

CHESAPEAKE **BAY CROSSING STUDY** — TIER 1 NEPA —

SOCIOECONOMIC TECHNICAL REPORT



Maryland
Transportation
Authority

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ABBREVIATIONS AND ACRONYMS

AAF	Army Airfield
ACS	American Community Survey
BWI	Baltimore/Washington International
CARA	Corridor Alternatives Retained for Analysis
CSA	Combined Statistical Area
EJ	Environmental Justice
EO	Executive Order
FHWA	Federal Highway Administration
GIS	Geographic Information System
HHS	Health and Human Services
LEP	Limited English Proficiency
MARC	Maryland Area Regional Commuter
MDNR	Maryland Department of Natural Resources
MDP	Maryland Department of Planning
MDTA	Maryland Transportation Authority
MSA	Metropolitan Statistical Area
MTA	Maryland Transit Authority
MUST	Maryland Upper Shore Transit
NEPA	National Environmental Policy Act
NRMA	Natural Resource Management Area
NWR	National Wildlife Refuge
OMB	Office of Management and Budget
PFA	Priority Funding Area
SP	State Park
TSM/TDM	Transportation Systems Management/Travel Demand Management
USDOT	United States Department of Transportation
USGS	United States Geological Survey
WMA	Wildlife Management Area
WMATA	Washington Metropolitan Area Transportation Authority

1.0 INTRODUCTION

1.1 Project Description

The Maryland Transportation Authority (MDTA), in coordination with the Federal Highway Administration (FHWA) is preparing a Tier 1 Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA) for the Chesapeake Bay Crossing Study: Tier 1 NEPA (Bay Crossing Study). The purpose of the Bay Crossing Study is to consider corridors for providing additional traffic capacity and access across the Chesapeake Bay in order to improve mobility, travel reliability and safety at the existing Governor William Preston Lane Jr. Memorial (Bay) Bridge. Evaluation of any potential new crossing corridor will include an assessment of existing and potentially expanded transportation infrastructure needed to support additional capacity, improve travel times, and accommodate maintenance activities, while considering financial viability and environmental responsibility. The Tier 1 study initiates the NEPA process with the goal of narrowing the scale and scope of this complex project prior to more detailed analysis in a future Tier 2 NEPA analysis. The Tier 1 study area includes the entire length of the Chesapeake Bay in Maryland, extending nearly 100 miles from the northern part of the Chesapeake Bay near Havre de Grace, Maryland south to near Point Lookout, Maryland (**Figure 1-1**).

This technical study report provides an overview of relevant socioeconomic demographic data, including population characteristics, communities and existing land uses, community facilities (such as park, schools, emergency services), and economic characteristics (such as employment, household income) in the study area. In addition, the report offers a qualitative summary of potential impacts to these socioeconomic resources, including attention to impacts to minority and low-income populations pursuant to federal requirements.

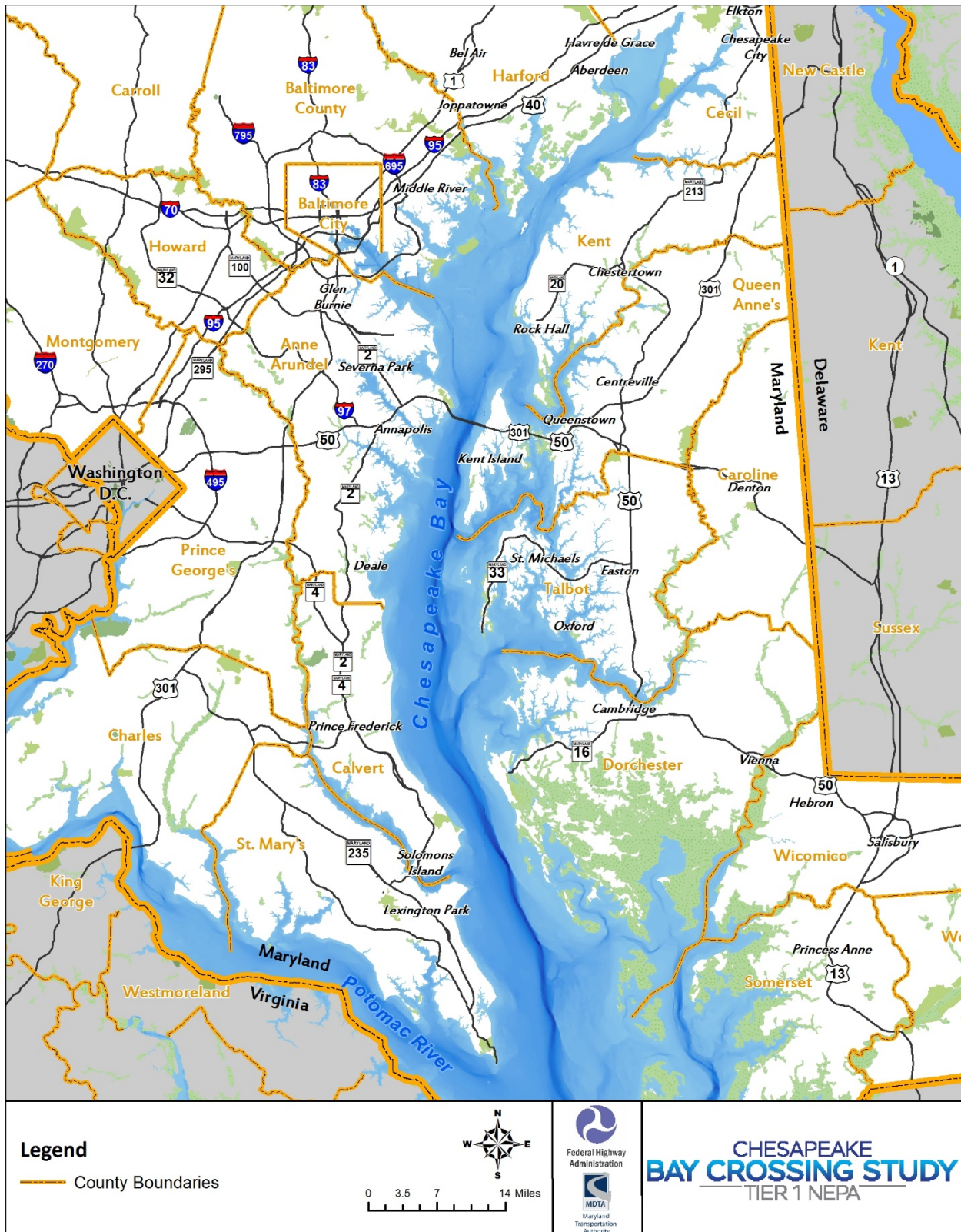
1.2 Purpose and Need

Evaluation of the Corridor Alternatives Retained for Analysis (CARA) included an assessment of existing and potentially expanded transportation infrastructure needed to support additional capacity, improve travel times, and accommodate maintenance activities, while considering financial viability and environmental responsibility. The Tier 1 NEPA analysis considers a “No-Build” alternative and addresses the following needs listed under **Section 1.2.1** through **1.2.4**.

1.2.1 **Adequate Capacity**

The existing two spans of the Bay Bridge, which are part of US 50/US 301 between Anne Arundel and Queen Anne’s counties, Maryland, carry increasing volumes of travelers. Congestion resulting from high regional travel demand by weekday commuter and summer weekend recreation trips is expected to worsen by the planning horizon year of 2040 due to planned growth in population and employment. Additional capacity is needed to address existing congestion, future congestion, and related safety concerns, all resulting from increasing travel volume on the Bay Bridge and approach transportation network.

Figure 1-1: Chesapeake Bay Study Area



1.2.2 Dependable and Reliable Travel Times

The anticipated population increase in communities on both sides of the Chesapeake Bay and associated increase in commuter travel, as well as expected increased tourism and recreational travel, will continue to stress mobility across and around the Bay. Marylanders and visitors need dependable Chesapeake Bay crossing options with reliable operating speeds and travel times that provide access to employment and recreation areas, as well as facilitate emergency services and evacuation events.

1.2.3 Flexibility to Support Maintenance and Incident Management in a Safe Manner

Maintenance and rehabilitation activities will increase and exacerbate congestion as the Bay Bridge ages. Additional capacity is needed to maintain flexible options for safe travel during maintenance and for management of other incidents on the Bay Bridge. Safety of travelers, maintenance workers and incident responders will also be considered during corridor alternative development.

1.2.4 Additional Considerations

Additional capacity across the Chesapeake Bay and/or improvements to existing facilities must be financially viable. In order to assess potential additional Bay crossings, it is necessary to consider the means to pay for the development, operation and maintenance of such facilities.

The Chesapeake Bay is a critical environmental resource in Maryland; therefore, any Bay Crossing improvements must take into account the sensitivity of the Bay, including existing environmental conditions and the potential for any new capacity to adversely impact the Bay and the important natural, recreational, socio-economic and cultural resources it supports.

2.0 ALTERNATIVES CONSIDERED

The alternatives assessed in this technical study include three Corridor Alternatives Retained for Analysis (CARA) and the No-Build Alternative.

MDTA conducted a comprehensive screening of 14 corridors throughout the extent of the Chesapeake Bay in Maryland, along with four Modal and Operational Alternatives (MOA) and the No-Build Alternative. The screening resulted in the identification of three CARA; none of the MOA were carried forward for further Tier 1 Analysis as standalone alternatives.

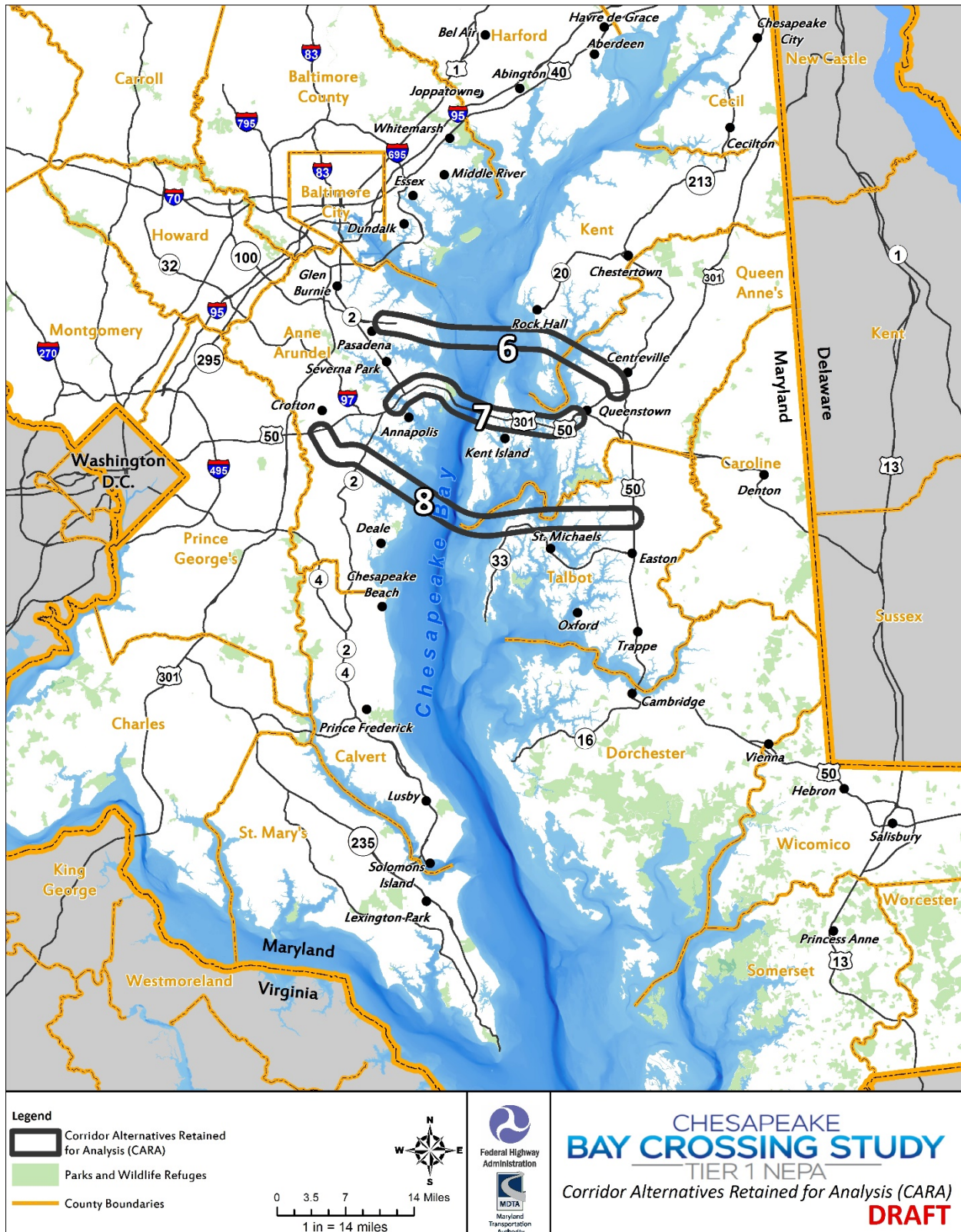
2.1 No-Build Alternative

The No-Build Alternative is included as a baseline for comparison to the corridor alternatives described below. The No-Build Alternative includes all currently planned and programmed infrastructure projects as of Project Scoping in 2017 and regular maintenance at the existing Bay Bridge, located between Anne Arundel County and Queen Anne's County. The No-Build Alternative also includes existing transportation systems management/travel demand management (TSM/TDM) measures including contraflow lanes on the existing bridge, as well as any planned and funded TSM/TDM measures as of Project Scoping in 2017, such as automated contraflow lanes.

2.2 Corridor Alternatives Retained for Analysis

The screening process resulted in the identification of three CARA known as Corridor 6, Corridor 7, and Corridor 8 (**Figure 2-1**). Each CARA is a two-mile wide corridor extending far enough on each shore to connect to existing major roadway infrastructure of 4 lanes or greater. Specific roadway alignments are not identified in this Tier 1 Study; identification of alternative alignments would occur if a Preferred Corridor is selected and carried forward into Tier 2.

Figure 2-1: Corridor Alternatives Retained for Analysis



2.2.1 Corridor 6

From west to east, Corridor 6 begins with a tie-in at MD 100 and follows MD 177, with the crossing located north of Gibson Island. After crossing the Chesapeake Bay, Corridor 6 returns to land on the Eastern Shore north of the Eastern Neck National Wildlife Refuge, roughly perpendicular to MD 445. From there, the corridor turns southeast to cross the Chester River and does not follow existing roadway network until the tie-in with US 301 south of Centreville.

2.2.2 Corridor 7

Corridor 7 follows existing infrastructure along the location of the existing Bay Bridge. From west to east, the corridor begins just west of the US 50/301 crossing of the Severn River. The corridor continues to follow US 50/301 over the Severn River, crossing the Chesapeake Bay and returning to land on Kent Island near Stevensville. The corridor continues to follow US 50/301 over Kent Narrows, ending at the US 50/301 split near Queenstown. While this corridor follows the existing crossing along its centerline, a new crossing and the associated infrastructure could potentially be located anywhere within the two-mile wide corridor.

2.2.3 Corridor 8

From west to east, Corridor 8 begins with a tie-in at US 50/301 at the interchange with MD 424. From there, the corridor roughly follows MD 424 and MD 214. The crossing begins near Mayo on the western shore, passing just south of the southern tip of Kent Island, then curving northeast. The corridor returns to land on the Eastern Shore near MD 33, west of St. Michaels. From there, Corridor 8 crosses the Miles River, and does not follow the existing roadway network until it ties in with MD 50 north of Easton.

3.0 METHODOLOGY

The evaluation of socioeconomic resources is based primarily on identification of resources within the Chesapeake Bay Study Area and within the CARA. Identification of environmental resources was primarily based on a desktop-level assessment of US Census data, Maryland iMap GIS repository, and other available resources. **Section 4.0** includes information on existing conditions throughout the full Chesapeake Bay area in Maryland. This represents the initial study area in which preliminary corridors were evaluated and screened to develop the CARA. **Section 5.0** presents more detailed discussion of socioeconomic resources within each of the CARA. The focus of this analysis is on identifying an inventory of resources and discussing the potential for impacts based on their presence and distribution throughout the corridors. Because the Tier 1 Study identifies general corridors for a potential new Bay crossing and not specific alignments for a proposed crossing, the discussion of impacts is performed at a qualitative level.

3.1 Chesapeake Bay Study Area: Existing Conditions

The socioeconomic resources discussed in **Section 4.0** are evaluated at a county level, with an emphasis on those resources close to the shores of the Chesapeake Bay. Fourteen counties and one city are included in this overview: Anne Arundel County, Baltimore City, Baltimore County, Calvert County, Caroline County, Cecil County, Dorchester County, Harford County, Kent County, Queen Anne's County, Somerset County, St. Mary's County, Talbot County, Wicomico County, and Worcester County. All the Maryland Eastern Shore counties as well as those bordering the Western Shore of the Chesapeake Bay are included.

3.2 Corridor Alternatives: Existing Conditions and Environmental Impacts

A more detailed discussion of existing conditions within the CARA and potential environmental impacts are included in **Section 5.0**. This includes a description of communities and land use, community facilities, population and housing, minority and low-income populations, limited English proficient populations, economics, and transportation facilities within the CARA.

The Socioeconomic Study Area for the BCS has been developed based on US Census Tracts to include the contiguous area extending from the northernmost CARA to the southernmost, including any Census Tracts located between the CARA. The Socioeconomic Study Area provides a demographic point of comparison for the individual CARA. However, the individual CARA are the primary focus of the inventory of resources and analysis of potential impacts. Because of the broad nature of the CARA (each corridor is a two-mile wide band) the impacts are primarily discussed in qualitative terms. The report focuses on the presence and distribution of communities and resources throughout each corridor and the potential for transportation improvements to impact these resources.

4.0 CHESAPEAKE BAY STUDY AREA: EXISTING CONDITIONS

4.1 Communities and Land Use

This section describes the communities and land use located in the full Chesapeake Bay study area counties in Maryland. The Socioeconomic Study Area is shown in **Figure 4-1** and includes five counties and one city on the Western Shore and nine counties on the Eastern Shore.

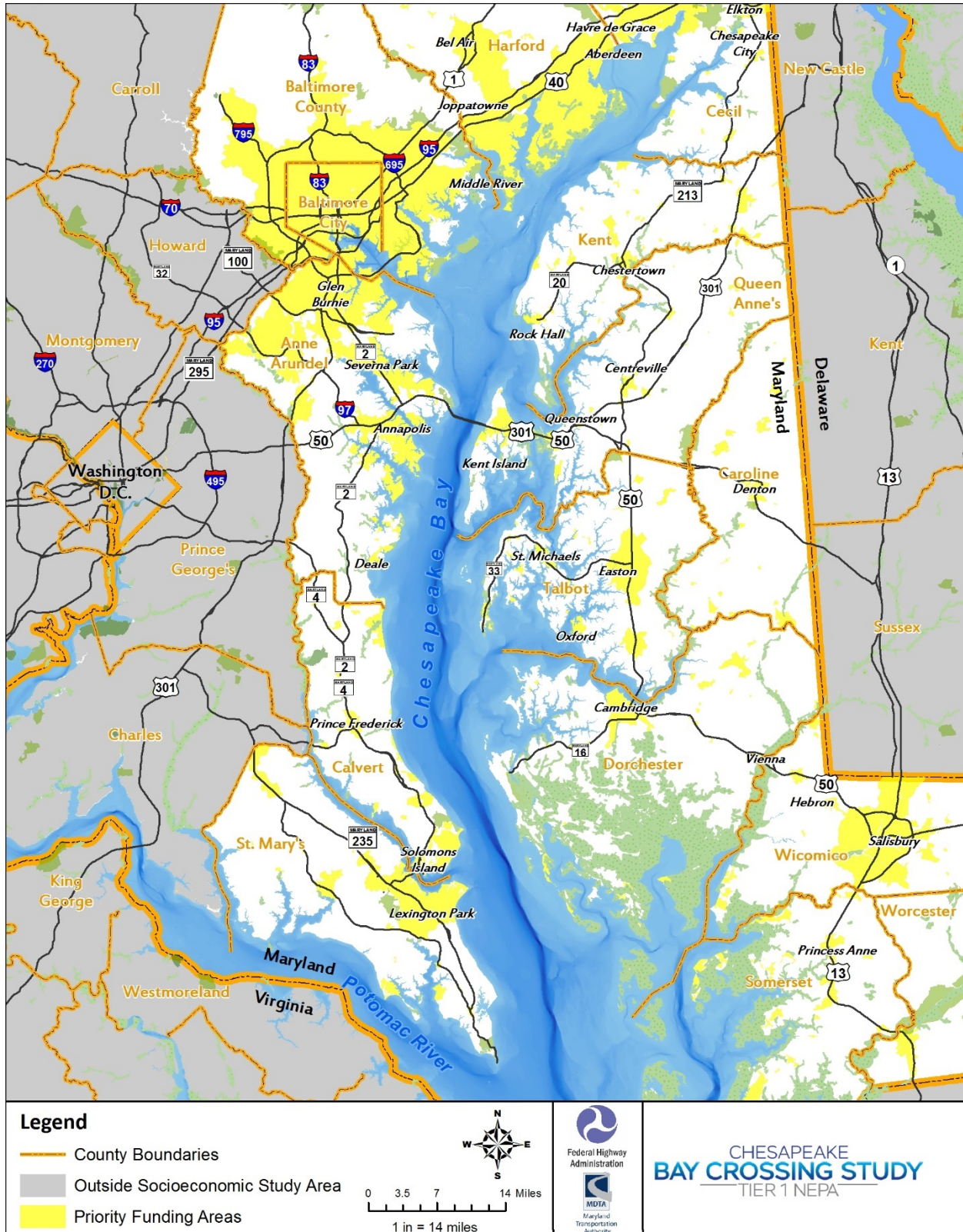
4.1.1 Western Shore

Much of the Western Shore is characterized by populated areas in and around Baltimore, Washington, D.C., and Annapolis. Urban and suburban development radiates outward from the cores of Baltimore City and Washington, D.C., particularly along major roadways such as I-95, US 40 and I-97. The smaller urban center of Annapolis is located south of Baltimore directly adjacent to the Bay. Priority Funding Areas (PFAs), which are locally designated areas where growth and investment are prioritized, are largely located in areas with existing developed land uses and are also shown in **Figure 4-1**. PFAs in the study area are concentrated on the Western Shore, particularly in the vicinity of Baltimore, Washington, D.C., and Annapolis.

All of the included Western Shore counties and Baltimore City are considered by the US Census Bureau as part of the Washington-Baltimore-Arlington Combined Statistical Area (CSA), indicating these areas are part of a broadly connected regional economy. Of the study area counties and Baltimore City on the Western Shore, Harford, Baltimore County, Baltimore City, and Anne Arundel counties are part of the Baltimore-Columbia-Towson Metropolitan Statistical Area (MSA). Calvert County is part of the Washington-Arlington-Alexandria MSA, while St. Mary's County is classified as part of the California-Lexington Park MSA (US Census Bureau, 2017).

