percent slopes	0	0.10	Not prime farmland
43U	Urban land-Udorthents complex, occasionally flooded	3	N/A	Not prime farmland

Baltimore Metro Planning Units

Map Unit Symbol	Map Unit Name	Hydric Rating	K-Factor	Farmland Classification
44UC	Urban land, 0 to 15 percent slopes	0	N/A	Not prime farmland
45UB	Woodstown-Urban land complex, 0 to 8 percent slopes	0	N/A	Not prime farmland
50A	Hatboro-Codorus complex, 0 to 3 percent slopes, frequently flooded	60	0.49	Not prime farmland