The following describes the individual counties and Baltimore City comprising the Western Shore of the study area. Population data presented in the following paragraphs is based on 2016 American Community Survey (ACS) 5-Year estimates (US Census Bureau, 2017).

Figure 4-1: Socioeconomic Study Area



4.1.1.1 Harford County

Harford County has an estimated population of 249,776 or approximately 4.2 percent of the state of Maryland. Developed areas near the Bay such as Havre de Grace, Aberdeen, Riverside, Belcamp, Abingdon, and Edgewood are located primarily along the US 40 corridor, which runs parallel to the Bay and I-95. These historic small towns are interspersed with suburban developments, commercial areas, farmland, and forest. The Aberdeen Proving Ground military facility occupies most of the land between US 40 and the Bay in Harford County.

4.1.1.2 Baltimore County

The population of Baltimore County is estimated at 825,666, or approximately 13.6 percent of the state of Maryland. Portions of Baltimore County near the Bay are highly developed, such as White Marsh, Nottingham, Middle River, Rosedale, Essex, Dundalk, and Edgemere. The development is particularly focused along the I-95, US 40, and I-695 corridors, and near the boundary with Baltimore City. Baltimore County includes substantial medium and high-density development economically tied to the urban core of Baltimore City. Baltimore County also includes major industrial areas next to the Bay such as the Sparrows Point industrial complex.

4.1.1.3 Baltimore City

The population of Baltimore City is estimated at 621,000 or 10.4 percent of the state of Maryland. Baltimore City is a densely developed urban center and important driver of the regional economy. Downtown Baltimore is situated around the Inner Harbor portion of the Patapsco River and is a major center of economic activity and a destination for commuters from many of the study area counties, particularly those in the Baltimore-Columbia-Towson MSA. The southern portion of Baltimore is highly industrialized along both sides of the Patapsco River, including the Port of Baltimore. Dense urban neighborhoods such as Canton, Fells Point, Federal Hill, Cherry Hill, Brooklyn, Fairfield, and Curtis Bay line the shores of the Patapsco.

4.1.1.4 Anne Arundel County

Anne Arundel County has an estimated population of 559,737, or roughly 9.4 percent of the state of Maryland. The northern half of Anne Arundel County is highly developed, with the southern suburbs of Baltimore extending along I-97 and MD 2 to Annapolis. Communities such as Glen Burnie, Pasadena, Severna Park, Millersville, Crownsville, Riviera Beach, and Lake Shore are located between Baltimore and Annapolis in Anne Arundel County. US 50 runs east-west through this area, connecting to the existing Bay Bridge. The area is characterized by low to medium-density residential development, with commercial areas along major roadways.

Annapolis, the capital of Maryland, is a historic waterfront city with medium to high-density residential and commercial areas. Downtown Annapolis is located directly adjacent to the Bay, at the mouth of the Severn River. Annapolis is also home to the Annapolis Harbor, the United States Naval Academy, and the Maryland State House. Other developed areas are located near Annapolis outside of the City limits such as Edgewater, Lodontowne, and Highland Beach.

The portion of Anne Arundel County south of Annapolis is much more sparsely developed, characterized primarily by farmland, forest, and low-density residential areas. Smaller waterfront towns, often situated

around beaches and marinas, are located along the Bay such as Mayo, Beverly Beach, Galesville, Shady Side, and Deale.

4.1.1.5 Calvert County

Calvert County is the least populous of the Western Shore counties. Its total population is estimated at 90,527, or approximately 1.5 percent of the population of Maryland. Forested land interspersed with farms and low-density residential development characterize much of the county. Small inland towns such as Dunkirk, Huntingtown, and Prince Frederick are located along the main north-south MD 2/MD 4 corridor. Waterfront towns such as North Beach, Chesapeake Beach and Cove Point are also located in Calvert County. A notable concentration of low to medium density residential development is located at the far southern end of the county across the Patuxent River from the Naval Air Station Patuxent River in St. Mary's County.

4.1.1.6 St. Mary's County

St. Mary's County has an estimated population of 110,675 or roughly 1.9 percent of the population of Maryland. The northern portion of the county is largely a mixture of forested land, farmland, and low-density residential development. Small towns and dispersed commercial uses line the MD 235 corridor such as Mechanicsville and Oakville. Other communities are located further west along MD 234 and MD 5 such as Chaptico, Loveville, and Leonardtown. Much of the development in St. Mary's County is concentrated around the Naval Air Station Patuxent River such as California and Lexington Park. Commercial development lines the main arteries of MD 235 and MD 246, with low to medium density residential development surrounding and extending to the southern end of the county.

4.1.2 Eastern Shore

The Eastern Shore of the Bay is generally more rural compared to the Western Shore. The Eastern Shore counties consist largely of agricultural land, forests, wetlands, small towns and low-density residential areas. Priority Funding Areas (PFAs), which are locally designated areas where growth and investment are prioritized, are largely located in areas with existing developed land uses. As shown in **Figure 4-1**, PFAs in the study area are more sparsely distributed on the Eastern Shore compared to the Western Shore, with portions surrounding town centers such as Chestertown, Centreville, Queenstown, Easton, and Cambridge.

Queen Anne's, Talbot, and Dorchester counties are considered part of the Washington-Baltimore-Arlington CSA. This indicates that they are socially and economically linked to Baltimore and Washington, D.C. Cecil, Kent, Caroline, Wicomico, Somerset, and Worcester counties are the only study area counties that are not included in the Washington-Baltimore-Arlington CSA. Cecil County is within the Philadelphia-Reading-Camden CSA, indicating economic linkage to the populous areas to the north along the I-95 corridor (US Census Bureau, 2017).

Talbot County is classified as the Easton Micropolitan Statistical Area, and Dorchester County is classified as the Cambridge Micropolitan Statistical Area. Wicomico, Somerset and Worcester Counties are included in the Salisbury MSA. Kent and Caroline Counties are not classified as part of any Metropolitan or Micropolitan Statistical Area. This indicates that Kent and Caroline counties are less socially and economically linked to populated areas on either side of the Bay, reflective of their highly rural character.

4.1.2.1 Cecil County

Cecil County is located along the northernmost reaches of the Bay. Its estimated total population is 102,175 or about 1.7 percent of the population of Maryland. Developed areas near the Bay are primarily historic small towns with low to moderate density located along the US 40 corridor such as Perryville, North East, and Elkton. Industrial and commercial land uses are located along the US 40 and I-95 corridors, mostly surrounded by forest and low-density residential subdivisions. Small waterfront towns and low-density residential communities are spread out along the shores of the North East and Elk Rivers, such as Charlestown, White Hall, Arundel, and Elkmore. Much of the area between the North East and Elk Rivers is forested land in the Elk Neck State Forest and Elk Neck State Park (SP). South of the Chesapeake and Delaware Canal, land use within Cecil County becomes predominantly agricultural, with a few small towns such as Cecilton.

4.1.2.2 Kent County

Kent County is a predominantly rural, agricultural county. It is the least populous county in the study area, with an estimated 19,819 residents, or approximately 0.3 percent of the population of Maryland. Land in Kent County is primarily in agricultural use, with small towns interspersed between farm fields and patches of forest. Low-density residential developments are scattered throughout, particularly in the western portion near the Bay. Developed areas include Chestertown, Rock Hall, Worton, Betterton, Millington, and other small agricultural communities. Rock Hall is a waterfront town on the Bay situated around a marina. Chestertown's historic town center is located inland along the Chester River.

4.1.2.3 Queen Anne's County

Queen Anne's County has an estimated population of 48,712, or 0.8 percent of the population of Maryland. Much of the county is rural and predominantly in agricultural use, with development primarily centered around the US 50/301 corridor. Low to medium density residential development covers much of Kent Island, with commercial uses concentrated along the US 50/301 roadway. Similar development characterizes areas next to the Bay near Grasonville and Queenstown. Low-density residential areas extend along the waterfront areas on the Wye River and Prospect Bay. East of the Wye River is primarily agricultural land with some low-density residential developments interspersed. There are also low-density residential areas surrounding Centreville, with medium-density residential uses and commercial uses near the town center.

4.1.2.4 Caroline County

Caroline County has a population of approximately 32,653 or 0.5 percent of the population of Maryland. It is a heavily agricultural county, with farmland as its predominant land use. The central portion of Caroline County, near the Choptank River, is home to several communities such as Denton, Ridgely, Greensboro and Goldsboro. These communities include town centers with commercial and medium-density residential uses, surrounded by low-density residential areas and farms. Much of this development is located along the Choptank River.

4.1.2.5 Talbot County

Talbot County has an estimated population of 37,668 or approximately 0.6 percent of the population of Maryland. It is primarily characterized by farmland interspersed with patches of forest, and a few main centers of development located in Easton and St. Michaels. Easton's historic town center is one of the largest developed areas on the Eastern Shore. St. Michaels is located along the Miles River, with

commercial and low to medium-density residential uses surrounded by waterfront communities spread along MD 33 and MD 579.

4.1.2.6 *Dorchester County*

Dorchester County has an estimated population of 32,451, which is approximately 0.5 percent of the state of Maryland. Cambridge is one of the most populous areas on the Eastern Shore, located on the southern bank of the Choptank River. Low-density residential development is spread along much of the Choptank River north of Cambridge. South of Cambridge the county is largely undeveloped wetlands, much of which is included in the Blackwater National Wildlife Refuge and other protected lands.

4.1.2.7 *Wicomico County*

Wicomico County has an estimated population of 101,527, or about 1.7 percent of the population of Maryland. Much of the development in Wicomico County is centered around Salisbury, the most populous incorporated municipality on the Eastern Shore. Salisbury's town center includes commercial and medium to high-density residential development, located in the central portion of the county along the Wicomico River. Lower density development is spread along the outskirts of the town. Small towns extend along the US 50 Corridor such as Pittsville and Willards. The far western extent of the county, along the shore of the Bay, includes lower density residential areas such as Nanticoke, located near the mouth of the Nanticoke River.

4.1.2.8 *Somerset County*

Somerset County's estimated population is 25,899, or roughly 0.4 percent of the population of Maryland. Somerset is a sparsely populated county, with large forested and wetland areas. Princess Anne is located in the central portion of the county on the Manokin River, oriented along the US 13 corridor. Crisfield is a waterfront town center with low to medium-density development, located at the far southern end of the County. Other waterfront communities are located along the Bay in Somerset County such as Deal Island. Small towns such as Westover and Marion Station are also located near the Bay.

4.1.2.9 *Worcester County*

Worcester County is home to approximately 51,441 residents, or 0.9 percent of Maryland's population. Ocean City is a major tourist destination located on Fenwick Island, with dense commercial development along the beachfront resort area. Adjacent communities are located to the west of Ocean City such as Ocean Pines and Berlin. The southern portion of Worcester County is largely rural, with large forested areas and farmland. Town centers such as Snow Hill and Pocomoke City are located along the Pocomoke River.

4.2 Community Facilities

This section discusses facilities within the study area counties and city including parks and recreational facilities, transportation facilities, educational facilities, and hospitals and emergency services.

4.2.1 Parks and Recreational Facilities

Numerous park facilities are located throughout the study area, ranging from small local parks to large protected forest areas. Many different kinds of recreational facilities such as beaches, boat launches, hiking trails, campgrounds, fishing areas, wildlife viewing areas, and historic sites are located within the study area. Some preserved areas such as wilderness or wildlife conservation areas are also accessible as recreational facilities. Protected lands in the study area include classifications such as Natural

Environmental Areas, National Parks, Natural Resource Management Areas (NRMA), National Seashores, National Wildlife Refuge (NWR), State Forests, State Parks (SP), and Wildlife Management Areas (WMA), as well as municipal and local parks (Maryland iMap Geographic Information System (GIS) Catalog, 2018) (Maryland Department of Natural Resources (MDNR), 2018). The parks and recreational facilities described below for the Western Shore and Eastern Shore are shown in **Figure 4-2**. The following sections do not represent a comprehensive review of all facilities on the Western Shore and Eastern Shore; rather, a high-level review of facilities reasonably close to the Bay within the Socioeconomic Study Area is presented.

4.2.1.1 Western Shore Jurisdictions

Harford County is the northern-most of the Western Shore counties and is home to Susquehanna SP. Susquehanna SP is a 2,700-acre park located along the Susquehanna River Valley in Harford County (MDNR 2016), with the southeastern boundary located in the study area. Also, in Harford County, there are several smaller areas located near the Bay south of I-95 such as Bush Declaration NRMA, and the Chesapeake Bay National Estuarine Research Reserve.

The Hammerman Area, part of the larger 18,000-acre Gunpowder Falls SP, is located along the mouth of the Gunpowder River adjacent to the Bay. Other portions of Gunpowder Falls SP are located upstream along the Gunpowder River. On the southeastern edge of Baltimore County lies Hart-Miller Island SP, Rocky Point Park, and North Point SP. Hart-Miller Island SP, located on the mouth of the Middle River on the Eastern Side of Baltimore County, is a 1,100-acre island only accessible by boat. West of Hart-Miller Island is the 375-acre Rocky Point Park in Essex, Baltimore County. North Point SP in Edgemere, Baltimore County is a 1,310-acre park. At the far southern end of Baltimore County, the Patapsco Valley SP is located along the banks of the Patapsco River, straddling the boundary between Baltimore and Anne Arundel County. Patapsco Valley SP is over 16,000 acres and is one of Maryland's most popular SPs.

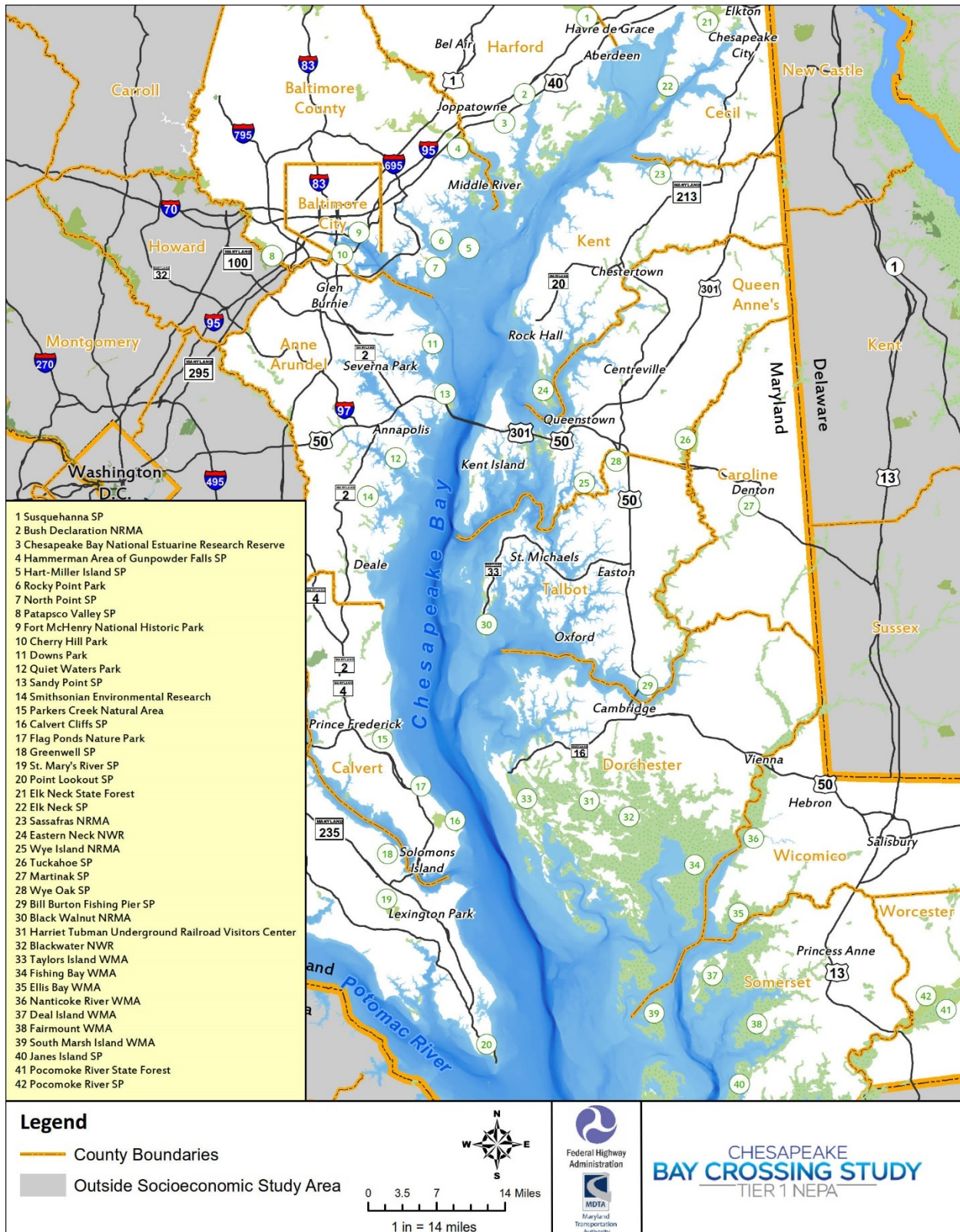
A number of small local parks are located near the Patapsco River in Baltimore City. Fort McHenry National Historical Park is located east of the Baltimore Inner Harbor along the Patapsco River. Cherry Hill Park is located along the Patapsco River, adjacent to the easternmost extent of the Patapsco Valley SP.

Several parks and preserved areas open to the public are located on or near the Bay in Anne Arundel County such as Downs Park, Quiet Waters Park, Sandy Point SP, and Smithsonian Environmental Research.

Parkers Creek Natural Area (Parkers Creek WMA and American Chestnut Land Trust) in Calvert County is a large wetland and forested area protected by multiple preservation programs and private property owners. Covering approximately 3,000 acres of land, this area is one of the largest contiguous tracts of forest in Calvert County. Also located in Calvert County is Calvert Cliffs SP, a 1,300-acre park. The Flag Ponds Nature Park, part of the Calvert County parks system, is a 500-acre waterfront park along the Chesapeake Bay.

Greenwell SP (596 acres) located along the Patuxent River, and St. Mary's River SP (2,600 acres), are both established SPs in St. Mary's County. Point Lookout SP, located at the southern tip of the study area in St. Mary's County is about 1,000 acres in size (MDNR, 2018).

Figure 4-2: Parks and Recreational Facilities in Socioeconomic Study Area



4.2.1.2 Eastern Shore Jurisdictions

Elk Neck State Forest (3,500 acres) and Elk Neck SP (2,100 acres) are both located near the northern end of the study area in Cecil County. Kent County is home to Sassafras NRMA. At the far southern tip of Kent County is Eastern Neck NWR, a 2,200-acre island.

The 2,500-acre Wye Island NRMA is located southeast of the Bay Bridge in Queen Anne's County. On the eastern edge of Queen Anne's County is the 4,000-acre Tuckahoe SP, located along the boundary with Caroline County. Caroline County has one SP in addition to Tuckahoe, the 105-acre Martinak SP. Talbot County has Wye Oak SP (29 acres) and Bill Burton Fishing Pier SP, as well as the Black Walnut NRMA of 58 acres. Other small community and waterfront parks are located throughout Talbot County.

Dorchester County contains a large concentration of parks and preservation areas. The Harriet Tubman Underground Railroad Visitors Center is a 17-acre park classified as both a SP and a National Historic Park. Just south of the Harriet Tubman Underground Railroad Visitors Center is Blackwater NWR. Established in 1933, Blackwater NWR is nearly 30,000 acres. Taylors Island WMA, east of Blackwater NWR, is 1,100 acres adjacent to the Bay. Fishing Bay WMA, south of Blackwater NWR, is 29,000 acres of land and marshes surrounding the Fishing Bay waterfront.

In Wicomico County, Ellis Bay WMA is a 3,200-acre wetland area on the Wicomico River. Wicomico County is also home to a majority of the Nanticoke River WMA at 1,785 acres, with the remaining 470 acres in Dorchester County. Somerset County has four WMAs on its eastern edge bordering the Chesapeake Bay. Deal Island WMA (13,000 acres) and Fairmount WMA (4,000 acres) have hiking trails as well as boat ramps. South Marsh Island WMA is a 3,000-acre island entirely comprised of marshes. Janes Island SP is made up of 2,900 acres of island and wetlands.

Pocomoke River State Forest is located in Worcester, Wicomico and Somerset counties. It totals 17,676 acres, and has hiking trails, hunting, fishing, disabled hunter access, and boat ramps. The Pocomoke River SP is located near the State Forest in Worcester County.

Chesapeake Forest Lands, consisting of over 73,000 acres managed by the MDNR, are various forested tracts located in Worcester, Somerset, Wicomico, Dorchester, and Caroline counties (MDNR, 2018). These forested tracts are not individually labeled on **Figure 4-2**.

4.2.2 Transportation

This section discusses transportation facilities serving communities in the study area counties and city, including roads, rail lines, airports, and bus and rail transit, particularly those facilities located adjacent to the Bay.

4.2.2.1 Western Shore Jurisdictions

US 50/301 across the existing Bay Bridge serves as the primary connection between the Eastern and Western Shores in Maryland. The Bay Bridge is a key piece of regional transportation infrastructure that provides social and economic connection as the only crossing of the Chesapeake Bay in Maryland.

Major north-south corridors routed along the northern portion of the Western Shore include US 40 and I-95. Interstate highway facilities located in and around Baltimore City and Baltimore County include I-695, I-83, I-70, I-895 and I-195. The I-97 corridor serves as the primary north-south connection between

Baltimore and Annapolis. Other major roadways include MD 100, MD 235, MD 214, and MD 260. MD 2 and MD 4 serve as main north-south routes through the southern portions of the Western Shore.

More detailed information on the roadways and traffic patterns in the Chesapeake Bay Study Area is included in the **BCS Traffic Analysis Technical Report**.

All of the Western Shore counties and city have a bus system supported by each individual county and city. Maryland Transit Authority (MTA) has bus lines present through all the Western Shore counties and city, with a large number of lines surrounding Washington, D.C. and Baltimore. These lines include Express BusLink Routes, LocalLink Routes, CityLink Routes, Commuter Bus Routes, and Intercity Bus – MD Travel Link.

The MTA Express BusLink, LocalLink, and CityLink lines service Baltimore City and surrounding areas, with a few lines extending down into Anne Arundel County. The Commuter Bus routes connect Baltimore and Washington, D.C., with lines extending from D.C. into St. Mary's, Calvert, and Anne Arundel counties. These lines continue into Baltimore City and connect to multiple locations in Harford County. This line extends from Anne Arundel County to the eastern shore, but only to Queen Anne's County east of the Bay Bridge. The Intercity Bus - MD Travel Link lines - extend from Baltimore City north into Baltimore and Harford counties, as well as south into Anne Arundel County. These lines continue north and east into the Eastern Shore counties.

The Washington Metropolitan Area Transportation Authority (WMATA) has bus routes servicing D.C. and the surrounding Maryland counties. One WMATA bus route extends to the Baltimore/Washington International (BWI) Thurgood Marshall Airport in Anne Arundel County.

More detailed discussion of the existing bus routes crossing the Chesapeake Bay is included in the **BCS Alternatives Concurrence Report – Appendix B: Modal and Operational Alternative Transit Service Evaluation**.

The Baltimore Metro and MTA Central Light Rail serve Baltimore City and County. Both lines go into the City and extend out into Baltimore County. The light rail line also extends to the BWI Airport.

The Maryland Area Regional Commuter (MARC) service has three lines in Maryland, two of which (the Camden and Penn lines) service the northern area of the Western Shore counties and Baltimore City.

The Amtrak Northeast Corridor travels through the Western Shore counties with stops in Anne Arundel County, Baltimore City, and Harford County.

A total of 13 airports with at least one paved runway are located in the Western Shore counties. Baltimore/Washington International (BWI) Thurgood Marshall Airport in Anne Arundel County is a major regional transportation facility. Other notable airport facilities include Phillips Army Airfield (AAF) at Aberdeen Proving Grounds in Harford County, Martin State Airport in Middle River, and Patuxent River Naval Air Station in St. Mary's County.

4.2.2.2 Eastern Shore Jurisdictions

US 50/301 is the primary connection to the Western Shore across the Chesapeake Bay. US 50 and US 301 split in Queen Anne's County. US 301 travels north serving as a main north-south artery through Queen Anne's and Kent County, providing a connection to US 40 in New Castle County, Delaware. US 301 travels south through Talbot County, bridging the Choptank River into Dorchester County. US 50 then travels east

through Salisbury and connects to US 113 near Ocean City in Worcester County. US 50 serves as a primary route for recreational travelers driving to tourist destinations along the Atlantic coast in Maryland and Delaware. Other major roadways include US 13 and MD 213.

One MTA Commuter bus route travels to the Eastern Shore, with its terminus in Queen Anne's County east of the Bay Bridge. The MTA Intercity Bus - MD Travel Link travels north from Harford County into Cecil County, as well as from Anne Arundel County into Queen Anne's and then follows US 50 all the way to Ocean City in Worcester County. Somerset, Caroline, and Kent counties are not served by MTA bus routes.

The MARC Penn Line includes a stop in Cecil County, at the Perryville MARC Station just east of the Susquehanna River.

Eight airports with at least one paved runway, of which two have control towers, were identified on the Eastern Shore. The two airports with control towers are the Easton/Newman Field Airport in Easton, Talbot County and Salisbury-Ocean City-Wicomico Regional Airport in Salisbury, in Wicomico County. The remaining six airports with runways are split between six counties: Cecil, Caroline, Queen Anne's, Dorchester, Somerset, and Worcester.

4.2.3 Education

This section includes information on educational facilities (public/private colleges and K-12 public schools) in the study area counties and city. Educational facilities are described based on Maryland iMap GIS Data (Maryland iMap GIS Catalog, 2018).

4.2.3.1 Western Shore

Public four-year colleges and universities on the Western Shore include two in Baltimore County, four in Baltimore City, one in Anne Arundel county, and one in St. Mary's County. Towson University and the University of Maryland - Baltimore County are the two public four-year colleges located in Baltimore County. The United States Naval Academy in Anne Arundel County is located at the mouth of the Severn River, near the existing Bay Bridge. Each of the Western Shore counties and city has at least one public two-year community college, with three campuses located in Baltimore County.

Private four-year and two-year colleges are also located throughout the Western Shore counties and city. Thirteen private four-year colleges in the study area include: four in Baltimore County, eight in Baltimore City, and one in Anne Arundel County. Baltimore County, Baltimore City, and St. Mary's County each have one private two-year college.

A total of 548 public schools for kindergarten through high school students can be found in the Western Shore counties and Baltimore City. This total includes 53 in Harford, 163 in Baltimore, 159 in Baltimore City, 120 in Anne Arundel, 26 in Calvert, and 27 in St. Mary's counties. Numerous K-12 schools are located in close proximity to the Bay, with a particularly high concentration around Annapolis.

4.2.3.2 Eastern Shore

The Eastern Shore counties contain two public four-year colleges, three public two-year colleges, and 129 public schools from kindergarten through high school. The public four-year colleges include Salisbury University in Wicomico County and University of Maryland – Eastern Shore in Somerset County.

The following number of public K-12 schools are in Eastern Shore counties: Cecil has 29, Kent has five, Queen Anne's has 14, Caroline has 10, Talbot has nine, Dorchester has 14, Wicomico has 24, Somerset has 10, and Worcester has 14.

4.2.4 Hospitals and Emergency Services

4.2.4.1 *Western Shore*

All counties and Baltimore City on the Western Shore study area have at least one hospital facility, with a total of 28 such facilities. Two hospitals are classified as acute, general, and special in Harford County; 12 in Baltimore City; five in Baltimore County; two in Anne Arundel County; one in Calvert County; and one in St. Mary's County. In Baltimore City, two additional facilities are classified as children's hospitals. Two facilities in Baltimore County are also classified as psychiatric hospitals. Hospitals and emergency services are described based on Maryland iMap GIS data (Maryland iMap GIS Catalog, 2018).

The number of police and fire emergency services facilities in the Western Shore study area are provided by county below based on data on county/city websites:

- Harford County: six police facilities and 23 fire stations
- Baltimore City: 17 police facilities and 27 fire stations
- Baltimore County: 10 police facilities and 53 fire stations
- Anne Arundel County: 17 police facilities and 39 fire stations
- Calvert County: two police facilities and eight fire stations
- St. Mary's County: two police facilities and 15 fire stations

4.2.4.2 *Eastern Shore*

Every county in the Eastern Shore study area except for Queen Anne's and Caroline County has a hospital facility. Cecil, Kent, Talbot, Dorchester, Wicomico, Somerset, and Worcester counties each have one hospital classified as acute, general, and special hospital facilities. Dorchester County also has two additional hospitals classified as psychiatric hospitals and Wicomico County has two additional hospitals including a rehabilitation and a geriatric care hospital.

The number of police and fire emergency service facilities are provided by county below:

- Cecil County: eight police facilities and 17 fire stations
- Kent County: three police facilities and seven fire stations
- Queen Anne's County: four police facilities and nine fire stations
- Caroline County: five police facilities and eight fire stations
- Talbot County: five police facilities and six fire stations
- Dorchester County: three police facilities and 18 fire stations
- Wicomico County: seven police facilities and 15 fire stations
- Somerset County: five police facilities and 10 fire stations
- Worcester County: seven police facilities and 17 fire stations

4.3 Population and Housing Characteristics

Population and housing information is identified and evaluated based on the 2013-2017 ACS 5-year data at the county level (US Census Bureau, 2018).

4.3.1 **Population and Housing**

Table 4-1 compares the 2017 population and population change statewide since 2010, in the study area counties and Baltimore City, and collectively as the Eastern and Western Shore study areas. The overall

estimated population in Maryland increased five percent (278,370) from April 1, 2010 to July 1, 2017 (US Census Bureau, 2018).

Altogether, the counties and Baltimore City in the study area comprise nearly 48 percent (2,928,569) of the estimated 2017 resident population of Maryland, with approximately 41 percent (2,473,680) residing in the Western Shore counties and Baltimore City and the remaining approximately 8 percent (454,889) on the Eastern Shore. In terms of total population, Baltimore County had the largest population (832,468) in 2017 and Kent County the least (19,384).

Table 4-1: Resident Population and Population Change by County

Geography	Total Population 2017	Percent of State Population	Estimated Cumulative Total Population Change (April 1, 2010 - July 1, 2017)	Percent Change in Total Population 2010-2017
Anne Arundel County	573,235	9%	35,605	7%
Baltimore City	611,648	10%	-9,303	-2%
Baltimore County	832,468	14%	27,318	3%
Calvert County	91,502	2%	2,766	3%
Caroline County	33,193	1%	112	<1%
Cecil County	102,746	2%	1,638	2%
Dorchester County	32,162	1%	-456	-1%
Harford County	252,160	4%	7,338	3%
Kent County	19,384	0%	-807	-4%
Queen Anne's County	49,770	1%	1,982	4%
Somerset County	25,918	0%	-552	-2%
St. Mary's County	112,667	2%	7,519	7%
Talbot County	37,103	1%	-679	-2%
Wicomico County	102,923	2%	4,190	4%
Worcester County	51,690	1%	239	1%
Western Shore Study Area Counties and City	2,473,680	41%	71,243	3%
Eastern Shore Study Area Counties	454,889	8%	5,667	1%
Study Area Counties and City Total	2,928,569	48%	76,910	3%
Maryland	6,052,177	100%	278,370	5%

Source: ACS 5-Year Estimates 2013 – 2017; US Census Bureau

Table 4-2 shows the housing characteristics for the study area counties, Baltimore City and Maryland. The top three counties with the highest rate of occupied housing units are Harford (94 percent), Anne Arundel (93 percent), and Baltimore County (93 percent). The highest rates of owner-occupied homes are found in Calvert (83 percent), Queen Anne's (81 percent), and Harford (79 percent) counties, while the highest rates of renter occupancies are in Baltimore City (53 percent), Wicomico County (39 percent), and Somerset County (35 percent). The study area rates of home ownership and occupancy, in total, are

comparable to statewide rates. The Eastern Shore Study Area counties, however, have notably lower occupancy rate (73 percent) compared to the State of Maryland.

Table 4-2: Housing Characteristics

Geographic Area	Total Housing Units	Total Occupied Housing Units		Owner-Occupied	Renter-Occupied
		Units	Percent Total Housing Units	Percent Occupied Housing Units	Percent Occupied Housing Units
Anne Arundel County	220,641	205,395	93%	74%	26%
Baltimore City	294,858	239,791	81%	47%	53%
Baltimore County	336,358	312,859	93%	66%	34%
Calvert County	34,785	31,462	90%	83%	17%
Caroline County	13,564	11,996	88%	71%	29%
Cecil County	42,487	37,076	87%	73%	27%
Dorchester County	16,734	12,940	77%	66%	34%
Harford County	98,853	92,895	94%	79%	21%
Kent County	10,662	7,605	71%	70%	30%
Queen Anne's County	20,885	17,995	86%	81%	19%
Somerset County	11,334	8,362	74%	65%	35%
St. Mary's County	43,834	39,276	90%	72%	28%
Talbot County	20,152	16,498	82%	70%	30%
Wicomico County	42,146	37,415	89%	61%	39%
Worcester County	56,031	21,190	38%	74%	26%
Western Shore Study Area Counties and City	1,029,329	921,678	90%	65%	35%
Eastern Shore Study Area Counties	233,995	171,077	73%	70%	30%
Study Area Counties and City Total	1,263,324	1,092,755	86%	66%	34%
Maryland	2,427,014	2,181,093	90%	67%	33%

Source: ACS 5-Year Estimates 2013 – 2017; US Census Bureau

4.4 Minority and Low-Income Populations

US Census ACS 5-year data (2013-2017) was collected for race and Hispanic/Latino ethnicity, which is evaluated separately from race by the US Census Bureau. The percentage of the population identifying as minority race and/or ethnicity was calculated for the counties and Baltimore City in the study area and for the State of Maryland (**Table 4-3**). Baltimore City (70 percent), and Somerset County (47 percent) have a total minority population percentage greater than that of the State of Maryland (43 percent).

Table 4-3: Race and Ethnicity

Geographic Area	Total Population	Total Minority Race	Hispanic or Latino
Anne Arundel County	564,600	26%	7%
Baltimore City	619,796	70%	5%
Baltimore County	828,637	38%	5%
Calvert County	90,824	19%	4%
Caroline County	32,785	20%	7%
Cecil County	102,416	12%	4%
Dorchester County	32,386	34%	5%
Harford County	250,132	21%	4%
Kent County	19,666	18%	4%
Queen Anne's County	49,071	11%	4%
Somerset County	25,801	47%	4%
St. Mary's County	110,979	21%	5%
Talbot County	37,461	17%	6%
Wicomico County	102,014	32%	5%
Worcester County	51,559	17%	3%
Western Shore Study Area Counties and City	2,464,968	40%	5%
Eastern Shore Study Area Counties	453,159	22%	5%
Study Area Counties and City Total	2,918,127	37%	5%
Maryland	5,996,079	43%	10%

Source: ACS 5-Year Estimates 2013 – 2017; US Census Bureau

Note: Populations identifying as Hispanic or Latino ethnicity are estimated separately from race. All values rounded to closest whole number.

US Census ACS 5-year data (2013-2017) was collected for population below the poverty level. **Table 4-4** presents this data for the counties and Baltimore City in the study area and for the State of Maryland. Baltimore City (22 percent), Caroline County (17 percent), Dorchester County (15 percent), Kent County (13 percent), Somerset County (23 percent), and Wicomico County (16 percent) have a higher percentage of population below the poverty level than the State of Maryland (10 percent). Baltimore City and Somerset County have notably higher percentages compared to the others. Anne Arundel, Calvert, and Queen Anne's Counties have the lowest proportion of population below the poverty level, at 6 percent each.

Table 4-4: Low-Income Populations

Geographic Area	Total Population for whom Poverty Status is Determined	Percent Below Poverty Level
Anne Arundel County	548,112	6%
Baltimore City	596,590	22%
Baltimore County	807,987	9%
Calvert County	89,882	6%
Caroline County	32,299	17%
Cecil County	101,096	9%
Dorchester County	31,927	15%
Harford County	247,931	8%
Kent County	18,071	13%
Queen Anne's County	48,544	6%
Somerset County	19,680	23%
St. Mary's County	107,806	8%
Talbot County	37,049	10%
Wicomico County	98,209	16%
Worcester County	50,831	10%
Western Shore Study Area Counties and City	2,398,308	11%
Eastern Shore Study Area Counties	437,706	12%
Study Area Counties and City Total	2,836,014	12%
Maryland	5,856,088	10%

Source: ACS 5-Year Estimates 2013 – 2017; US Census Bureau

4.5 Employment Status and Income

Information on employment, labor force, and income are presented in this section based on 2017 US Census Bureau ACS 5-Year estimates. As defined by the U.S. Census Bureau, the labor force includes all persons 16 years of age and older who are in the civilian labor force (the employed and those unemployed who are actively seeking employment) and the armed forces. The labor force participation rate is the percentage of the total population aged 16 or older within the labor force. The unemployment rate is the percentage of the labor force unemployed.

Table 4-5 presents the labor force characteristics for the study area counties and Baltimore City compared to statewide. The Census estimates show that Baltimore City and Somerset County have notably higher unemployment rates (10 percent each) compared to the State and most of the counties in the study area. Somerset County also has a particularly low labor force participation rate at 44 percent.

Table 4-6 displays the median household income for each of the counties and Baltimore City in the study area and the state of Maryland. The median household income for the state of Maryland is \$78,916. Of the study area counties and Baltimore City, only Anne Arundel, Calvert, Harford, Queen Anne's, and St. Mary's have a higher median household income than statewide.

Table 4-5: Employment Status

Geography	Total Population 16 Years or Older	Labor Force Participation Rate	Unemployment Rate
Anne Arundel County	451,557	71%	5%
Baltimore City	502,594	62%	10%
Baltimore County	670,033	67%	6%
Calvert County	71,843	70%	7%
Caroline County	25,875	65%	7%
Cecil County	81,142	66%	6%
Dorchester County	26,313	63%	8%
Harford County	200,369	69%	5%
Kent County	16,794	57%	5%
Queen Anne's	39,552	68%	4%
Somerset County	21,979	44%	10%
St. Mary's	86,676	67%	4%
Talbot County	31,332	60%	4%
Wicomico County	82,053	66%	8%
Worcester County	43,529	59%	7%
Maryland	4,800,851	68%	6%

Source: ACS 5-Year Estimates 2013 – 2017; US Census Bureau

Table 4-6: Median Household Income

Geographic Area	Median Household Income
Anne Arundel County	\$94,502
Baltimore City	\$46,641
Baltimore County	\$71,810
Calvert County	\$100,350
Caroline County	\$52,469
Cecil County	\$70,516
Dorchester County	\$50,532
Harford County	\$83,445
Kent County	\$56,638
Queen Anne's County	\$89,241
Somerset County	\$39,239
St. Mary's County	\$86,508
Talbot County	\$65,595
Wicomico County	\$54,493
Worcester County	\$59,458
Maryland	\$78,916

Source: ACS 5-Year Estimates 2013 – 2017; US Census Bureau

5.0 CORRIDOR ALTERNATIVES: EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

5.1 Communities and Land Use

This section includes consideration of existing conditions within each CARA and a qualitative discussion of how local land uses and community facilities could be directly affected by a new Chesapeake Bay crossing. The assessment also considers the presence and distribution of designated Priority Funding Areas (PFAs) where growth and investment are prioritized. Factors that could inhibit community cohesion are identified and described.

The assessment uses the Maryland iMap Statewide Land Use and Land Cover data from the Maryland Department of Planning (MDP). Maps of land use within the CARA are included to visualize existing land use conditions.

Avoidance and mitigation strategies are not considered in this broad level Tier 1 analysis, as specific impacts will not be known until Tier 2 and a specific crossing option is identified. If a corridor alternative is carried forward for further evaluation in Tier 2, multiple alignments would be considered within the corridor based on a variety of engineering, environmental and land use factors. Avoidance and mitigation strategies would be assessed based on the potential impacts identified in Tier 2. While no resources are anticipated to be directly impacted by a No-Build Alternative for this study, the No-Build Alternative does include currently planned and programmed infrastructure projects as of Project Scoping in 2017 and would be updated during Tier 2 to reflect newly planned and programmed projects that may affect the study area. Moreover, under the No-Build Alternative motor vehicle volumes are forecasted to increase over time and with them are anticipated increases in travel times and delays related to growing traffic congestion. These qualitative increases would be expected to have potential negative effects on motor vehicle-reliant activities, such as emergency response services, supply chain/commercial trucking and deliveries, school bus schedules, and workforce commuters.

5.1.1 **Community Facilities**

This assessment includes identification of the location and type of community facilities present within the CARA. The community facilities evaluated include: public parks and recreational facilities, schools, fire and rescue services, hospitals, police facilities, libraries, post offices, airports, ports, military facilities, and places of worship. Maps of community facilities identified within the CARA are included within **Appendix A**.

5.1.1.1 ***Public Parks and Recreational Facilities***

Parks and recreational facilities have been identified within the CARA using Maryland iMap GIS data (Maryland iMap GIS Catalog) supplemented with web searches, as shown in **Appendix A** and **Table 5-1**. Local, state, and national parks are considered. Wildlife refuges are also included as Section 4(f) protected resources.

Table 5-1: Parks and Recreational Facilities

Corridor	Parks and Recreational Facilities	Jurisdiction
Corridor 6	Beachwood Park	Anne Arundel County
	Jacobsville Park	Anne Arundel County
	Lake Shore Athletic Complex and Recreation Area	Anne Arundel County
	Bodkin Park	Anne Arundel County
	Downs Memorial Park	Anne Arundel County
	Recovery Community Park	Queen Anne's County
	Route 18 Park	Queen Anne's County
	4-H Club Park	Queen Anne's County
Corridor 7	Broadneck Park	Anne Arundel County
	Cape St. Claire Park	Anne Arundel County
	Bay Head Park	Anne Arundel County
	Sandy Point State Park	MDNR
	Terrapin Nature Park	Queen Anne's County
	Old Love Point Park	Queen Anne's County
	Cross Island Trail	Queen Anne's County
	Mowbray Park	Queen Anne's County
	Ferry Point Park	Queen Anne's County
	Long Point Park	Queen Anne's County
	Grasonville Park	Queen Anne's County
	Ewing Pond Park	Queen Anne's County
	Kent Island Research Wildlife Management Area	MDNR
	Kent Narrows Landing	Queen Anne's County
Corridor 8	Kings Branch Park	Anne Arundel County
	Riva Area Park	Anne Arundel County
	Central Ave Park	Anne Arundel County
	Smithsonian Environmental Research Center	Smithsonian Institution
	Lock Haven Park	Anne Arundel County
	Mayo Beach Park	Anne Arundel County
	Beverly Triton Nature Park	Anne Arundel County
	Claiborne Landing	Talbot County
	Talbot County Community Sports Complex	Talbot County
	Hog Neck Golf Course	Talbot County

Corridor 6

There are eight public parks and recreational facilities located within Corridor 6. Beachwood Park is located near the western end of the Corridor along the Magothy River, south of MD 100 in Pasadena. Jacobsville Park and the Lake Shore Athletic Complex are located just south of MD 100 where it meets MD 177. Bodkin Park is located to the north of MD 177. Downs Memorial Park is located along the Chesapeake Bay waterfront. Three parks are located on the Eastern Shore within the corridor including Recovery Community Park, along Wrights Neck Road close to the centerline of the corridor, and Route 18 Park and 4-H Club Park which are both located near US 301 towards the eastern end of the corridor.

If an alignment following MD 100 and MD 177 is considered during Tier 2, it could potentially require impacts to the Lake Shore Athletic Complex and Downs Memorial Park, both of which are located adjacent to the existing roadway alignment. If an alignment located to the north of MD 177 is considered in Tier 2, it would potentially require impacts to Bodkin Park and Downs Park. If an alignment along the southern portion of the corridor is considered in Tier 2, it could potentially require impacts to Beachwood Park and the Lake Shore Athletic Complex. On the Eastern Shore, various potential alignments in Tier 2 could potentially require impacts to the Recovery Community Park, the Route 18 Park and/or the 4-H Club Park. Alignments could potentially be identified to avoid some or all these parks and recreational facilities. It is likely that one or more parks would be impacted given their prevalence and spatial distribution throughout the corridor.

Corridor 7

There are 14 public parks and recreational facilities located within Corridor 7. Broadneck Park, Cape St. Claire Park, Bay Head Park, and Sandy Point SP are all located on the Western Shore, north of US 50/301. Sandy Point SP is located adjacent to US 50/301 along the waterfront of the Chesapeake Bay, at the foot of the existing Bay Bridge. Terrapin Nature Park is located on Kent Island, adjacent to the eastern end of the existing Bay Bridge north of US 50/301. Old Love Point Park, Cross Island Trail, and Ferry Point Park are also located on Kent Island, north of US 50/301. Mowbray Park and the Kent Island Research Wildlife Management Area are south of US 50/301 on Kent Island. Long Point, Grasonville Park, and Ewing Park are located on the Eastern Shore in the vicinity of Grasonville.

If an alignment following the existing US 50/301 is evaluated in Tier 2, it would potentially require impacts to Bay Head Park, Sandy Point SP, Terrapin Nature Park, Cross Island Trail, and/or Long Point Park, all of which are located in close proximity to the roadway. If an alignment to the north of US 50/301 is evaluated in Tier 2, it could potentially require impacts to Broadneck Park, Cape St. Claire Park, Bay Head Park, Sandy Point SP, Terrapin Beach Park, Old Love Point Park, Cross Island Trail, Ferry Point Park, and/or Long Point Park. If an alignment to the south of US 50/301 is evaluated in Tier 2, it could potentially require impacts to Mowbray Park, Kent Island Research Wildlife Management Area, Grasonville Park, and/or Ewing Pond Park. Alignments could potentially be identified to avoid some or all these parks and recreational facilities. It is likely that one or more parks would be impacted given their prevalence and spatial distribution throughout the corridor.

Corridor 8

Corridor 8 contains 10 parks and recreational facilities. Kings Branch Park, Riva Area Park, and Central Avenue Park are located near the western end of the corridor, west of MD 2. The Smithsonian Environmental Research Center is an expansive preserve (2,650 acres) located east of MD 2, encompassing nearly the full width of the corridor. Loch Haven Park is located near the northern border of Corridor 6 on the Western Shore. Beverly Triton Beach Park and Mayo Beach Park are both located along the Chesapeake Bay Waterfront; the two parks combined nearly encompass the full width of the corridor. On the Eastern Shore, Clairborne Landing is located on Tilghman Island. The Talbot County Community Sports Complex and Hog Neck Golf Course are both located adjacent to US 50 at the eastern end of the corridor.

An alignment developed during Tier 2 would potentially require impacts to the Smithsonian Environmental Research Center given its extent in the corridor, except for possibly an alignment near the

far northern extent of the corridor. Mayo Beach Park and Beverly Triton Beach Park combined encompass nearly all the shoreline of the Chesapeake Bay within Corridor 8 where a crossing would begin. The Talbot County Community Sports Complex and Hog Neck Golf Course are both located approximately near where a new crossing corridor could potentially tie in to the existing US 50, which would likely result in impact to these facilities. However, an alignment developed in Tier 2 to the north or south of these parks could potentially avoid them. Alignments could potentially be identified to avoid some or all these parks and recreational facilities. It is likely that one or more parks would be impacted given their prevalence and spatial distribution throughout the corridor.

Summary

Each of the three corridors contain multiple parks and recreational facilities that could potentially be impacted by an alignment in the corridor – Corridor 6 has eight facilities, Corridor 7 has 14 facilities, and Corridor 8 has 10 facilities. While alignments could potentially be identified in each corridor to avoid some or all these parks and recreational facilities, it is likely that one or more of the facilities would be impacted given their prevalence and spatial distribution throughout each of the corridors.

5.1.1.2 Schools

Schools were identified within the CARA using Maryland iMap GIS data, which includes information on K-12 public schools.

Corridor 6

Corridor 6 contains five schools, all of which are public K-12 schools located along MD 177 Mountain Road in Pasadena on the Western Shore. These include Jacobsville Elementary School, Lake Shore Elementary School, Bodkin Elementary School, Chesapeake High School, and Chesapeake Bay Middle School. The latter three schools share a campus roughly one mile from the Chesapeake Bay shoreline. No schools are within the corridor on the Eastern Shore.

If an alignment following MD 177 is considered during Tier 2, such an alignment would potentially require impacts to schools in the corridor due to their location adjacent to the roadway. Alternate alignments could potentially avoid impacts to the schools.

Corridor 7

Corridor 7 contains nine schools, all of which are K-12 public schools. West Annapolis Elementary School is in Annapolis on the far western extent of Corridor 7. Broadneck High School, Cape St. Claire Elementary School, and Windsor Farm Elementary School are all located near each other in Annapolis, north of US 50/301 roughly three miles from the existing Bay Bridge.

Kent Island Elementary School, Stevensville Middle School, and Bayside Elementary School are located on Kent Island, clustered together just north of US 50/301. Kent Island High School is located along the edge of Corridor 7, one mile north of US 50/301 in Stevensville. Grasonville Elementary School is located near the eastern end of the corridor in Grasonville, just south of US 50/301.

Schools in Corridor 7 could potentially be impacted by a new crossing and the associated on-land roadway improvements. If a Tier 2 alignment is developed to follow the existing US 50/301 alignment, such an alignment may require impacts to schools near the existing roadway such as Stevensville Middle School. Impacts to other schools in the corridor could potentially result from an alignment located parallel to US

50/301 to the north or south. Alternate Tier 2 alignments could potentially be developed to avoid impacts to schools in the corridor.

Corridor 8

Corridor 8 contains seven schools, all of which are K-12 public schools. Davidsonville Elementary School is located in Davidsonville along MD 214, towards the western end of the corridor. Central Special, Central Elementary School, Central Middle School, South River High School and the Center of Applied Technology South all share a campus along MD 214 in Edgewater. Mayo Elementary School is located in Edgewater, near the Chesapeake Bay shoreline. No schools are within the corridor on the Eastern Shore.

Schools in Corridor 8 could potentially be impacted by a new crossing and the associated on-land roadway improvements. All of the schools in Corridor 8 are located along MD 214, so a Tier 2 alignment following the existing MD 214 alignment could require impacts to schools. Alternate alignments could potentially be developed to avoid impacts to schools in the corridor.

Summary

Each of the three corridors contain K-12 public schools that could potentially be impacted by an alignment in the corridor – Corridor 6 has five schools, Corridor 7 has nine schools, and Corridor 8 has seven schools. Although all of the schools are located adjacent to roadways that may be impacted, alternate alignments could potentially be developed to avoid impacts to the schools in each of the corridors.

5.1.1.3 Fire and Rescue Services

Fire and rescue services were identified within the CARA using Maryland iMap GIS data (Maryland iMap GIS Catalog, 2018). Avoidance and mitigation strategies would be considered if potential impacts to one or more fire stations are identified in Tier 2.

Corridor 6

There are two fire stations located in Corridor 6. The Jacobsville Fire Station and the Lake Shore Volunteer Fire Station are both located in Pasadena, along MD 177 on the Western Shore in Corridor 6.

If an alignment that follows MD 177 is considered during Tier 2, it could potentially require right-of-way impacts to one or both of the fire stations in Corridor 6. Alternate alignments could be developed to avoid both fire stations.

Corridor 7

There are four fire stations located in Corridor 7. The Annapolis Fire Department Taylor Avenue Station is located in Annapolis, near the western end of the corridor. The Cape St. Claire Volunteer Fire Company is located in Annapolis north of US 50/301, roughly three miles from the existing Bay Bridge.

The Kent Island Volunteer Fire Department is located in Chester, just south of US 50/301 on Kent Island. The Grasonville Volunteer Fire Department is located in Grasonville, south of US 50/301. Both are located along MD 18.

If a Tier 2 alignment is considered along US 50/301, it could require impacts to fire stations, particularly the Kent Island Volunteer Fire Department which is approximately 500 feet away from US 50/301. If a Tier 2 alignment is developed to the north, it could require impacts the Cape St. Claire Volunteer Fire Department. If a Tier 2 alignment is developed to the south, it could require impacts to the Annapolis Fire

Department Taylor Ave. Station and the Grasonville Volunteer Fire Department. Alternate alignments could be developed that avoid the fire stations.

Corridor 8

There are no fire stations located within Corridor 8.

Summary

Corridor 6 contains two fire stations and Corridor 7 contains four fire stations that could potentially be impacted by an alignment in the corridor – there are none located in Corridor 8. Alternate alignments could be developed to avoid impacts to the fire stations in Corridor 6 and Corridor 7.

5.1.1.4 Police

Police facilities were identified within the CARA using Maryland iMap GIS data (Maryland iMap GIS Catalog, 2018). Avoidance and mitigation strategies would be considered if potential impacts to one or more police facilities are identified in Tier 2.

Corridor 6

There are no police stations within Corridor 6.

Corridor 7

Corridor 7 contains three police facilities. The Maryland State Police Barrack J is located near the western end of the corridor in Annapolis. The Maryland Natural Resource Police Southern Region Broadneck Office and the MDTA Police William Preston Lane Jr. Memorial Bridge Police Station are both located close to US 50/301 in Annapolis.

If an alignment located along US 50/301 is considered during Tier 2, it would potentially require impacts to the Maryland Natural Resource Police and MDTA police stations, as they are both directly adjacent to US 50/301. Alignments could likely be developed that avoid the police facilities.

Corridor 8

There are no police facilities within Corridor 8.

Summary

There are no police facilities located within Corridor 6 or Corridor 8. There are three police facilities located in Corridor 7, though alignments could likely be developed to avoid the facilities.

5.1.1.5 Libraries

Libraries were identified within the CARA using Maryland iMap GIS data. Avoidance and mitigation strategies would be considered if potential impacts to one or more libraries are identified in Tier 2.

Corridor 6

Corridor 6 contains one library, the Mountain Road Branch in Pasadena. It is located along MD 177 roughly two miles from the Chesapeake Bay shoreline.

If an alignment following MD 177 is developed, it would potentially require impacts to the Mountain Road Branch Library. Other alignments could be developed that would avoid the library.

Corridor 7

Four libraries are located within Corridor 7. The Maryland State Law Library and the Maryland State Archives Library are both located at the far western end of the corridor in Annapolis. The Anne Arundel County Broadneck Branch Library is located north of US 50/301 in Annapolis. The Kent Island Library is located in Stevensville, north of US 50/301 on Kent Island.

If an alignment north of US 50/301 is considered in Tier 2, it could potentially require impacts to the Broadneck Branch Library and/or the Kent Island Library. If an alignment south of US 50/301 is considered in Tier 2, it could potentially require impacts to the Maryland State Law Library and the Maryland State Archives Library, though they are located at the periphery of the corridor. Alignments could potentially be developed to avoid libraries in Corridor 7.

Corridor 8

There is one library located in Corridor 8, the Anne Arundel County Edgewater Branch located near MD 2 in Edgewater. The library is near the edge of the corridor, and if an alignment in that area is considered in during Tier 2, it could require impacts to the library. Other alignments could be developed that would avoid the library.

Summary

Each of the three corridors contain libraries that could potentially be impacted by an alignment in the corridor – Corridor 6 has one library, Corridor 7 has four libraries, and Corridor 8 has one library. Although the libraries are located adjacent to roadways that may be impacted, alternate alignments could potentially be developed to avoid impacts to the libraries in each of the corridors.

5.1.1.6 Places of Worship

Places of Worship were identified within the CARA using information from the United States Geological Survey's (USGS) Geographic Names Information System supplemented with internet searches (USGS, 2019).

Corridor 6

Nine places of worship are located within Corridor 6. Pasadena Evangelical Presbyterian Church, Magothy United Methodist Church, Mount Zion United Methodist Church, Saint Ann's Temple, Bible Church of Lake Shore, Lake Shore Baptist Church, Galilee Lutheran Church, and Mount Carmel United Methodist Church are located on the Western Shore within Corridor 6 in the Pasadena area. Several of these are located along MD 177. The Earle Chapter Church is located on the Eastern Shore within Corridor 6, near Centreville.

If an alignment is developed along MD 177 during Tier 2, it would potentially require impacts to multiple places of worship, as many are located along this main thoroughfare. Alignments developed in Tier 2 further north or south of MD 177 could also have potential impacts to one or more places of worship, depending on the specific alignment.

Corridor 7

There are 29 places of worship located within Corridor 7. Holy Temple Church, Saint John Neumann Church, Evangelical Presbyterian Church, Full Gospel Church, Saint Paul Lutheran Church, Unitarian Church of Anne Arundel, and Weems Creek Baptist Church are all clustered at the far western end of Corridor 6, near downtown Annapolis. Antioch Church, Asbury Broadneck United Methodist Church,

Christ Our Anchor United Presbyterian Church of Christ, Saint Andrew by the Bay Catholic Church, Saint Conrad Friary, and Saint Margaret's Episcopal Church are all located within Corridor 7, east of the Severn River on the Western Shore. Christ Episcopal Church, Church of God, First Baptist Church, Galilee Lutheran Church, Kent Island United Methodist Church, Kingsley Church, Saint Christopher's Catholic Church, and Union Wesley United Methodist Church are all located on Kent Island within Corridor 7. Bryans Church, Church of Christ, Community Church, Garnett Church, Grasonville Seventh Day Adventist Church, and Immanuel United Methodist Church are all located on the Eastern Shore within Corridor 7, in and around Grasonville.

If an alignment following US 50/301 is considered in Tier 2, it would potentially require impacts to multiple places of worship proximal to the existing roadway. Other places of worship are scattered throughout the corridor, and potential alignments developed in Tier 2 to the north or south of US 50/301 could potentially require impacts to one or more places of worship, depending on the specific alignment.

Corridor 8

There are 15 places of worship located within Corridor 8. All Hallows Chapel, All Hallows Episcopal Church, Church of Saint Andrew the Fisherman, Davidsonville United Methodist Church, Holy Family Roman Catholic Church, Hope United Methodist Church, Hopes Chapel, Mayo Memorial United Methodist Church, Our Lady of Perpetual Help Catholic Church, Saint Marks United Methodist Church, and Union United Methodist Church are all located on the Western Shore within Corridor 8. All Faiths Episcopal Church, Claiborne United Methodist Church, DeShields United Methodist Church, and John Wesley United Methodist Church are all located on the Eastern Shore within the corridor.

These places of worship are scattered throughout the corridor, and generally not concentrated in any particular area. Alignments in Corridor 8 considered during Tier 2 could potentially require impacts to one or more places of worship depending on the specific alignment.

Summary

Each of the three corridors contains numerous places of worship that could potentially be impacted by an alignment in the corridor – Corridor 6 has nine, Corridor 7 has 29, and Corridor 8 has 15. The places of worship are scattered throughout the corridor and adjacent to existing roadways, so alignments developed in Tier 2 could have potential impacts to one or more, depending on the specific alignment.

5.1.1.7 Other Community Facilities

Other community facilities were identified within the CARA including post offices, airports, and community centers. Facilities were identified using Maryland iMap GIS data and web searches. No hospitals are located within any of the CARA.

Corridor 6

One US Postal Service post office is located within Corridor 6 on the Western Shore along MD 177 in Pasadena. A small airport runway on private property, is also located on the Western Shore, north of MD 177. No community centers are located within Corridor 6. An alignment in Corridor 6 could potentially impact the private airport or post office, depending on the location.

Corridor 7

Five post offices are located in Corridor 7 including those in Arnold, Annapolis, Stevensville, Chester and Grasonville. The Bay Bridge Airport is located just south of US 50/301 near the existing Bay Bridge on Kent

Island. The Grasonville Community Center is located on the Eastern Shore in Grasonville. An alignment in Corridor 7 could potentially impact the post offices, airport, and/or community center, depending on the location.

Corridor 8

Two post offices are within Corridor 8, located in Edgewater and Mayo. No airports are located within Corridor 8. The Talbot County Community Center is located at the far eastern end of the corridor near US 50 on the Eastern Shore. An alignment in Corridor 8 could potentially impact the post offices and/or community center, depending on location.

Summary

Each of the three corridors contains community facilities such as post offices, airports, and community centers that could potentially be impacted by an alignment in the corridor. Potential alignments could impact the private airport or post office in Corridor 6, the post offices, airport, and/or community center in Corridor 7, and the post offices and/or community center in Corridor 7, depending on the specific alignment. During Tier 2, alternate alignments could potentially be developed to avoid impacts to the various other community facilities in each of the corridors.

5.1.2 Land Use

Existing land use within the corridors is identified based on MDP 2010 Land Use/Land Cover data, as shown in **Table 5-2** and **Figure 5-1**. The data was accessed via Maryland iMap (Maryland iMap GIS Catalog, 2018). Information in **Table 5-3** and **Figure 5-2** identifies existing zoning within the corridors and is based on statewide 2012 Generalized Zoning data received from MDP. Specific land use and zoning impacts are not known during the Tier 1 analysis because specific roadway alignments are not included as part of the CARA. More detailed assessment of land use and zoning impacts will occur during Tier 2. Additional Land Use/Land Cover maps for the CARA are included within **Appendix B**.

Examination of **Table 5-2** generally shows similar percentages of land use/land cover present across all corridors. By percentage, Corridor 6 contains more water than the others, Corridor 7 contains more residential property than the other two, and Corridor 8 contains the most agricultural land.

Table 5-2: Land Use/Land Cover

Land Use/Land Cover	Corridor 6		Corridor 7		Corridor 8	
	Acres	Percent	Acres	Percent	Acres	Percent
Agriculture	5,615	16%	3,257	12%	9,250	20%
Commercial	270	1%	933	3%	316	1%
Forest	4,502	13%	4,502	16%	8,524	18%
Residential	5,655	16%	6,563	23%	6,828	15%
Water	18,137	52%	9,657	35%	20,589	44%
Wetlands	280	1%	821	3%	352	1%
Industrial	0	0%	92	<1%	39	<1%
Institutional	280	1%	890	3%	195	<1%
Other	272	1%	1,271	5%	720	2%
Total Area	35,010	100%	27,986	100%	46,814	100%

Source: 2010 Land Use/Land Cover; MDP

Figure 5-1: Land Use/Land Cover

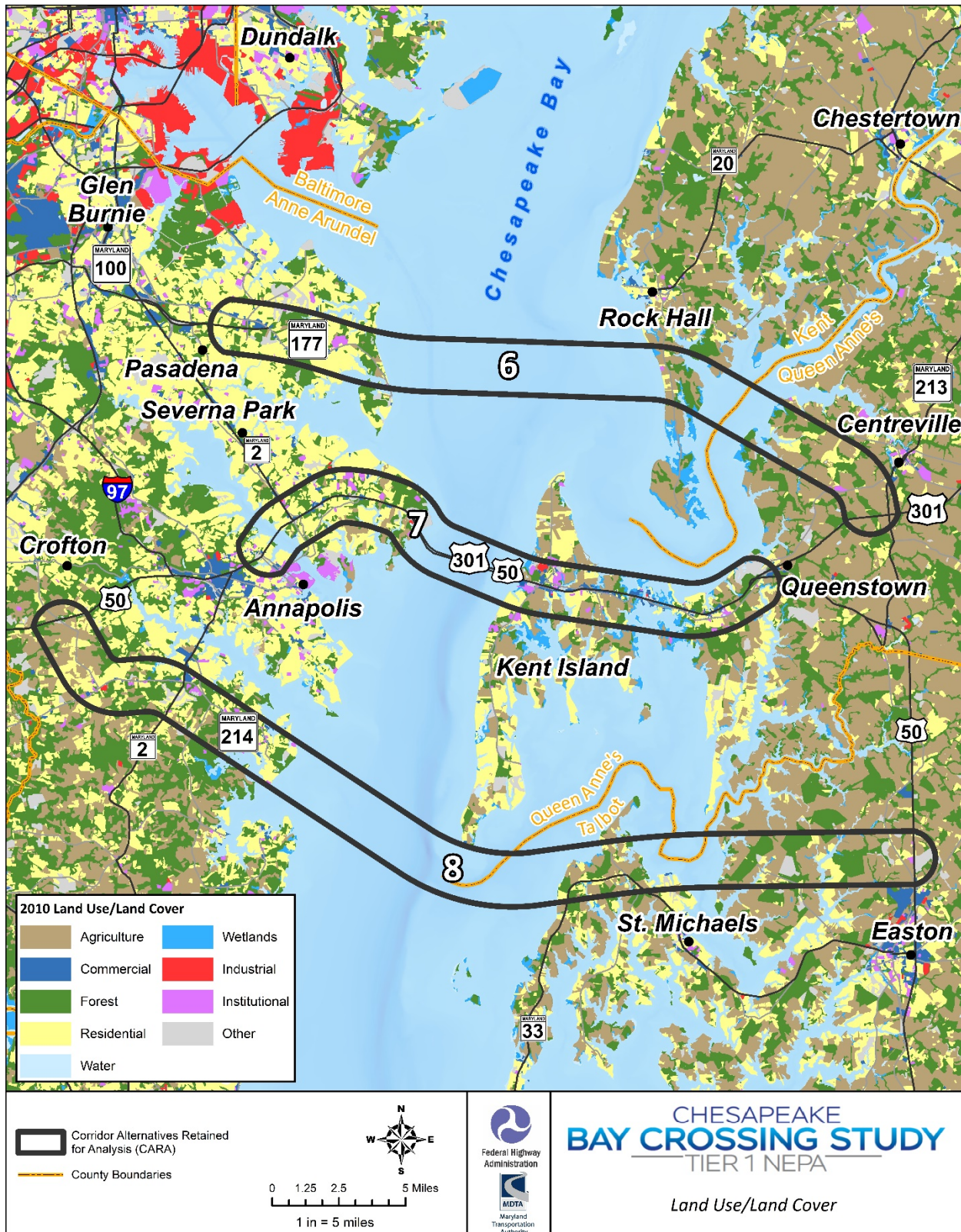
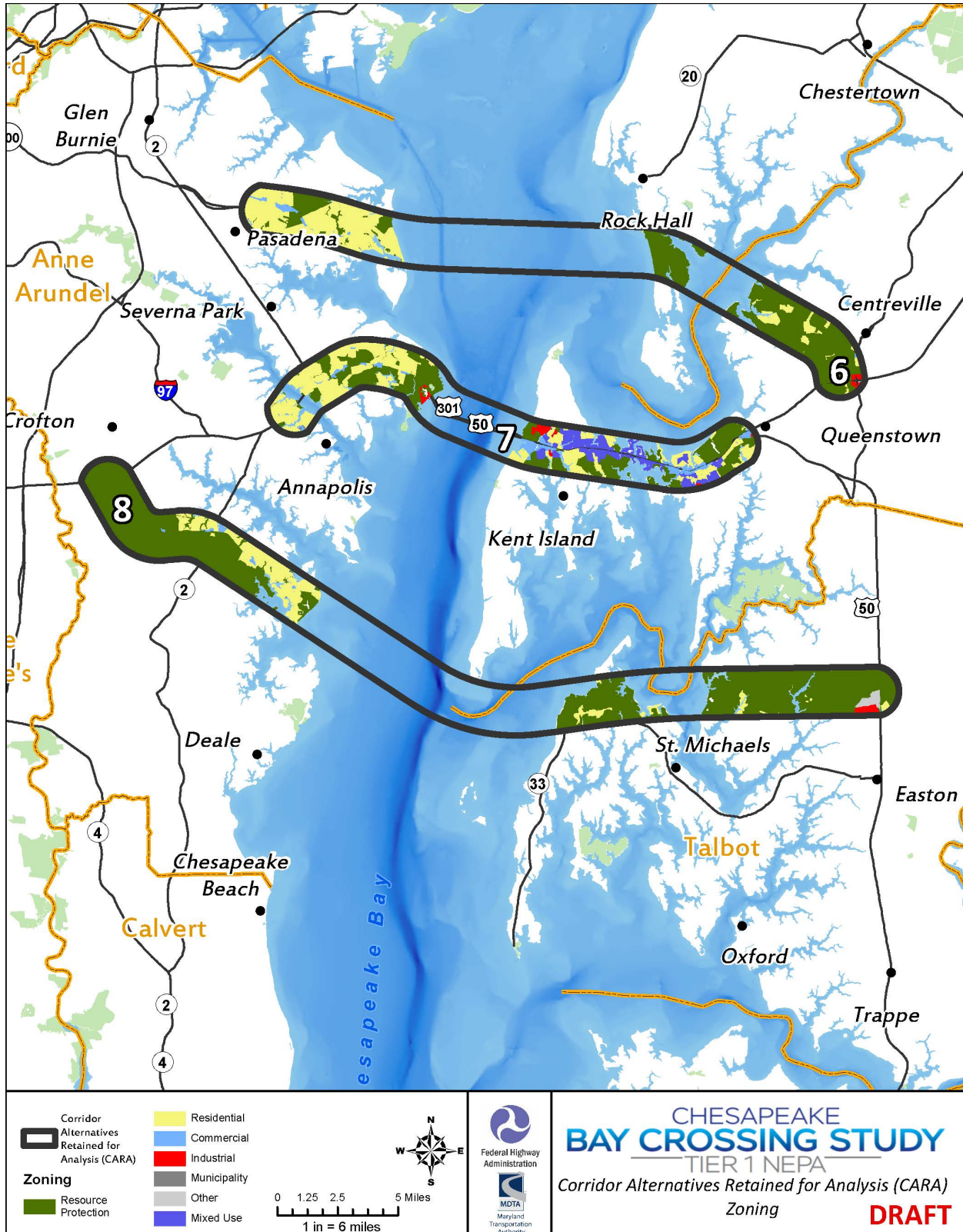


Figure 5-2: Generalized Zoning



As shown in **Table 5-3** and on **Figure 5-2**, substantial portions of each of the three corridors are zoned as resource protection, defined in the MDP dataset as “rural zoning districts with an intent to protect natural resources.” These districts allow for only relatively low density of development (less than one dwelling unit per acre). The second largest zoning category in all three corridors is residential zoning, which ranges from very low to high density residential zones. Commercial, industrial, mixed use, municipal and other zoning categories account for relatively small portions of each corridor.

Table 5-3: Generalized Zoning

Zoning Type	Corridor 6		Corridor 7		Corridor 8	
	Acres	Percent of Zoned Area	Acres	Percent of Zoned Area	Acres	Percent of Zoned Area
Commercial	308	2%	901	5%	235	1%
Residential Total	6,388	39%	7046	41%	3692	14%
<i>Very Low Density</i>	204	1%	204	1%	0	0%
<i>Low Density</i>	5,609	34%	5,092	29%	2,738	10%
<i>Medium Density</i>	563	3%	1,531	9%	919	4%
<i>High Density</i>	12	0%	219	1%	35	0%
Industrial	102	1%	319	2%	256	1%
Resource Protection Total	9,722	59%	6,916	40%	21,597	83%
<i>Least Protective</i>	7,016	42%	5,269	31%	20	0%
<i>Moderately Protected</i>	0	0%	436	3%	15,452	59%
<i>Most Protected</i>	2,706	16%	1,211	7%	6,125	23%
Mixed Use	0	0%	1,951	11%	0	0%
Municipality	0	0%	26	0%	0	0%
Other	0	0%	107	1%	315	1%
Total Zoned Area	16,520	100%	17,266	100%	26,095	100%

Source: 2012 Generalized Zoning data; MDP. Areas with no zoning designation (such as open water of the Chesapeake Bay) not included.

5.1.2.1 Corridor 6

The Western Shore area within Corridor 6 is generally characterized by low-density residential use interspersed with forested parklands and stream valleys. Suburban neighborhoods extending to the north and south of MD 100 and MD 177 are mixed with forested areas such as Beachwood Park, Bodkin Park, and Downs Memorial Park. Denser residential neighborhoods are located at the western end of the corridor, to the north of MD 100. Commercial and institutional uses, such as small shopping centers and schools, are mostly spread along the length of MD 177. Agriculture is not highly prevalent in the Western Shore portion of Corridor 6, through some small patches are scattered throughout.

The Eastern Shore portion of Corridor 6 includes a portion of the peninsula located between Rock Hall and Eastern Neck Island. Land use on this peninsula is predominantly agricultural and forested land, with some low-density residential and institutional use. Wetland areas line portions of the shoreline along the Chesapeake Bay and the Chester River.

On the Eastern Shore to the east of the Chester River, agriculture is the predominant land use within Corridor 6. Several low-density residential neighborhoods are located along Wrights Neck Road and Dulin Clark Road. Patches of forested land are interspersed throughout, often adjacent to residential areas. Wetlands line portions of the Chester River shoreline. Small areas of institutional and commercial uses are located near MD 18, MD 213, and Brownsville Road.

Residential land use is prevalent on the Western Shore and covers most of the width of the corridor, so any alignment would be likely to impact residential land uses. If an alignment is developed in Tier 2 along MD 177, it could potentially require greater impact to commercial and institutional uses compared to a potential alignment further north or south. Any potential Tier 2 alignment would likely impact parks and other forested lands that are scattered throughout the corridor.

Impacts to agricultural land would potentially be more prevalent on the Eastern Shore, where agricultural land uses cover much of the corridor area. Residential impacts would also be possible, though potentially could be avoided depending on the alignments developed in Tier 2. Impacts to commercial and institutional uses would be possible on the Eastern Shore but could potentially be avoided.

There is one incorporated municipality whose boundaries overlap with Corridor 6; Centreville is located in Queen Anne's County on the Eastern Shore near the far eastern end of the corridor. A small portion of the incorporated area of Centreville is located within the corridor.

5.1.2.2 Corridor 7

Land use on the Western Shore within Corridor 7 is primarily low-density residential use, with areas of institutional, commercial, and farmland dispersed throughout. The far western end of the corridor, west of the Severn River, includes areas of higher density residential use along with commercial and institutional uses. Clusters of more dense residential development and institutional uses such as schools are located north of US 50/301, along Cape St. Claire Road, College Parkway, and Bay Dale Drive. Commercial and industrial uses are primarily located adjacent to US 50/301 and other main roadways on the Western Shore in Corridor 7.

The area of Kent Island within Corridor 7 is a relatively even mix of low to medium-density residential use, farmland, institutional, and commercial uses. Commercial uses are clustered along US 50/301, with a patchwork of other land uses to the north and south. East of the Chester River within Corridor 7 on the Eastern Shore is characterized by farmland and low to medium-density residential use, with developed commercial and institutional uses clustered around Grasonville and US 50/301.

On the Western Shore, any Tier 2 alignment could potentially impact residential uses, which largely extend through the entire width of the corridor. If an alignment is considered in Tier 2 located along US 50/301, it would potentially require impacts to fewer residences but more commercial uses. If an alignment is considered in Tier 2 to the north of US 50/301, it would potentially have greater impact on developed areas and institutional uses such as schools, whereas a potential Tier 2 alignment to the south of US 50/301 would more likely impact low-density residential areas. Wetland areas are clustered around the shorelines near Kent Narrows.

On the Eastern Shore, if a Tier 2 alignment is considered along US 50/301, it would potentially require impacts to commercial uses, and potentially residential uses, farmland, and institutional uses. If a Tier 2

alignment is considered to the north or south of US 50/301, these would potentially impact primarily a mix of farmland, residential use, and institutional uses.

There are two incorporated municipalities within Corridor 7 – Annapolis and Queenstown. The municipal boundaries of Annapolis, located on the far western end of the corridor, include the portion of Corridor 7 west of the Severn River and south of Weems Creek.

5.1.2.3 Corridor 8

The Western Shore portion of Corridor 8 generally consists of residential uses along main roadways and shoreline areas, interspersed with forested and agricultural areas. Large swathes of farmland are located near the western tie-in location with US 50, with low-density residential uses and forested areas scattered throughout. A string of institutional, commercial and industrial uses line MD 214, which crosses the corridor diagonally. A cluster of developed uses including institutional, low to medium-density residential and commercial uses are clustered along MD 2, which crosses north-south through the corridor. The Mayo area, located on a peninsula between the Rode River and the South River, is largely developed with low-density residential, institutional, and parkland uses. Small patches of commercial use are located mostly along MD 214.

The Eastern Shore portion of Corridor 8 is largely agricultural, with large patches of farmland and forested areas, and low-density residential uses lining roadways. Commercial and institutional uses are found adjacent to US 50 on the far eastern end of the corridor. Wetland areas are found along the waterways in the corridor.

Impacts from an alignment in Corridor 8 on the Western Shore would potentially include farmland, residential and forested areas, as these extend throughout the width of the corridor. Commercial and institutional uses could potentially be impacted, though they are scattered more sparsely through the corridor. Impacts to residences and parklands would potentially occur in the Mayo area, as the entirety of the shoreline is occupied by park and residential uses. Impacts on the Eastern Shore may include a mix of agriculture, residential land and forested areas, which are dispersed throughout the corridor. Institutional and commercial uses would potentially be impacted near the tie-in with US 50.

One incorporated municipality, Easton, is located partly within the area of Corridor 8 on the Eastern Shore in Talbot County. The northern edge of Easton along US 50 overlaps Corridor 8 near the eastern terminus of the corridor.

5.1.2.4 Land Use Summary

For each of the three corridors, any Tier 2 alignment would likely impact residential land uses on the Western Shore, which extend through the entire width of the corridors. In Corridor 6, parks and other forested lands that are scattered throughout the corridor would likely be impacted. In Corridor 7, commercial impacts are likely if an alignment is considered along US 50/301. In Corridor 8, impacts would potentially also include farmland and forested areas – additionally, the entirety of the shoreline is occupied by park and residential uses.

On the Eastern Shore, impacts to agricultural land would be prevalent in both Corridor 6 and Corridor 8 for any Tier 2 alignment. In Corridor 7, potential impacts are most likely to commercial, residential, and institutional land uses, as well as some farmland.

5.1.3 Priority Funding Areas

PFAs are existing communities and places designated by local governments where investment is intended to support future growth (MDP, 2019). The presence of PFAs within a corridor indicates that new transportation infrastructure may be more compatible with planned land uses in the corridor. However, because PFAs also encompass areas with existing development, the presence of PFAs may also correlate with a greater likelihood of direct impacts to developed areas. PFAs are shown in **Figure 5-3** and quantified in **Table 5-4**. PFAs are identified based on data from Maryland iMap (Maryland iMap GIS Catalog, 2018). Incorporated municipalities described in the previous section are also shown on **Figure 5-3**.

Table 5-4: Priority Funding Areas (PFAs)

Corridor	Acres of PFAs	PFAs Percentage of Total Area
Corridor 6	1,600	5%
Corridor 7	7,900	28%
Corridor 8	3,500	7%

5.1.3.1 Corridor 6

Corridor 6 contains approximately 1,600 acres of PFAs, which encompass roughly five percent of the total area within the corridor. Corridor 6 has the least area designated as PFAs among the CARA, both in terms of acreage and percentage of the total. On the Western Shore, a cluster of PFAs are located on the far western end of Corridor 6 surrounding MD 100 in the Pasadena area. On the Eastern Shore, a relatively small portion of the PFAs associated with Centreville are located within the corridor near the far eastern end.

5.1.3.2 Corridor 7

Corridor 7 contains approximately 7,900 acres of PFAs, which encompass roughly 28 percent of the total area within the corridor. Corridor 7 has the greatest area of PFAs among the CARA, both in terms of acreage and percentage of total area. On the Western Shore, PFAs encompass most of the area west of the Severn River within Corridor 7, close to downtown Annapolis, as well as areas north of US 50/301. Much of the Eastern Shore portion of Corridor 7 is within PFAs, including areas around Stevensville, Chester, Grasonville, and Queenstown along US 50/301.

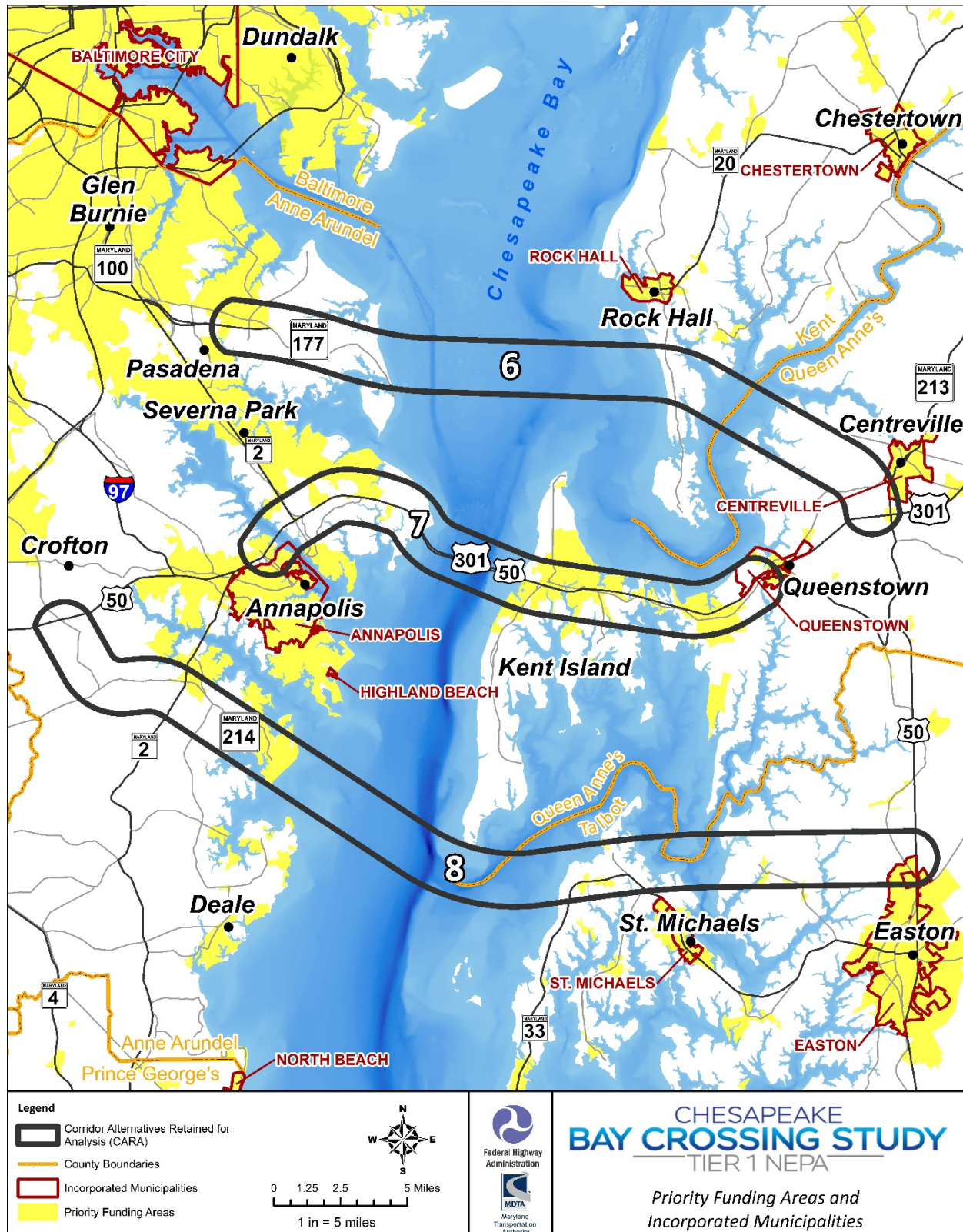
5.1.3.3 Corridor 8

Corridor 8 contains approximately 3,500 acres of PFAs, which encompass roughly seven percent of the total area within the corridor. On the Western Shore, areas designated as PFAs are located along MD 2 and near the Bay waterfront in the Mayo area, surrounding Beverly Triton Beach Park. On the Eastern Shore, small portions of PFAs within Corridor 8 are located along MD 33 and near Copperville, Tunis Mills, Unionville and Easton.

5.1.3.4 Summary of Priority Funding Areas

Corridor 7 contains the highest percentage of PFAs by acreage (28 percent), which also correlates with a greater likelihood of direct impacts to developed areas. Corridor 6 (five percent) and Corridor 8 (seven percent) both have a much lower percentage of PFAs by acreage and the majority of these PFAs are located on the Western Shore.

Figure 5-3: Priority Funding Areas and Incorporated Municipalities



5.1.4 Community Cohesion

This section describes potential impacts to community cohesion that could result from a new crossing within each CARA. For example, roadway alignment crossing through existing communities, barriers to accessing community facilities, and barriers resulting from limited access roadways are among the factors considered. Community cohesion was evaluated based on data such as community facilities identified in **Section 5.1.1**, MDP 2010 Land Use/Land Cover presented in **Section 5.1.2**, and review of aerial imagery (Maryland iMap GIS Catalog, 2018).

5.1.4.1 Corridor 6

Corridor 6 contains a number of residential neighborhoods spread throughout its area on the Western Shore, encompassing nearly the full width of the corridor. Therefore, any alignment identified within Corridor 6 in Tier 2 would likely result in community cohesion impacts from a new limited access roadway. If Corridor 6 is carried forward for evaluation in Tier 2, multiple alignments would be developed within the corridor. If an alignment is developed to follow the existing MD 177, it would separate areas on the north and south sides of the roadway by expanding the facility and limiting access. This would potentially impede local north-south travel across the roadway and reduce local access to local businesses and community facilities such as parks and schools (identified in **Section 5.1.1**). Other potential Tier 2 alignments developed to the north or south of MD 177 could potentially bisect existing residential subdivisions with the effects of disrupting the cohesion of the neighborhoods, impeding local travel, and separating residences and community facilities. Pedestrian and bike access would potentially be impeded by any alignment as well.

Community cohesion impacts could also occur on the Eastern Shore, though there is much less residential development, so bisecting residential neighborhoods would be less likely. A limited access roadway could separate residences from associated farmland and separate more dispersed rural residences from community facilities. A new facility could also affect the character, visual appeal and setting of the rural areas on the Eastern Shore by creating new infrastructure in areas of largely undeveloped farmland.

Impacts to community cohesion could potentially be minimized by avoiding, to the extent possible, bisecting residential neighborhoods and locating Tier 2 alignments near the periphery of residential areas where impacts are unavoidable. Consideration of local access in the roadway design, including bicycle and pedestrian crossings, could help potentially help reduce the barrier to cross-travel created by a new limited access facility. However, it is possible that impacts to community cohesion could result from a new crossing in Corridor 6, even with avoidance and minimization measures.

5.1.4.2 Corridor 7

Residential neighborhoods occupy a substantial portion of the area within Corridor 7, particularly on the Western Shore and on Kent Island. Improvements within Corridor 7 could potentially cause community cohesion impacts to these neighborhoods, depending on location and alignment specifics developed in Tier 2. Impacts to community cohesion could potentially be limited by adding new capacity along the existing US 50/301 roadway. A future Tier 2 alternative that expands capacity along existing roadways in Corridor 7 could minimize impacts to community cohesion and disruption to residential neighborhoods. Neighborhoods in the vicinity of US 50/301 have generally been developed to the north or south of the highway, often separated by commercial areas or wooded buffers. Thus, new capacity in Corridor 7 could likely avoid bisecting existing residential neighborhoods; impacts would likely be primarily along the

periphery of residential areas. Such an alignment would, however, have greater impacts on commercial land uses and community facilities that are more prevalent alongside US 50/301. Access roads to adjacent land uses could also be impacted.

If the Tier 2 evaluation considers alignments located to the north or south of US 50/301, such alignments would potentially have substantial community cohesion impacts, bisecting existing residential neighborhoods, separating residences and community facilities, and impeding local travel. This effect would be further exacerbated by the close proximity to the existing US 50/301 limited access facility. A limited access roadway could also separate residences from associated farmland and separate more dispersed rural residences from community facilities.

Impacts to community cohesion could potentially be minimized by avoiding, to the extent possible, bisecting residential neighborhoods and locating alignments near the periphery of residential areas where impacts are unavoidable. Consideration of local access in the roadway design, including bicycle and pedestrian crossings, could help potentially help reduce the barrier to cross-travel created by a new limited access facility. It is possible that impacts to community cohesion would result from a new crossing in Corridor 7, even with avoidance and minimization measures.

5.1.4.3 Corridor 8

Corridor 8 contains a number of residential neighborhoods spread throughout its area, particularly concentrated on the Western Shore near the shoreline, and in the vicinity of St. Michaels on the Eastern Shore. These residential areas encompass nearly the full width of the corridor in some locations, meaning that impacts to community cohesion would likely be required by any Tier 2 alignment identified within Corridor 8. A new limited access facility would potentially bisect residential neighborhoods, impede local north-south travel across the roadway and reduce local access to local businesses and community facilities such as parks and schools. A limited access roadway could separate residences from associated farmland and separate more dispersed rural residences from community facilities. A new facility could also affect the character, visual appeal and setting of the rural areas by creating new infrastructure in areas of largely undeveloped farmland.

Impacts to community cohesion could potentially be minimized by avoiding, to the extent possible, bisecting residential neighborhoods and locating alignments near the periphery of residential areas where impacts are unavoidable. Consideration of local access in the roadway design, including bicycle and pedestrian crossings, could help potentially help reduce the barrier to cross-travel created by a new limited access facility. Corridor 8 includes the greatest total acreage of residential land. Communities and residential neighborhoods on the Western Shore, particularly in the vicinity of Mayo and Beverly Beach would likely be impacted, as their density and distribution would make avoidance difficult. Thus, a Tier 2 alternative in Corridor 8 would likely result in community cohesion impacts in this vicinity. On the Eastern Shore, communities in the vicinity of St. Michaels would likely incur similar impacts. There are few opportunities for a potential alignment to follow existing roadway infrastructure in Corridor 8. It is likely that impacts to community cohesion would result from a new crossing in Corridor 8, even with avoidance and minimization measures.

5.1.4.4 Summary of Community Cohesion

Potential impacts to community cohesion that could result from a new crossing within each CARA were evaluated as part of this Tier 1 Study, such as a roadway alignment crossing through existing communities,

barriers to accessing community facilities, and barriers resulting from limited access roadways. In general, impacts to community cohesion are possible for all three of the CARA, but could potentially be minimized by avoiding, to the extent possible, bisecting residential neighborhoods and locating Tier 2 alignments near the periphery of residential areas where impacts are unavoidable. For all three CARA, it is possible that impacts to community cohesion would result from a new crossing, even with avoidance and minimization measures. For Corridor 7, impacts to community cohesion could potentially be limited by adding new capacity along the existing US 50/301 roadway. New capacity in any of the corridors could provide greater access for Eastern Shore residents to facilities such as hospitals that are more prevalent on the Western Shore.

Public involvement activities associated with a future Tier 2 Study would further engage project stakeholders, business owners, study area residents and members of potentially impacted communities to provide further input into the presence of and potential impacts on community cohesion.

5.2 Population and Housing

Demographic data on population and housing are identified within each CARA along with the Socioeconomic Study Area and the State of Maryland for comparison. Because of the broad nature of the Tier 1 Study, specific impacts to population and housing based on right-of-way acquisition are not assessed during Tier 1. **Table 5-5** presents the US Census Bureau ACS 5-Year total population estimates from 2017 (US Census Bureau, 2018). Census Tracts within the Socioeconomic Study Area are shown in **Figure 5-4**. While no specific impacts affecting demographics are anticipated to be directly impacted by a No-Build Alternative for this study, the No-Build Alternative does include currently planned and programmed infrastructure projects as of Project Scoping in 2017 and would be updated during Tier 2 to reflect newly planned and programmed projects that may affect the study area. Moreover, under the No-Build Alternative anticipated increases in travel times and delays related to growing traffic congestion may lead to future negative effects for population and housing. The study area could potentially become less desirable for residents and businesses due to the effects of growing traffic congestion.

Table 5-5: Total Population

Area	State of Maryland	Socioeconomic Study Area Tracts	Corridor 6 Tracts	Corridor 7 Tracts	Corridor 8 Tracts
Total Population	5,996,079	286,739	76,360	78,181	59,266

US Census ACS 2013-2017

The Socioeconomic Study Area includes 56 Census Tracts that are located within the CARA and the contiguous area between the CARA. (Thus, some of the Census Tracts within the Socioeconomic Study Area do not overlap any of the three CARA.) The Socioeconomic Study Area tracts have an estimated total population of 286,739.

Table 5-6 presents housing data for the State of Maryland, Socioeconomic Study Area, and the tracts within each CARA. The Socioeconomic Study Area contains an estimated 119,469 housing units, which are 89.9 percent occupied.

Figure 5-4: Socioeconomic Study Area Census Tracts

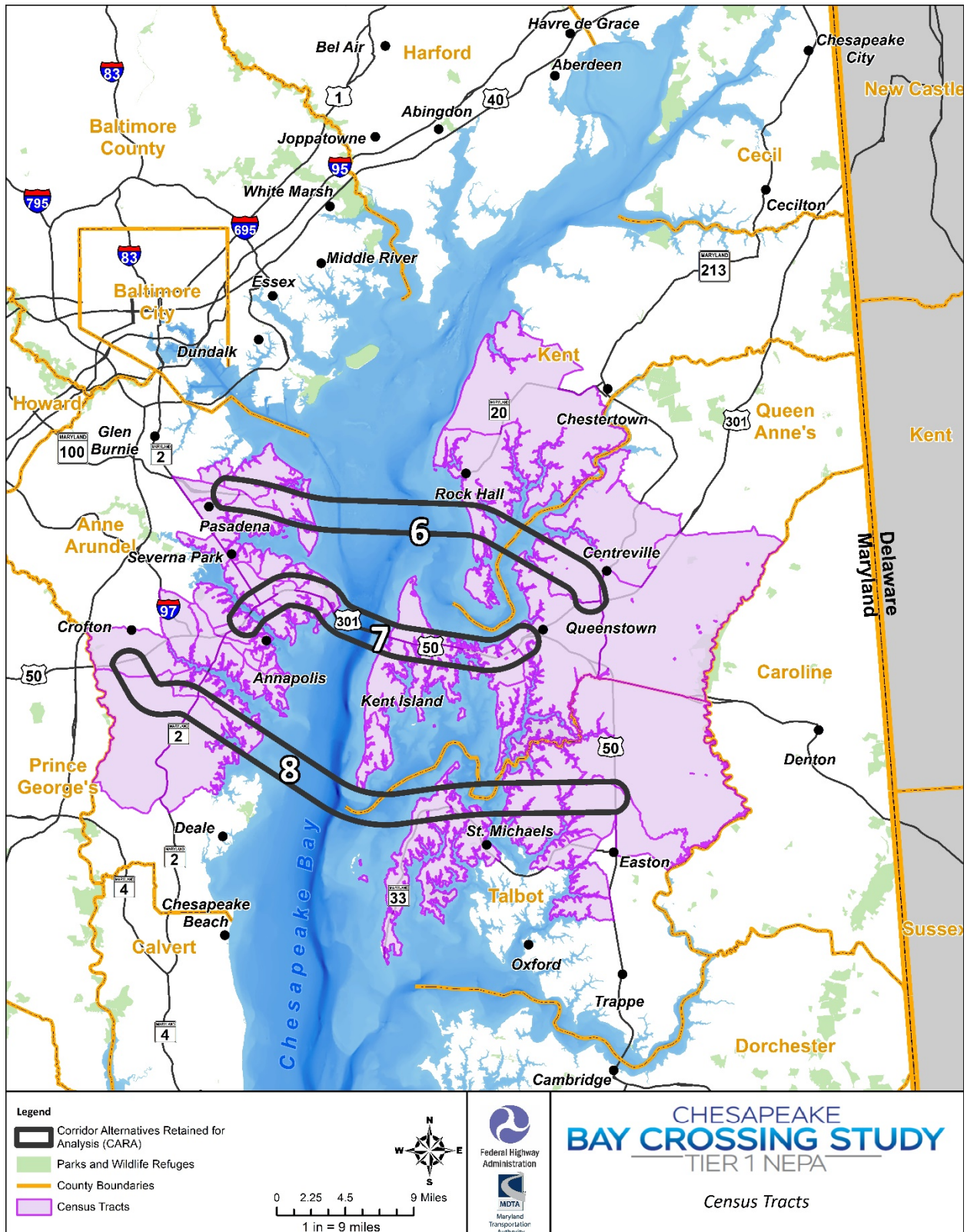


Table 5-6: Housing Units and Occupancy

Area	State of Maryland	Socioeconomic Study Area Tracts	Corridor 6 Tracts	Corridor 7 Tracts	Corridor 8 Tracts
Total Housing Units	2,427,014	119,469	30,719	30,492	25,723
Occupied	2,181,093	106,994	27,196	27,359	22,680
Vacant	245,921	12,475	3,523	3,133	3,043
Occupancy Rate	89.9%	89.6%	88.5%	89.7%	88.2%

US Census Bureau ACS 2013-2017

5.2.1 Corridor 6

The Census Tracts within Corridor 6 have a total population of 76,360, which is approximately 27 percent of the population of the Socioeconomic Study Area. There are 30,719 total housing units in the Corridor 6 Census Tracts, with an occupancy rate of approximately 88.5%. The housing occupancy rate is similar to the overall Socioeconomic Study Area (89.6%) and Maryland (89.9%).

Specific impacts affecting demographics, such as residential displacements resulting from a new crossing, are not known during Tier 1. However, residential displacements could potentially be required. The Western Shore in Corridor 6, in particular, would potentially experience residential relocations for a new crossing in Corridor 6. Relocation opportunities may be available proximal to the impacted areas, thus minimizing potential impacts to overall population and demographics. Individuals relocated would likely experience temporary adverse effects from relocation. Affected property owners would receive assistance in accordance with federal and/or state requirements.

5.2.2 Corridor 7

The Census Tracts within Corridor 7 have a total population of 78,181, which is approximately 27 percent of the population of the Socioeconomic Study Area. There are 30,492 total housing units in the Corridor 7 Census Tracts, which are 89.7 percent occupied. The housing occupancy rate is comparable to the Socioeconomic Study Area (89.7%) and Maryland (89.9%).

Specific impacts affecting demographics, such as residential displacements resulting from a new crossing, are not known during Tier 1. However, residential displacements would potentially be required. Relocation opportunities may be available proximal to the impacted areas, thus minimizing potential impacts to overall population and demographics. Individuals relocated would likely experience temporary adverse effects from relocation. Affected property owners would receive assistance in accordance with federal and/or state requirements.

5.2.3 Corridor 8

The Census Tracts within Corridor 8 have a total population of 59,266, which is approximately 21 percent of the Socioeconomic Study Area population. Corridor 8 is the least populous of the CARA, reflecting its location in a somewhat more rural area with less residential development. There are 25,723 total housing units in the Corridor 8 Census Tracts, with an occupancy rate of 88.2%. The housing occupancy rate is similar to that of the Socioeconomic Study (89.7%) and Maryland (89.9%).

Specific impacts affecting demographics, such as residential displacements resulting from a new crossing, are not known during Tier 1. However, residential displacements would potentially be required. Relocation opportunities may be available proximal to the impacted areas, thus minimizing potential impacts to overall population and demographics. Individuals relocated would likely experience temporary

adverse effects from relocation. Affected property owners would receive assistance in accordance with federal and/or state requirements.

5.2.4 Summary of Population and Housing

Within the CARA, Corridor 6 and Corridor 7 contain approximately similar estimated total populations (76,360 and 78,181, respectively), while Corridor 8 has a much lower population (59,266). In line with the population data, Corridor 6 and Corridor 7 have a comparable number of total housing units (30,719 and 30,492, respectively), while Corridor 8 has fewer (25,723); however, all three of the CARA have a similar occupancy rate. Specific housing impacts are not known during Tier 1, but residential displacements could potentially be required for alignments in all three corridors, especially on the Western Shore. Corridors with greater population could potentially require greater impacts to population and housing; however, future Tier 2 alternatives could be developed to avoid populated areas where possible.

5.3 Environmental Justice in Minority and Low-Income Populations

Title VI of the Civil Rights Act of 1964, as amended, provides that no person in the United States shall, on the ground of race, color, or national origin (including individuals with limited English proficiency), be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. Title VI bars intentional discrimination, as well as disparate impact discrimination (i.e., a neutral policy or practice that has an unequal impact on protected groups). The FHWA Technical Advisory T6640.8A Guidance for Preparing and Processing Environmental and Section 4(f) Documents implements Title VI in assessing environmental effects. It states, “The general population served and/or affected (city, county, etc.) by the proposed action should be identified by race, color, national origin, and age.” It should identify if there are foreseeable impacts on “general social groups specially benefitted or harmed by the proposed project.” It also states, “The effects of a project on the elderly, handicapped, nondrivers, transit-dependent, and minority and ethnic groups are of particular concern and should be described to the extent these effects can be reasonably predicted.”

The FHWA Title VI Program is broader than the Title VI statute and encompasses other nondiscrimination statutes, Executive Orders (EO) and authorities, including:

- Section 162 (a) of the Federal-Aid Highway Act of 1973 (23 United States Code 324) providing protection against gender-based discrimination;
- The Age Discrimination Act of 1975 prohibiting discrimination on the basis of age;
- Section 504 of the Rehabilitation Act of 1973/Americans With Disabilities Act of 1990 providing disabled individuals equal opportunities to participate in and have access to federal programs, benefits and services;
- EO 13166 – Improving Access to Services for Persons with Limited English Proficiency (2000) requiring federal agencies to identify any need for services to those with limited understanding of the English language; and
- EO 12898 – Federal Actions to Address Environmental Justice (EJ) in Minority and Low-Income Populations (1994) to ensure federal programs do not result in disproportionately high and adverse environmental or health impacts to these populations by requiring federal agencies to:

“...promote nondiscrimination in federal programs substantially affecting human health and the environment and provide minority and low-income communities’ access to public information on, and an opportunity for public participation in, matters relating to human health or the environment.”

The EJ analysis for the Bay Crossing Study considers the definitions, methodologies, and guidance provided in the Council on Environmental Quality’s *Environmental Justice Guidance Under the National Environmental Policy Act* (1997); United States Department of Transportation’s (USDOT) Order 5610.2(a), *Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (2012 revision); FHWA EJ Order 6640.23A, *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (2012); FHWA memorandum, *Guidance on Environmental Justice and NEPA* (2011); and the FHWA’s *Environmental Justice Reference Guide* (2015). The strategies developed under EO 12898 and the USDOT/FHWA policies on EJ take the appropriate steps to identify and address disproportionately high and adverse effects of federal transportation projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law, while ensuring EJ communities are provided meaningful opportunities for public participation in project development and decision-making.

The Tier 1 Study includes US Census data to identify the presence of low-income and minority populations and assess the potential for impacts from the CARA. The Socioeconomic Study Area was used for the EJ analysis. The presence and location of potential EJ populations are identified and described in this section.

US Census Tracts are used as an appropriately sized geographic unit to evaluate the area and population within the two-mile wide corridors and potential for impacts to these populations. US Census 5-Year ACS data are statistical estimates from the US Census Bureau and thus may be somewhat less accurate than Decennial Census data. However, the most recent Decennial Census data available is from 2010, so the ACS 2013-2017 estimates are more recent and thus more likely reflective of the existing conditions. According to the Census Bureau website, “The 5-year estimates from the ACS are ‘period’ estimates that represent data collected over a period of time. The primary advantage of using multiyear estimates is the increased statistical reliability of the data for less populated areas and small population subgroups.” (US Census Bureau 2019).

According to the Office of Management and Budget (OMB) Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity (1997), for the purposes of E.O. 12898, a population is identified as minority in an area affected by the policy action if “either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis” (OMB, 1997).

The Tier 1 study considers potential impacts to EJ populations at the scale of approximately 2-mile wide corridor alternatives. Detailed impacts, such as specific right-of-way acquisition, will not be determined during Tier 1. The Tier 1 analysis includes qualitative assessments, consistent with FHWA’s *Guidance on Environmental Justice and NEPA* (FHWA, 2011), of potential effects to EJ populations such as from potential changes to community cohesion, community facilities, socioeconomics, altered travel patterns and parking, access, visual quality, and noise. Land area (in acres) of EJ Census Tracts falling within each corridor alternative was identified and maps were developed to depict the location of EJ Census Tracts,

as well as public and subsidized housing locations, in relation to the corridor alternatives. This information is presented in the below sections.

When potential impacts to EJ populations are identified, impacts are compared to those experienced in non-EJ population areas within each corridor alternative retained for analysis. A disproportionately high and adverse effect on minority and low-income populations is defined by the FHWA EJ Order as an impact that:

- Would be predominately borne by a minority and/or low-income population, or
- Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

5.3.1 Low-Income Populations

The FHWA and USDOT EJ Orders define a “low-income” individual as a person whose median household income is at or below the Department of Health and Human Services (HHS) poverty guidelines (FHWA, 2011). US Census American Community Survey 5-year data on incomes below poverty level and median household income was collected for each Census Tract within the Socioeconomic Study Area. The percentage of the population below the poverty level was calculated for the study area as a whole, as well as for the State of Maryland.

The 2017 HHS poverty guidelines identify the poverty level at \$12,060 annual income for a single-person household and \$16,240 for a two-person household. The rate increases by \$4,180 for each additional person in a household beyond two (HHS, 2017).

For this study, Census Tracts are considered potential locations of low-income populations if the population below the poverty level:

1. Is greater than 50 percent; or,
2. Is 10 percentage points or more over the average percentage of the overall Socioeconomic Study Area (all Census tracts that comprise the study area).

All census tracts meeting one or both criteria above were identified as potential low-income EJ population areas.

As shown in **Table 5-7**, Maryland has an estimated 9.7 percent of the population below the poverty level, or 566,966 total. The Socioeconomic Study Area includes an estimated population of 15,077 below the poverty level, or 5.4 percent of the total population within the Study Area for whom the poverty status is determined.

Census Tracts that exceed the Socioeconomic Study Area percentage below the poverty level by 10 percentage points or more, or 15.4 percent, are identified as potential low-income EJ Census Tracts. As shown in **Table 5-8**, three Census Tracts within the Socioeconomic Study Area met this criterion: Census Tract 9505, Tract 8107, and Tract 7064.02. The Socioeconomic Study Area represents the contiguous area extending from the northernmost CARA to the southernmost and blank “Corridor” values in the tables below represent those census tracts that are not located within a CARA.

Table 5-7: Poverty Status

Geography	Population For Whom Poverty Status is Determined	Population Below Poverty Level	Percent Population Below Poverty Level	Number of Low-Income Tracts
State of Maryland	5,856,088	566,966	9.7%	N/A
Socioeconomic Study Area	279,059	15,077	5.4%	3
Corridor 6	75,820	3,479	4.6%	1
Corridor 7	72,248	3,787	5.2%	1
Corridor 8	59,046	3,212	5.4%	0

US Census Bureau ACS 2013-2017

Table 5-8: Poverty Status by Census Tract

Geography	Corridor	Population for Whom Poverty Status is Determined	Below Poverty Level	Percent Below Poverty Level
Maryland	N/A	5,856,088	566,966	9.7%
Socioeconomic Study Area	N/A	279,059	15,077	5.4%
7011.01	8	4059	174	4.3%
7011.02	8	8203	546	6.7%
7012	8	8656	119	1.4%
7013	8	7724	485	6.3%
7014	8	3494	320	9.2%
7023	8	5626	100	1.8%
7024.02		6192	237	3.8%
7025		5919	784	13.2%
7026.01		5437	253	4.7%
7026.02		5780	154	2.7%
7027.01	7	4187	87	2.1%
7027.02	7	3715	90	2.4%
7061.01		3374	348	10.3%
7063.01		4233	207	4.9%
7063.02		3145	199	6.3%
7064.01		7741	776	10%
7064.02		3027	536	17.7%
7065		5295	276	5.2%
7066	7	5398	474	8.8%
7067	7	477	10	2.1%
7307		7457	372	5.0%
7308	7	2477	72	2.9%

Geography	Corridor	Population for Whom Poverty Status is Determined	Below Poverty Level	Percent Below Poverty Level
7309.01	7	2530	20	0.8%
7309.02	7	4156	119	2.9%
7310.02	7	3571	158	4.4%
7310.03	7	4140	68	1.6%
7310.04	7	4408	195	4.4%
7311.02	7	7658	269	3.5%
7311.03	7	5300	531	10.0%
7311.04		4326	67	1.5%
7311.05		3568	157	4.4%
7312.01		6377	249	3.9%
7312.02	6	7920	152	1.9%
7312.03	6	7102	165	2.3%
7312.04	6	6269	616	9.8%
7313.03	6	6838	202	3.0%
7313.06	6	5891	179	3.0%
7313.07	6	6475	389	6.0%
7313.10	6	5587	306	5.5%
7313.11	6	8084	162	2.0%
7516		5047	280	5.5%
9504	6	3028	181	6.0%
9505	6	2459	410	16.7%
8104	6	5825	195	3.3%
8105	6	5369	226	4.2%
8106	6, 7	4973	296	6.0%
8107	7	4073	643	15.8%
8108	7	5651	236	4.2%
8109.01	7	5022	178	3.5%
8109.02	8	2931	95	3.2%
8110	7	4512	341	7.6%
9601	8	4259	236	5.5%
9602.01	8	3940	221	5.6%
9605.01	8	4871	456	9.4%
9607	8	3344	194	5.8%
9608	8	1939	266	13.7%

US Census Bureau ACS 2013-2017. The Socioeconomic Study Area represents the contiguous area extending from the northernmost CARA to the southernmost; blank "Corridor" values represent those census tracts that are not located within a CARA.

5.3.1.1 Corridor 6

Corridor 6 has an estimated population below the poverty level of 3,479, or 4.6 percent of the total population for whom poverty status is determined. This estimated total is lower than the Socioeconomic Study Area (5.4 percent) and the State of Maryland (9.7 percent). One Census Tract in Corridor 6 exceeds the Socioeconomic Study Area proportion below the poverty level by 10 percentage points or more. Census Tract 9505 contains an estimated population of 410 living below the poverty level, or 16.7 percent of the total population for whom poverty status is determined.

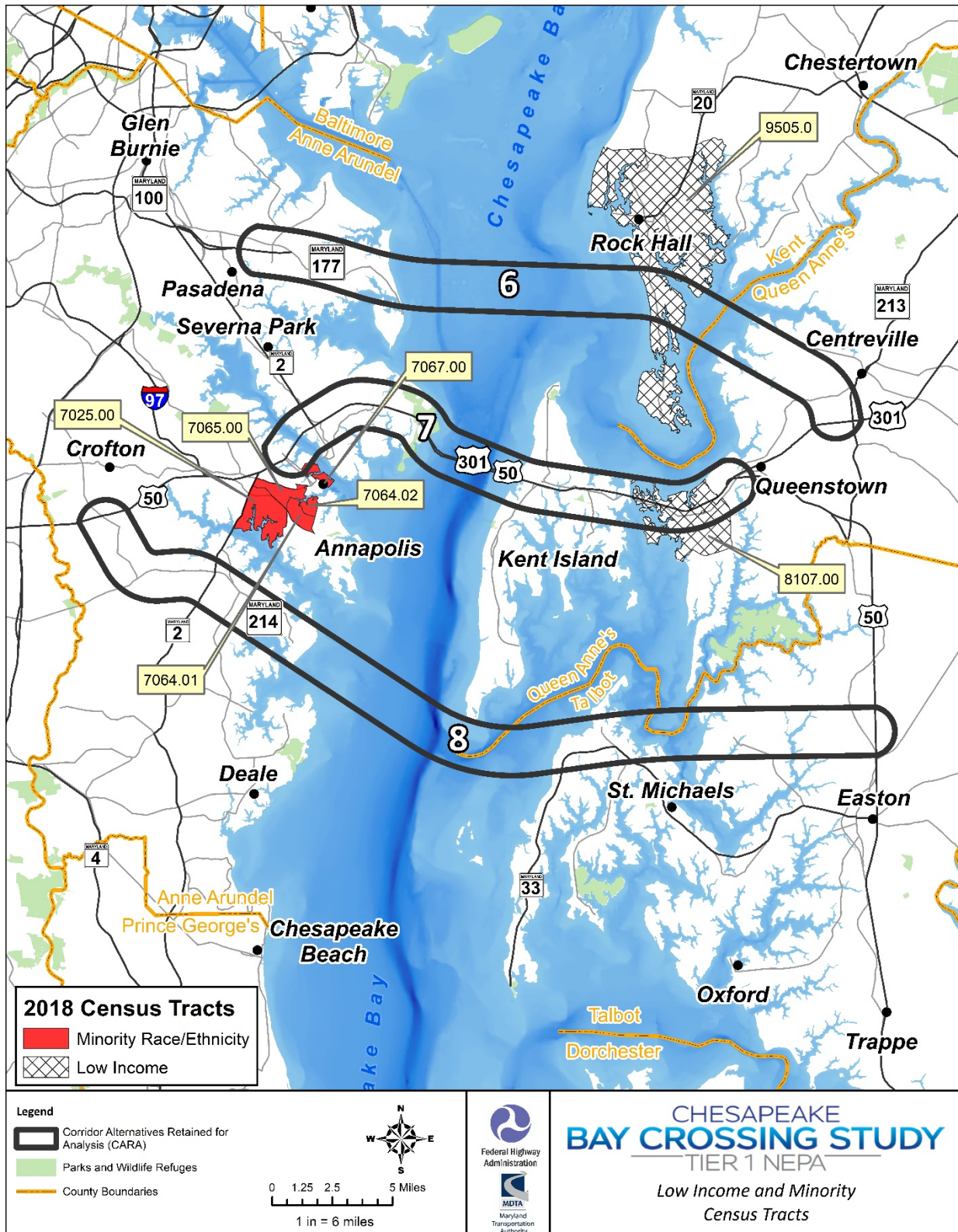
Census Tract 9505 is located in Kent County, extending from Rock Hall to Eastern Neck Island (see **Figure 5-5**). Impacts to the area within the Census Tract could not be avoided as it extends throughout the full width of the corridor. The specific location of low-income residents is not known at this level of detail, but the overall population within the census tract is primarily concentrated north of Corridor 6 in the vicinity of Rock Hall. The portion of the Census Tract within the corridor is primarily agricultural in nature and likely very sparsely populated. This could potentially minimize the overall impact to all populations, including low-income populations. Potential impacts to low-income population in Corridor 6 would therefore not be expected to be disproportionately high and adverse. Further evaluation during Tier 2 would be required to determine whether disproportionately high and adverse impacts may result from potential Corridor 6 improvements. Avoidance and mitigation would be considered in Tier 2 for any potential impacts to low-income populations.

5.3.1.2 Corridor 7

Corridor 7 has an estimated population below the poverty level of 3,787, or 5.2 percent of the total population for whom poverty status is determined. This estimated total is similar to the Socioeconomic Study Area (5.4 percent) and lower than the State of Maryland (9.7 percent). One Census Tract in Corridor 7 exceeds the Socioeconomic Study Area proportion below the poverty level by 10 percentage points or more. Census Tract 8107 contains an estimated population of 643 living below the poverty level, or 15.8 percent. The Census Tract is located on the Eastern Shore in Grasonville (see **Figure 5-5**).

A new crossing within Corridor 7 could not avoid impacts to some portion of the land area within Census Tract 8107 because it encompasses the full width of the corridor. Specific alignments could potentially avoid or minimize impacts to populated areas. Tract 8107 encompasses Grasonville and the surrounding area. The existing US 50/301 corridor bisects the tract currently. Commercial land uses are generally most prevalent directly adjacent to US 50/301 in the vicinity of Grasonville. Residential areas are primarily located along MD 18 (south of US 50/301) and in several subdivisions to the north of US 50/301. Other portions of the Tract include farmland and forested areas. A Tier 2 alternative could help minimize the potential for disproportionately high and adverse effects to low-income population in Tract 8107 by adding new capacity along US 50/301, which would likely primarily impact commercial businesses and would have lesser impacts to community cohesion compared to a roadway along new alignment. But a Tier 2 alternative to construct a new alignment to the north or south of US 50/301 could have greater residential and community cohesion impacts. Therefore, further evaluation in Tier 2 would be required to determine whether disproportionately high and adverse impacts could result from potential improvements in Corridor 7.

Figure 5-5: Minority and Low-Income Census Tracts within the CARA



5.3.1.3 Corridor 8

Corridor 8 has an estimated population below the poverty level of 3,212, or 5.4 percent of the population for whom poverty status is determined. This estimated total is similar to the Socioeconomic Study Area (5.4 percent) and lower than the State of Maryland (9.7 percent). No Census Tracts in Corridor 8 exceed the Socioeconomic Study Area proportion below the poverty level by 10 percentage points or more. Therefore, no potential low-income EJ populations have been identified at the Census Tract level in Corridor 8.

5.3.1.4 Summary

Census Tracts that exceed the Socioeconomic Study Area percentage below the poverty level by 10 percentage points or more are identified as potential low-income EJ Census Tracts. Three such Census Tracts meet this criterion (Census Tract 9505, Tract 8107, and Tract 7064.02). Census Tract 9505 is located within Corridor 6 and Census Tract 8107 is located within Corridor 7. Tract 7064.02 is located in the area between Corridor 7 and Corridor 8. Corridor 8 does not contain any potential low-income EJ Census Tracts. Further evaluation during Tier 2 would be required to determine whether disproportionately high and adverse impacts may result from any potential Tier 2 alternative alignments.

Census Tract 9505 is located within Corridor 6 and impacts to the area within the Census Tract could not be avoided as it extends throughout the full width of the corridor. However, the population in this Census Tract is primarily concentrated north of Corridor 6 and potential impacts to low-income population would not be expected to be disproportionately high and adverse.

Census Tract 8107 is located within Corridor 7 and impacts to some portion of the land area within Census Tract could not be avoided; however, specific alignments could potentially avoid or minimize impacts to populated areas. Further evaluation would be required to determine whether disproportionately high and adverse impacts may result from potential improvements in Corridor 7.

5.3.2 Minority Populations

The USDOT and FHWA EJ Orders define a minority individual as belonging to one of the following groups: (1) Black: a person having origins in any of the black racial groups of Africa; (2) Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race; (3) Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent; (4) American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through Tribal affiliation or community recognition; or (5) Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands (FHWA, 2011). Minority populations were identified at the Census Tract level for the Tier 1 assessment.

US Census American Community Survey 5-year data was collected for race and Hispanic/Latino ethnicity, which is evaluated separately from race. The percentage of the population identifying as minority race and/or ethnicity was calculated for the Socioeconomic Study Area as a whole, as well as for the State of Maryland (**Table 5-9**).

Census Tracts are considered to contain minority populations for purposes of this study if the minority population is greater than 50 percent or is 10 percentage points or more greater than the overall Socioeconomic Study Area (all Census tracts that comprise the study area).

The population of the Socioeconomic Study Area is approximately 14.5 percent minority race, which is notably lower than the State of Maryland at 43.4 percent. The Socioeconomic Study Area has approximately 6.2 percent population identifying as Hispanic or Latino, which is lower than the State of Maryland at 9.6 percent.

Table 5-9: Minority Race and Ethnicity

Geography	Total Population	Minority Race Population	Percent Minority Race	Number of Minority Race Tracts	Hispanic or Latino Population	Percent Hispanic or Latino	Number of Hispanic/Latino Tracts
State of Maryland	5,996,079	2,600,867	43.4%	N/A	573,303	9.6%	N/A
Socioeconomic Study Area	286,739	41,549	14.5%	5	17,864	6.2%	3
Corridor 6	76,360	7,952	10.4%	0	3,022	4.0%	0
Corridor 7	78,181	10,321	13.2%	1	4,164	5.3%	0
Corridor 8	59,266	6,352	10.7%	0	2,188	3.7%	0

US Census Bureau ACS 2013-2017

Potential minority race and ethnicity populations were identified in this analysis as any Census Tract with a proportion of minority race or ethnicity population 10 percentage points higher than the Socioeconomic Study Area. Thus, Census Tracts with a minority race population of 24.5 percent or greater were identified, and Census Tracts with Hispanic and Latino population greater than 16.2 percent were identified.

The Socioeconomic Study Area contains five Census Tracts identified as potential minority EJ populations, with minority race population greater than 24.5 percent (**Table 5-10**). The five Census Tracts identified as potential minority race populations are Census Tract 7025, Tract 7064.01, Tract 7064.02, Tract 7065, and Tract 7067. The Socioeconomic Study Area contains three Census Tracts identified as potential minority ethnicity EJ areas, with a Hispanic and Latino population greater than 16.2 percent (**Table 5-11**). The three Census Tracts identified as potential minority ethnicity EJ areas are Census Tract 7064.01, Tract 7064.02, and Tract 7065. These three Census Tracts are identified as containing a minority population for both race and Hispanic and Latino ethnicity. **Table 5-10** and **Table 5-11** summarize the demographic data by Census Tract and by corridor alternative, with identified potential minority EJ populations shaded gray.

Table 5-10: Race by Census Tract

Geography	Corridor	Total Population	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some other race alone	Two or more races:	Total Minority Race, including two or more races	Percent Minority Race, including two or more races
Maryland	N/A	5,996,079	1,782,256	16,281	373,065	2,830	236,834	189,601	2,600,867	43.4%
Socioeconomic Study Area	N/A	286,739	22,322	333	5,303	102	6,356	7,133	41,549	14.5%
7011.01	8	4,059	73	0	21	0	8	31	133	3.3%
7011.02	8	8,296	455	20	195	0	145	236	1,051	12.7%
7012	8	8,656	121	0	0	0	0	135	256	3.0%
7013	8	7,790	902	0	69	0	30	365	1,366	17.5%
7014	8	3,515	367	0	0	0	0	57	424	12.1%
7023	8	5,626	124	35	229	0	48	98	534	9.5%
7024.02		6,341	174	11	144	0	81	143	553	8.7%
7025		5,949	1,942	0	92	0	564	276	2,874	48.3%
7026.01		5,470	729	0	116	0	0	159	1,004	18.4%
7026.02		5,784	571	0	138	0	45	337	1,091	18.9%
7027.01	7	4,617	640	0	327	0	0	78	1,045	22.6%
7027.02	7	3,715	321	0	23	0	0	11	355	9.6%
7061.01		3,686	825	9	35	0	0	0	869	23.6%
7063.01		4,233	1,204	0	25	0	21	81	1,331	31.4%
7063.02		3,145	132	0	58	0	251	44	485	15.4%
7064.01		7,855	1,060	0	77	0	2,460	55	3,652	46.5%
7064.02		3,099	999	45	23	0	226	44	1,337	43.1%
7065		5,295	1,222	0	303	0	44	118	1,687	31.9%

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Geography	Corridor	Total Population	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some other race alone	Two or more races:	Total Minority Race, including two or more races	Percent Minority Race, including two or more races
7066	7	5,398	775	9	96	0	361	27	1,268	23.5%
7067	7	5,873	513	15	379	29	124	548	1,608	27.4%
7307		7,487	344	36	63	0	14	287	744	9.9%
7308	7	2,477	13	0	33	0	4	32	82	3.3%
7309.01	7	2,604	304	0	41	0	7	93	445	17.1%
7309.02	7	4,156	178	11	82	0	0	96	367	8.8%
7310.02	7	3,571	303	0	82	0	205	138	728	20.4%
7310.03	7	4,166	48	0	65	6	0	142	261	6.3%
7310.04	7	4,408	61	0	163	0	19	9	252	5.2%
7311.02	7	7,658	157	0	99	0	46	68	370	4.8%
7311.03	7	5,300	411	21	315	0	9	69	825	15.6%
7311.04		4,336	256	0	158	0	0	221	635	14.6%
7311.05		3,574	123	0	162	0	28	39	352	9.9%
7312.01		6,454	2	0	62	0	79	141	284	4.4%
7312.02	6	7,920	298	28	147	0	1	27	501	6.3%
7312.03	6	7,132	205	0	66	0	0	161	432	6.1%
7312.04	6	6,284	325	0	255	0	130	194	904	14.4%
7313.03	6	6,838	39	0	109	0	26	166	340	5.0%
7313.06	6	5,904	90	40	60	0	0	149	339	5.7%
7313.07	6	6,530	336	0	51	0	27	186	600	9.2%
7313.10	6	5,612	460	5	119	0	67	35	686	12.2%
7313.11	6	8,123	544	0	92	0	695	452	1,783	22.0%

Socioeconomic Technical Report

Geography	Corridor	Total Population	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some other race alone	Two or more races:	Total Minority Race, including two or more races	Percent Minority Race, including two or more races
7516		5,197	168	16	134	0	0	30	348	6.7%
9504	6	3,094	631	0	6	0	8	47	692	22.4%
9505	6	2,517	309	2	9	0	0	37	357	14.2%
8104	6	6,028	462	1	0	0	0	17	480	8.0%
8105	6	5,405	374	0	7	0	42	93	516	9.6%
8106	6,7	4,973	147	0	20	67	55	33	322	6.5%
8107	7	4,073	468	15	38	0	87	71	679	16.7%
8108	7	5,651	398	0	0	0	19	142	559	9.9%
8109.01	7	5,029	144	0	91	0	47	100	382	7.6%
8109.02	8	2,949	54	0	71	0	7	71	203	6.9%
8110	7	4,512	208	0	41	0	71	453	773	17.1%
9601	8	4,268	374	3	14	0	186	0	577	13.5%
9602.01	8	3,940	287	5	85	0	0	75	452	11.5%
9605.01	8	4,884	240	3	181	0	8	236	668	13.7%
9607	8	3,344	329	3	17	0	20	131	500	15.0%
9608	8	1,939	83	0	15	0	41	49	188	9.7%

US Census Bureau ACS 2013-2017. The Socioeconomic Study Area represents the contiguous area extending from the northernmost CARA to the southernmost; blank "Corridor" values represent those census tracts that are not located within a CARA.

Table 5-11: Hispanic and Latino Ethnicity by Census Tract

Geography	Corridor	Total Population	Not Hispanic or Latino	Hispanic or Latino	Percent Hispanic or Latino
Maryland		5,996,079	5,422,776	573,303	9.6%
Study Area		286,739	268,875	17,864	6.2%
7011.01	8	4,059	3,880	179	4.4%
7011.02	8	8,296	7,465	831	10.0%
7012	8	8,656	8,441	215	2.5%
7013	8	7,790	7,566	224	2.9%
7014	8	3,515	3,498	17	0.5%
7023	8	5,626	5,389	237	4.2%
7024.02		6,341	6,149	192	3.0%
7025		5,949	4,996	953	16.0%
7026.01		5,470	5,279	191	3.5%
7026.02		5,784	5,349	435	7.5%
7027.01	7	4,617	4,426	191	4.1%
7027.02	7	3,715	3,586	129	3.5%
7061.01		3,686	3,534	152	4.1%
7063.01		4,233	4,006	227	5.4%
7063.02		3,145	2,832	313	10.0%
7064.01		7,855	3,668	4,187	53.3%
7064.02		3,099	2,531	568	18.3%
7065		5,295	4,356	939	17.7%
7066	7	5,398	4,712	686	12.7%
7067	7	5,873	5,408	465	7.9%
7307		7,487	7,200	287	3.8%
7308	7	2,477	2,380	97	3.9%
7309.01	7	2,604	2,524	80	3.1%
7309.02	7	4,156	3,833	323	7.8%
7310.02	7	3,571	3,225	346	9.7%
7310.03	7	4,166	3,933	233	5.6%
7310.04	7	4,408	4,201	207	4.7%
7311.02	7	7,658	7,559	99	1.3%
7311.03	7	5,300	5,057	243	4.6%
7311.04		4,336	4,121	215	5.0%
7311.05		3,574	3,471	103	2.9%
7312.01		6,454	6,133	321	5.0%
7312.02	6	7,920	7,781	139	1.8%
7312.03	6	7,132	6,917	215	3.0%

Geography	Corridor	Total Population	Not Hispanic or Latino	Hispanic or Latino	Percent Hispanic or Latino
7312.04	6	6,284	5,969	315	5.0%
7313.03	6	6,838	6,813	25	0.4%
7313.06	6	5,904	5,742	162	2.7%
7313.07	6	6,530	6,397	133	2.0%
7313.10	6	5,612	5,453	159	2.8%
7313.11	6	8,123	7,242	881	10.9%
7516		5,197	5,196	1	<0.1%
9504	6	3,094	2,999	95	3.1%
9505	6	2,517	2,491	26	1.0%
8104	6	6,028	5,895	133	2.2%
8105	6	5,405	5,260	145	2.7%
8106	6, 7	4,973	4,379	594	12.0%
8107	7	4,073	3,968	105	2.6%
8108	7	5,651	5,594	57	1.0%
8109.01	7	5,029	4,888	141	2.8%
8109.02	8	2,949	2,936	13	0.4%
8110	7	4,512	4,344	168	3.7%
9601	8	4,268	4,268	0	0.0%
9602.01	8	3,940	3,912	28	0.7%
9605.01	8	4,884	4,583	301	6.2%
9607	8	3,344	3,289	55	1.6%
9608	8	1,939	1,851	88	4.5%

US Census Bureau ACS 2013-2017. The Socioeconomic Study Area represents the contiguous area extending from the northernmost CARA to the southernmost; blank "Corridor" values represent those census tracts that are not located within a CARA.

5.3.2.1 Corridor 6

The Census Tracts in Corridor 6 have a total estimated minority race population of 7,956, or 10.4 percent of the population. This is lower than the Socioeconomic Study Area (14.5 percent) and substantially lower than the State of Maryland (43.4 percent). No Census Tracts in Corridor 6 exceed the Socioeconomic Study Area total minority population by 10 percentage points or more; therefore, no potential minority race populations at the Census Tract level were identified in Corridor 6.

The Census Tracts in Corridor 6 have a total estimated Hispanic or Latino population of 3,022, or 4.0 percent of the population. This is somewhat lower than the Socioeconomic Study Area (6.2 percent) and the State of Maryland (9.6 percent). No Census Tracts in Corridor 6 exceed the Socioeconomic Study Area total by 10 percentage points or more; therefore, no potential minority ethnicity populations at the Census Tract level were identified in Corridor 6.

No impacts to potential EJ minority race or ethnicity populations are expected to occur under Corridor 6 based on the Census Tract level evaluation.

5.3.2.2 Corridor 7

The Census Tracts in Corridor 7 have a total estimated minority race population of 10,321, or 13.2 percent. This is slightly below the Socioeconomic Study Area (14.5 percent) and notably lower than the State of Maryland (43.4 percent). One Census Tract within Corridor 7 exceeds the Socioeconomic Study Area by at least 10 percentage points, Census Tract 7067 with 27.4 percent of the population identifying as minority race. Census Tract 7067 is located in downtown Annapolis along the Severn River, which overlaps with the far western end of Corridor 7, near the tie-in point with US 50/301 (**See Figure 5-5**).

Specific impacts that could occur within Census Tract 7067 are not known during this Tier 1 phase of the study. Census Tract 7067 is relatively densely developed and only accounts for a very small portion located near the edge of the corridor, as shown in **Figure 5-5** above, leaving space for future Tier 2 alignments that could possibly avoid the Tract. It is expected that a reasonable alignment could avoid impacts to population within the Tract, because other less impactful Tier 2 alignments could likely be developed.

The Census Tracts in Corridor 7 have a total estimated Hispanic or Latino population of 4,164, or 5.3 percent of the total population. This is relatively similar to the Socioeconomic Study Area (6.2 percent) and lower than the State of Maryland (9.6 percent). No Census Tracts in Corridor 7 exceed the Socioeconomic Study Area by 10 percentage points or more. Therefore, no potential EJ populations are identified at the Tract level in Corridor 7 based on Hispanic or Latino ethnicity.

Impacts could occur to minority populations in Census Tract 7067, but could potentially be avoided depending on the alignment location. No other impacts to minority race or ethnicity populations are expected to occur under Corridor 7 based on the Census Tract level evaluation. Further evaluation in Tier 2 would be required to determine whether disproportionately high and adverse impacts may result from potential improvements.

5.3.2.3 Corridor 8

The Census Tracts in Corridor 8 have an estimated minority race population of 6,352, or 10.7 percent of the total population. This is lower than the Socioeconomic Study Area (14.5 percent) and substantially lower than the State of Maryland (43.4 percent). No Census Tracts in Corridor 8 exceed the Socioeconomic Study Area total by 10 percentage points or more; therefore, no potential minority race EJ populations at the Census Tract level were identified in Corridor 8.

The Census Tracts in Corridor 8 have an estimated Hispanic or Latino population of 2,188, or 3.7 percent. This is lower than the Socioeconomic Study Area (6.2 percent) and the State of Maryland (9.6 percent). No Tracts within Corridor 8 exceed the Socioeconomic Study Area total by 10 percentage points or more; therefore, no potential Hispanic or Latino EJ populations at the Census Tract level were identified in Corridor 8.

No impacts to potential EJ minority race or ethnicity populations are expected to occur under Corridor 8 based on the Census Tract level evaluation.

5.3.2.4 Summary

Potential EJ minority and ethnicity populations were identified in the analysis as any Census Tract with a proportion of minority race or ethnicity population 10 percentage points higher than the Socioeconomic Study Area. In total, five Census Tracts in the Socioeconomic Study Area were identified as potential minority race populations (Census Tract 7025, Tract 7064.01, Tract 7064.02, Tract 7065, and Tract 7067), with three of those also meeting the threshold for containing potential EJ Hispanic or Latino areas (Census Tract 7064.01, Tract 7064.02, and Tract 7065). Four of the five Census Tracts identified as potential EJ minority race populations in the Socioeconomic Study Area are located in the contiguous areas between the CARA, with only Census Tract 7067 overlapping the far western end of Corridor 7. The three Census Tracts identified as potential EJ Hispanic or Latino areas are located in the contiguous areas between the CARA and not within the actual corridors. No impacts to potential EJ minority race or ethnicity populations are expected to occur under Corridors 6, 7, or 8 based on the Census Tract level evaluation. Specific impacts are still unknown at this stage and further evaluation in Tier 2 would be required to determine whether disproportionately high and adverse impacts may result from potential improvements.

5.4 Limited English Proficiency

The assessment of EJ populations also includes limited English proficiency (LEP) populations. EO 13166 challenges federal agencies to "implement a system by which [limited English-proficient or "LEP"] persons can meaningfully access... services consistent with, and without unduly burdening, the fundamental mission of the agency." LEP is defined as individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English (US Department of Justice, 2000). LEP populations are evaluated with consideration of the 2005 USDOT *Policy Guidance Concerning Recipients' Responsibilities to Limited English Proficient (LEP) Persons*.

US Census ACS data was collected at the Census Tract level to quantify the presence of LEP populations, as shown in **Table 5-12**.

Table 5-12: Limited English-Speaking Households

Geography	Total Households	Limited English-Speaking Households	Percent Limited English-speaking Households
Maryland	2,181,093	69,236	3.2%
Socioeconomic Study Area	106,994	1,229	1.1%
Corridor 6	27,196	144	0.5%
Corridor 7	27,359	150	0.5%
Corridor 8	22,680	123	0.5%

US Census Bureau ACS 2013-2017

An estimated 3.2 percent of households in Maryland are identified as limited English-speaking households. The Socioeconomic Study Area includes an estimate 1,229 limited English-speaking households, or 1.1 percent. The Census Tracts within the CARA each have an estimated 0.5 percent limited English-speaking households.

Public engagement measures assuring meaningful language access for identified LEP populations will include written translations of vital documents, and if warranted, the providing of interpreters at public involvement events and other outreach methods, to satisfy the requirements of Executive Order 13166.

5.5 Jobs and Industry

This section details employment by industry sector and the overall employment/unemployment totals and rates in Census Tracts that comprise the Socioeconomic Study Area, compared with the State of Maryland as a whole. In addition, employment data was compiled for each of the three corridors.

US Census ACS data was obtained at the Census Tract level to examine employment in the various industry sectors as shown in **Table 5-13**. The top five industry sectors in terms of percentage of total employment within the Socioeconomic Study Area include:

- Educational Services, and Health Care and Social Assistance (22 percent),
- Professional, Scientific, and Management, and Administrative and Waste Management Services (16 percent),
- Public Administration (10 percent),
- Arts, entertainment, and recreation, and accommodation and food services (10 percent); and
- Retail Trade (10 percent).

This data illustrates the fact that the Socioeconomic Study Area has a largely service and knowledge-based economy, which is consistent with the general nationwide trend of declining manufacturing and agriculture. While no specific impacts affecting employment are anticipated from the No-Build Alternative for this study, the No-Build Alternative does include currently planned and programmed infrastructure projects as of Project Scoping in 2017 and would be updated during Tier 2 to reflect newly planned and programmed projects that may affect the study area. Anticipated increases in travel times and delays related to growing traffic congestion forecasted to occur under the No-Build condition could have potential negative effects on economic activity. The potential strain placed upon workforce commuters and supply chain deliveries by delays in motor vehicle travel could ultimately lead to decreases in economic performance as businesses and workers look for alternate locations to operate outside of the study area, distancing themselves from the issues generated by congestion.

With a project of this magnitude, there could also be positive impacts to many of the industry sectors identified in **Table 5-13** within affected communities. Sectors dealing directly with construction, transportation and utilities, real estate, and other growth-oriented development could see economic benefits associated with a potential corridor alignment.

As shown in **Table 5-13**, employment percentages by industry sector are generally similar across all three corridors.

US Census ACS data was obtained at the Census Tract level to also determine the total number of employed/unemployed persons over the age of 16 within the various Census Tracts comprising the Socioeconomic Study Area as compared with the State of Maryland. This data, shown below in **Table 5-14**, was also compiled for the Socioeconomic Study Area as a whole and the various Census Tracts contained partially within the CARA.

Table 5-13: Employment by Industry Sector

Industry Sector	State of Maryland	Socioeconomic Study Area Tracts	Corridor 6 Tracts	Corridor 7 Tracts	Corridor 8 Tracts
Civilian employed population 16 years and older	3,040,792	149,241	41,630	39,191	30,222
Agriculture, forestry, fishing and hunting and mining	15,110 (<1%)	1,208 (1%)	553 (1%)	247 (1%)	448 (1%)
Construction	203,192 (7%)	11,429 (8%)	3,569 (9%)	2,492 (6%)	2,613 (9%)
Manufacturing	136,368 (4%)	7,419 (5%)	2,348 (6%)	2,067 (5%)	1,412 (5%)
Wholesale Trade	57,497 (2%)	3,649 (2%)	1,221 (3%)	1,230 (3%)	650 (2%)
Retail trade	292,326 (10%)	14,264 (10%)	4,487 (11%)	3,827 (10%)	2,844 (9%)
Transportation and warehousing, and utilities	137,153 (5%)	4,854 (3%)	1,883 (5%)	1,259 (3%)	957 (3%)
Information	64,760 (2%)	2,906 (2%)	717 (2%)	916 (2%)	443 (1%)
Finance and insurance, and real estate and rental and leasing	187,636 (6%)	9,513 (6%)	2,683 (6%)	2,258 (6%)	2,080 (7%)
Professional, scientific, and management, and administrative and waste management services	468,379 (15%)	23,978 (16%)	5,796 (14%)	6,399 (16%)	4,628 (15%)
Educational services, and health care and social assistance	724,995 (24%)	32,188 (22%)	8,609 (21%)	8,970 (23%)	6,069 (20%)
Arts, entertainment, and recreation, and accommodation and food services	254,958 (8%)	14,401 (10%)	3,519 (8%)	3,487 (9%)	3,152 (10%)
Other services, except public administration	165,095 (5%)	8,285 (6%)	2,118 (5%)	1,966 (5%)	1,924 (6%)
Public administration	333,323 (11%)	15,147 (10%)	4,127 (10%)	4,073 (10%)	3,002 (10%)

US Census Bureau ACS 2013-2017

Demographic data indicates that the unemployment rate within the Socioeconomic Study Area is 4.4 percent, which is lower than the State as a whole (6.1 percent). Notable unemployment rates in individual Census Tracts include: 7014 (10.4 percent) and 7313.03 (9.5 percent). Census Tract 7014 is partially within Corridor 8 and Census Tract 7313.03 is within Corridor 6. Census Tracts within Corridor 8 have the highest current estimated unemployment rate of 5.1 percent. It is important to note that Census Tracts within Corridor 8 also have the lowest total population 16 years and over and consequently the lowest employment/population ratio (60.4 percent). In contrast, Census Tracts within Corridor 6 have the lowest overall unemployment rate of 3.6 percent.

Table 5-14: Employment Statistics

Geography	Corridor	Total Population 16 years and over	Employment/Population Ratio	Employment by Population 16 years and over	Unemployment Rate	Unemployment by Population 16 years and over
Maryland	N/A	4,800,851	63.3%	3,038,939	6.1%	292,852
Socioeconomic Study Area	N/A	233,531	63.4%	149,244	4.4%	10,220
Corridor 6	N/A	62,091	65.6%	40,732	4.7%	2,918
Corridor 7	N/A	56,617	63.0%	35,669	3.6%	2,038
Corridor 8	N/A	48,221	60.4%	29,125	5.1%	2,459
Census Tracts						
7011.01	8	3233	62.5%	2021	4.9%	158
7011.02	8	6624	68.4%	4531	7.5%	497
7012	8	7047	70.7%	4982	3.0%	211
7013	8	6101	65.5%	3996	4.9%	299
7014	8	2782	50.4%	1402	10.4%	289
7023	8	4601	63.3%	2912	3.4%	156
7024.02		5481	61.1%	3349	3.8%	208
7025		4778	65.5%	3130	6.9%	330
7026.01		4203	66.0%	2774	4.8%	202
7026.02		4814	63.4%	3052	4.2%	202
7027.01	7	4111	68.6%	2820	3.5%	144
7027.02	7	2864	63.7%	1824	2.2%	63
7061.01		3388	61.6%	2087	5.7%	193
7063.01		3519	65.2%	2294	3.5%	123
7063.02		2980	66.9%	1994	3.9%	116
7064.01		5813	72.9%	4238	4.3%	250
7064.02		2593	66.4%	1722	3.8%	99
7065		4580	64.4%	2950	4.6%	211
7066	7	3914	72.8%	2849	1.5%	59
7067	7	5768	5.0%	288	0.7%	40
7307		5822	66.1%	3848	4.6%	268
7308	7	2004	63.0%	1263	5.0%	100
7309.01	7	1973	62.7%	1237	5.5%	109
7309.02	7	3354	62.1%	2083	3.1%	104
7310.02	7	2949	64.8%	1911	3.3%	97
7310.03	7	3301	71.4%	2357	2.9%	96
7310.04	7	3624	67.2%	2435	5.9%	214

Geography	Corridor	Total Population 16 years and over	Employment/Population Ratio	Employment by Population 16 years and over	Unemployment Rate	Unemployment by Population 16 years and over
7311.02	7	5847	75.6%	4420	3.3%	193
7311.03	7	4274	63.9%	2731	4.3%	184
7311.04		3391	70.6%	2394	3.1%	105
7311.05		2842	63.8%	1813	5.5%	156
7312.01		4934	66.2%	3266	4.1%	202
7312.02	6	6486	71.3%	4625	4.6%	298
7312.03	6	5564	68.1%	3789	3.0%	167
7312.04	6	5296	72.4%	3834	4.7%	249
7313.03	6	5770	61.5%	3549	9.5%	548
7313.06	6	4997	64.9%	3243	7.2%	360
7313.07	6	5133	76.2%	3911	3.8%	195
7313.10	6	4479	67.0%	3001	6.9%	309
7313.11	6	6376	72.8%	4642	3.7%	236
7516		4688	38.9%	1824	5.5%	258
9504	6	2565	50.6%	1298	3.5%	90
9505	6	2160	55.5%	1199	4.5%	97
8104	6	4706	67.3%	3167	3.9%	184
8105	6	4360	65.1%	2838	0.3%	13
8106	6, 7	4199	60.3%	2532	5.2%	218
8107	7	3057	67.5%	2063	2.6%	79
8108	7	4539	70.9%	3218	2.6%	118
8109.01	7	3988	65.9%	2628	4.4%	175
8109.02	8	2470	63.1%	1559	3.5%	86
8110	7	3826	66.1%	2529	4.9%	187
9601	8	3234	66.5%	2151	2.7%	87
9602.01	8	3463	53.1%	1839	4.3%	149
9605.01	8	4028	65.8%	2650	5.5%	222
9607	8	3010	45.0%	1355	2.7%	81
9608	8	1628	50.8%	827	8.2%	133

US Census Bureau ACS 2013-2017. The Socioeconomic Study Area represents the contiguous area extending from the northernmost CARA to the southernmost; blank "Corridor" values represent those census tracts that are not located within a CARA.

5.6 Transportation

This section includes a qualitative discussion of existing conditions and potential impacts to existing transportation services and facilities in the CARA, including roadways, public transit, railroads, air travel, and water travel. Any transportation-related impacts related to No-Build Alternative for this study would result from currently planned and programmed infrastructure projects. The No-Build Alternative would include both short-term and long-term improvements documented in the adopted Regional Constrained Long-Range Plans for transportation within the Greater Baltimore and Washington, D.C. areas as of Project Scoping in 2017. The No-Build Alternative includes existing transportation systems management/travel demand management (TSM/TDM) measures including contraflow lanes on the existing bridge, as well as any planned and funded TSM/TDM measures as of Project Scoping in 2017, such as automated contraflow lanes. The No-Build would be updated during Tier 2 to reflect newly planned and programmed projects. Qualitatively, under the No-Build Alternative increases in travel times and delays related to growing traffic congestion are anticipated and could lead to potential future negative effects for all transportation systems within the study area. Mobility and accessibility for commuters, passengers, essential services, and supply chains related to all modes (air, rail, transit, water) could each be further strained by increased inefficiencies of motor vehicle travel.

5.6.1 Corridor 6

The regional arterials within the Corridor 6 consist of MD 100 and MD 177 on the Western Shore and MD 213 on the Eastern Shore. These arterials provide connections to the north and south and facilitate the intercity movement of goods, services, and people. On the Western Shore, local, county-owned roadways provide connections to residential subdivisions, smaller shopping centers, as well as government and educational facilities. On the more sparsely populated Eastern Shore, local roadways provide direct connections to single family homes, farm fields and agricultural support businesses, marinas, and government and educational facilities.

Selecting Corridor 6 for the construction of a new crossing and limited access highway to connect to existing surface roadway infrastructure would present challenges to the existing transportation systems. The surface roadway network present on both the Western Shore and Eastern Shore would need to be upgraded and potentially re-routed to accommodate new traffic volumes. Alternately, the alignment of the crossing and associated limited access highway could be adjusted to minimize disruption of existing infrastructure. Such accommodations could be made through grade separated interchanges, bridges, and limiting the number, location, and type of access points. Short term construction impacts to transportation routes may occur during construction, including temporary street closures and detours.

On the Western Shore, this area of Anne Arundel County is not served by any fixed bus routes. On the Eastern Shore, bus service is provided by Maryland Upper Shore Transit (MUST), a collaborative public transportation effort between Delmarva Community Transit and Queen Anne's County. The service provides fixed and deviated fixed route services to the general public. Special services are available for people with disabilities or who are unable to use fixed routes. Corridor 6 is serviced by MD 2 connecting Centerville and Stevensville; MD 3 connecting Centerville and Annapolis; and MD 4 connecting Rock Hall, Chestertown, Centerville, and Easton. Rock Hall provides a seasonal tram service during the summer.

Selecting Corridor 6 for the construction of a new crossing would potentially provide new opportunities for the introduction of bus service across the Chesapeake Bay to connect system users with employment,

commercial, and recreational opportunities. Existing transit services on the Eastern Shore may need to be re-routed owing to the alignment of the new limited access highway. The new roadway would also provide opportunities for park and ride facilities that could support existing and new bus transit system users.

On the Western Shore, there are no freight rail lines within Corridor 6. On the Eastern Shore, the Maryland and Delaware Railroad operates two short lines that originate in Townsend, Delaware when they connect to a trunk line operated by the Delmarva Central Railroad. The northern short line connects Townsend, Massy, Lynch, and Worton. The southern railroad extends from Townsend and connects Massey, Millington, and Centreville. Selecting Corridor 6 for the construction of a new crossing would likely have minimal impact on freight and rail traffic. A new crossing would provide residents of the central Eastern Shore additional access to MARC and Amtrak via the Northeast Corridor, located outside of the western end of Corridor 6. A crossing within Corridor 6 could be aligned to avoid any conflict with existing rail lines.

Commercial shipping traverses the Chesapeake Bay north to south through the corridor. Military ships associated with the Naval Academy and other national security operations occasionally travel the shipping channel as well. There are a variety of public and private docks and wharfs on the Western Shore and Eastern Shore. On the Western Shore these facilities offer opportunities for recreational sailing, boating, fishing and charter fishing. Notable facilities on the Western Shore are Ventnor Marina and Hammock Island on Main Creek, Geisler Point Marina on Back Creek and Locust Cove Marina on Warf Creek. The Eastern Shore maintains a more robust commercial fishing industry. Rock Hall Harbor is home to a number of commercial and charter fishing boats. The harbor includes a variety of eateries and recreational support businesses such as outfitters and tackle shops.

Any impacts to travel by water would likely be during construction and temporary in nature. Construction would be scheduled and coordinated so as to minimize any impact to commercial shipping and fishing vessels. Recreational boating activities are not likely to be impacted.

5.6.2 Corridor 7

The regional arterial roads within Corridor 7 consist of US 50/US 301 which connects to MD 2 and MD 450 on the Western Shore and MD 8 and MD 18 on the Eastern Shore. US 50/301 spans the Chesapeake Bay on the existing Bay Bridge. The arterial roadways on either side of the span provide connections to the north and south and facilitate the travel of goods, services, and people. On the Western Shore, US 50/301 ultimately connects to I-97 which connects to the I-95 corridor. MD 450 and US 50 extend to I-495 (Capital Beltway). On the Eastern Shore, US 50/301 splits outside the boundaries of Corridor 7. US 50 provides access to Delaware and Maryland beach towns. On the Western Shore, county-owned local roadways provide connections to residential subdivisions, smaller shopping centers, as well as government and educational facilities. On the more sparsely populated Eastern Shore, county-owned local roadways provide direct connections to single family homes, farm fields and agricultural support businesses, marinas, and government and educational facilities.

Owing to the presence of existing infrastructure across the Chesapeake Bay, selecting Corridor 7 for the construction of a new crossing may require fewer upgrades and alterations to existing transportation systems. The arterial surface roadway network present on both the Western Shore and Eastern Shore provides east-west connections across the Bay via the existing crossing. Selecting Corridor 7 presents the opportunity for utilizing existing roadway infrastructure, depending on the specific alignment chosen. This

may result in impacts to the travelling public during construction. By comparison, selecting either Corridor 6 or 8 would more likely require the construction of new roadway or new alignments.

On the Western Shore, Annapolis Transit operates six fixed bus routes, as well as various shuttle and ADA paratransit services in the City of Annapolis. Anne Arundel County operates two Annapolis Connector routes within Corridor 7. The Gold Route extends from Anne Arundel Community College in Arnold to Edgewater. The Yellow Route connects a variety of commercial and shopping centers in the Annapolis vicinity. Anne Arundel County also operates the regional South County Connector which connects a number of small towns with the Westfield Mall. On the Eastern Shore, bus service is provided by MUST, a collaborative public transportation effort between Delmarva Community Transit and Queen Anne's County. MD 1 connects Kent Island, Grasonville, Centreville and Easton. Route 2 connects Stevensville and Centreville. Additionally, a variety of private companies offer on-demand transportation across the Bay Bridge.

Selecting Corridor 7 for the construction of a new crossing would potentially augment existing opportunities to introduce bus service across the Chesapeake Bay to connect system users with employment, commercial, and recreational opportunities. The existing public transportation routes on the Western Shore and Eastern Shore would likely experience minimal impact.

There are no freight lines within the boundaries of Corridor 7. The closest rail line on the Eastern Shore is a short line that extends from Townsend to Centreville. The railroad is operated by the Maryland and Delaware Railroad. Selecting Corridor 7 for the construction of a new crossing would likely have minimal impact on rail traffic. Any new infrastructure associated with a crossing in Corridor 7 would be aligned to avoid conflicts with existing rail lines.

Bay Bridge Airport in Stevensville is owned and operated by Queen Anne's County. The airport consists of one paved runway that extends 2,900 feet. The airport is primarily used for recreational and instructional flights. Selecting Corridor 7 would have the potential to affect the operation of the Bay Bridge Airport. Construction of a new crossing west of the airport would affect the existing airfield traffic pattern.

There are a variety of public and private docks and wharfs on both shores of the Chesapeake Bay. These facilities offer opportunities for recreational sailing, boating, fishing and charter fishing. A notable facility is the marina at Sandy Point SP. The Bay Bridge Marina is just south of the existing bridge on the Eastern Shore. The marina features a variety of eateries and recreational support businesses such as outfitters and tackle shops.

Any impacts to travel by water would likely be during construction and temporary in nature. Construction would be scheduled and coordinated so as to minimize any impact to commercial shipping and fishing vessels. Recreational boating activities are not likely to be impacted.

5.6.3 Corridor 8

The regional arterial roads within the Corridor 8 consist of US 50/301 and MD 2 on the Western Shore and US 50 on the Eastern Shore. The arterial roadways provide connections to I-495 and points south on the Western Shore as well as the Delaware and Maryland beach towns on the Eastern Shore. These routes facilitate the travel of goods, services, and people. The area of the Western Shore within Corridor 8 contains a variety of connector roads, consisting of MD 2, MD 214, MD 268, and MD 424. These roadways move people and services from residential to commercial areas and facilitate access to and from the

arterial, Interstate, and local road systems. Connector roads on the Eastern Shore include MD 33, which links Tilghman Island to Easton through St. Michaels. A variety of county-owned local roadways provide direct connections to homes, farm fields and agricultural support businesses, marinas, and government and educational facilities.

Selecting Corridor 8 for the construction of a new crossing and limited access highway to connect to existing surface roadway infrastructure would have likely impacts to the existing transportation facilities. The surface roadway network present on both the western shore and Eastern Shore would potentially need to be modified to accommodate the new roadway and potentially increased traffic volumes. Accommodations could be made through grade separated interchanges, bridges, and limiting the number, location, and type of access points. Short term construction impacts to transportation routes may occur during construction, including temporary street closures and detours.

On the Western Shore, Anne Arundel County operates two routes within Corridor 8. The Gold Route extends from Anne Arundel Community College in Arnold to Edgewater. The regional South County Connector which connects a number of small towns, including Edgewater, with the Westfield Mall. On the Eastern Shore, bus service is provided by MUST, a collaborative public transportation effort between Delmarva Community Transit and Queen Anne's County. Route 1 connects Kent Island, Grasonville, Centreville and Easton. Route 4 connects Rock Hall and Easton. The St. Michaels Shuttle connects the resort town with Easton. Existing transit services on both shores may need to be re-routed owing to the alignment of the new limited access highway. The new roadway would also provide opportunities for park and ride facilities that could support existing and new bus transit system users.

There are no freight or passenger rail lines within the boundaries of Corridor 8. The closest rail line on the Eastern Shore, is a short line that extends from Townsend to Centreville operated by the Maryland and Delaware Railroad. Selecting Corridor 8 for the construction of a new crossing would likely have minimal impact on rail traffic.

Lee Airport is a public use airport in Edgewater. The airport includes one paved runway and is primarily used for recreational and instructional flights. Easton Airport is a public use airport owned by Talbot County situated on US 50, north of Easton. The airport includes of two paved runways and an air traffic control tower. The airport is serviced by several on-call charter jet companies. Recreational, agricultural, and instructional flights also originate from the airport. Selecting Corridor 8 would have the potential to affect the operation of Lee Airport in Edgewater on the Western Shore and Easton Airport on the Eastern Shore. Construction of any limited access highway associated with a new crossing would have the potential to affect the existing airfield traffic pattern of these airports.

There are a variety of public and private docks and wharfs on both shores of the Chesapeake Bay. On the Western Shore, these facilities offer opportunities for recreational sailing, boating, fishing and charter fishing. Notable facilities on the Western Shore are the Rhode River Marina, Holiday Hill Marina, Blue Water Marina, and Carrs Wharf. There are fewer docks and wharfs on the Eastern Shore, mostly limited to private boat slips.

Any impacts to travel by water would likely be during construction and temporary in nature. Construction would be scheduled and coordinated so as to minimize any impact to commercial shipping and fishing vessels. Recreational boating activities are not likely to be impacted.

5.6.4 Transportation Summary

Selecting Corridor 7 for the construction of a new crossing may require fewer upgrades and alterations to existing transportation systems and presents the opportunity for utilizing existing roadway infrastructure, depending on the specific alignment chosen. The arterial surface roadway network present on both the Western Shore and Eastern Shore provides east-west connections across the Bay via the existing crossing. By comparison, selecting either Corridor 6 or 8 would more likely require the construction of new roadway or new alignments.

Construction in Corridor 6 would require new or existing transit services on both shores to be routed/re-routed along the alignment of the new limited access highway and would provide opportunities for park and ride facilities that could support existing and new bus transit system users with enhanced access to employment, commercial and recreational centers. Construction in Corridor 7 would potentially augment existing opportunities to introduce bus service across the Chesapeake Bay to connect system users with employment, commercial, and recreational opportunities and the existing public transportation routes on the Western Shore and Eastern Shore would likely experience minimal impact. Construction in Corridor 8 would require new or existing transit services on both shores to be routed/re-routed along the alignment of the new limited access highway and would provide opportunities for park and ride facilities that could support existing and new bus transit system users with enhanced access to employment, commercial and recreational centers.

In Corridor 6, a new crossing would provide residents of the central Eastern Shore additional access to MARC and Amtrak via the Northeast Corridor. Construction in Corridor 7 or Corridor 8 would likely have minimal impact on rail traffic.

No air travel operations are affected in Corridor 6. Selecting Corridor 7 would have the potential to affect the operation of the Bay Bridge Airport - construction of a new crossing west of the airport would affect the existing airfield traffic pattern. Selecting Corridor 8 would have the potential to affect the operation of Lee Airport in Edgewater on the Western Shore and Easton Airport on the Eastern Shore - construction of any limited access highway associated with a new crossing would have the potential to affect the existing airfield traffic pattern of these airports.

With all corridors, any impacts to travel by water would likely be during construction and temporary in nature.

5.7 Children's Health and Safety

Executive Order (EO) 13045, *Protection of Children from Environmental Health Risks and Safety Risks* requires federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children. In this case "environmental health and safety risks" are defined as "risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to)".

The most likely locations of potential effects on children would be at schools and parks located within the CARA where there are outdoor activity facilities for children. Potential impacts to communities with children could result from a new crossing within each CARA, such as a roadway alignment crossing through existing communities, creating potential concern for traffic safety in relation to pedestrian and bicycle

travel by children. Homes and facilities located closer to a roadway alignment would also be a likely location for potential effects related to air quality and noise, but specific impacts cannot be determined at this level of detail.

Each of the three corridors contain multiple parks and recreational facilities that could potentially be impacted by an alignment in the corridor, as discussed in **Section 5.1.1.1**. Corridor 6 has eight facilities, Corridor 7 has 14 facilities, and Corridor 8 has 10 facilities. While Tier 2 alignments could potentially be identified in each corridor to avoid some or all these parks and recreational facilities, it is likely that one or more of the facilities would be impacted given their prevalence and spatial distribution throughout each of the corridors.

Each of the three corridors contain K-12 public schools that could potentially be impacted by an alignment in the corridor, as discussed in **Section 5.1.1.2**. Corridor 6 contains five schools, Corridor 7 contains nine schools, and Corridor 8 contains seven. Although all of the schools are located adjacent to roadways that may be impacted, alternate alignments could potentially be developed to avoid impacts to the schools in each of the corridors.

The study's air quality and noise impacts have also been evaluated as a potential health and safety risk to children. As noted in the **Air Quality Technical Report**, the project would not cause any violations of national ambient air quality standards established by the USEPA to protect human all health and welfare, including children. The Noise Technical Report identifies the locations of potentially noise sensitive areas that exist within each of the three CARA, but specific impacts to populations and noise sensitive land uses are not assessed during Tier 1.

Since the Tier 1 Study only identifies general corridors for a potential new Bay crossing, the discussion of impacts is performed at a qualitative level. Specific impacts to resources are not known during the Tier 1 analysis because specific roadway alignments are not included as part of the CARA. Further evaluation of resources and potential impacts to the health and safety risks for children would be further evaluated in a potential future Tier 2 study.

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APPENDIX A COMMUNITY FACILITIES MAPPING

APPENDIX B

LAND USE/LAND COVER MAPPING