



ANNE ARUNDEL COUNTY

Transportation Data Book



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FOREWORD

The Baltimore region is a seven-county area that includes the City of Baltimore and Anne Arundel, Baltimore, Carroll, Harford, Howard and Queen Anne's counties. The Baltimore Metropolitan Council (BMC) is the regional council of governments and hosts the Baltimore Regional Transportation Board (BRTB), the federally designated metropolitan planning organization (MPO) for the region.

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BMC works with the region's elected executives to identify mutual interests and develop collaborative strategies, plans and programs that help improve our quality of life and economic vitality. The organization supports local governments by coordinating efforts in a range of policy areas including transportation planning, emergency preparedness, housing, cooperative purchasing, environmental planning, and workforce development.

The BRTB serves as an invaluable link between federal funds and regulations, state and regional decision-makers, transportation planning entities, project and initiative stakeholders, and the public. The forum and resources of BMC allow for thoughtful regional planning efforts of short and long-term projects in our region.



Anne Arundel County Summary



Photo Sources (clockwise from top left): Grandview Aviation, Annapolis Maritime Museum, State of Maryland Tourism, State of Maryland Tourism, State of Maryland Tourism, Maryland.com



Anne Arundel, boasting the highest population in the Baltimore region after the City of Baltimore and Baltimore County, is forecasted for continued growth. The highest growth areas will be around Annapolis, Odenton, and Edgewater, while the US50 corridor will see a decline. Anne Arundel County's population is predominantly white and significantly less diverse than the City of Baltimore and Howard County. The housing market consists of single, detached units occupied by owners, and over one quarter of the total housing stock are rental units (26.2%). Based on the last decade of residential building permit trends, it's likely the stock of single-family unit homes will increase while multi-family units will decrease, deepening housing affordability issues in the County, where almost 30% of all households "cost burdened" (page 17).

Almost 60% of Anne Arundel County residents work within the county, a higher number than that of the region. However, about 41% of jobs in the county are held by non-residents. The vast majority of workers commute alone; in the past decade, transportation concerns have arisen in the east-west corridors due to the major growth around the BWI Airport, Arundel Mills, and Fort George G. Meade.

With the potential adoption of Anne Arundel's first county-wide transportation master plan, local stakeholders are seeking to explore multimodal transportation systems. The county is also aiming for a Vision Zero target by 2040 of zero vehicle

occupant, bicycle, and pedestrian fatalities annually. Previous studies (such as the Major Intersections and Important Facilities Study of 2016) identified major constraints to roadway investments, underscoring the future needs for bicycle, pedestrian, and public transit investment, decreasing the need for SOV trips as advanced by the 2013 Anne Arundel County Pedestrian and Bicycle Master Plan. Decreasing the Vehicle Miles Traveled and increasing opportunities such as Park and Ride or connections to public transit will support county-wide objectives, such as improving air quality in the county.

01

Who We Are & Where We Live



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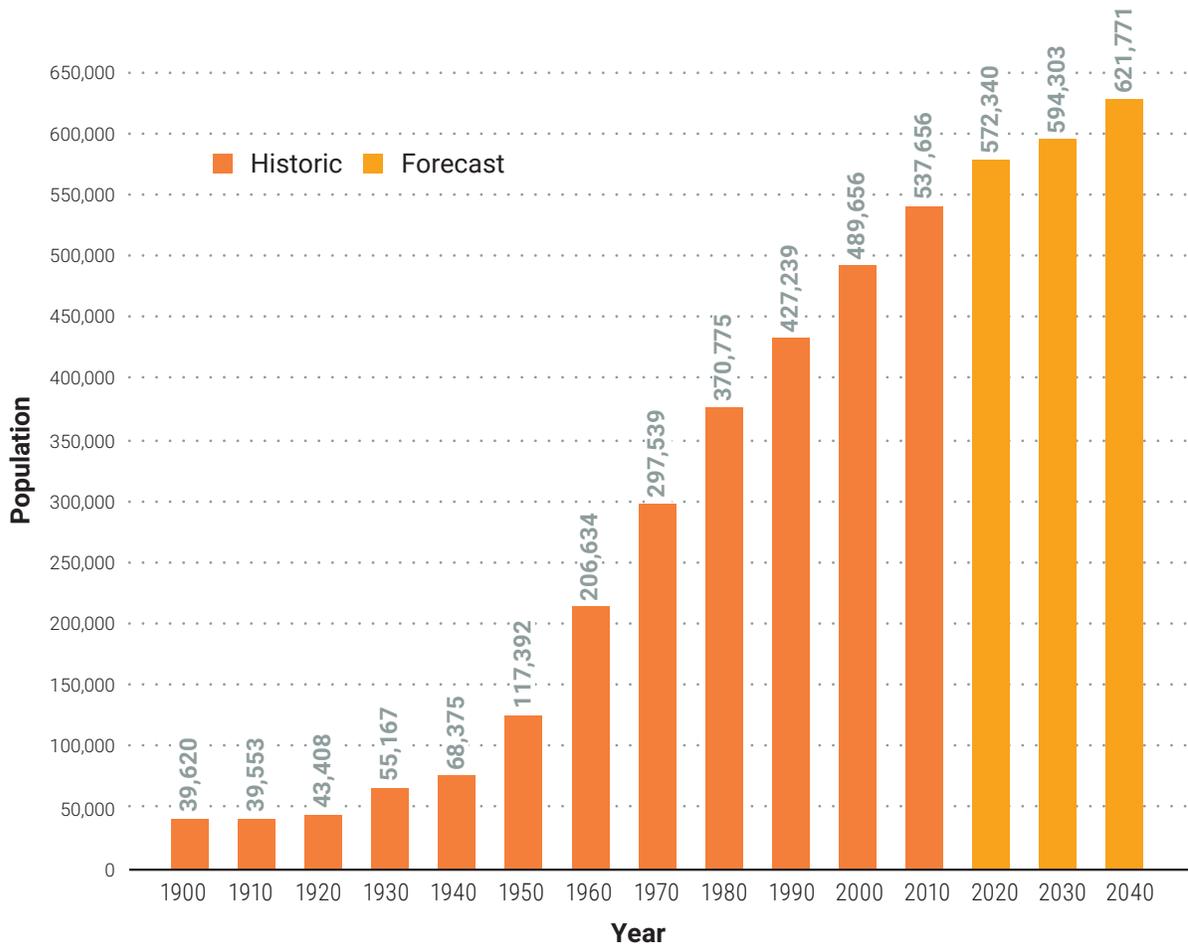


Population

POPULATION (1900–2040)

The population of the entire Baltimore region has nearly quadrupled in size since 1900, but the growth has been uneven. During this past century, and especially since World War II, the counties surrounding the City of Baltimore have grown significantly with the completion of the interstate highway system. Anne Arundel County has grown from 39,600 in 1900 to around 550,000 residents as of 2015. Only the City of Baltimore

and Baltimore County have larger total populations. Much of the postwar boom can be attributed to the growth in defense and military industries, with the U.S. Naval Academy located in Annapolis and other government facilities around Fort Meade.



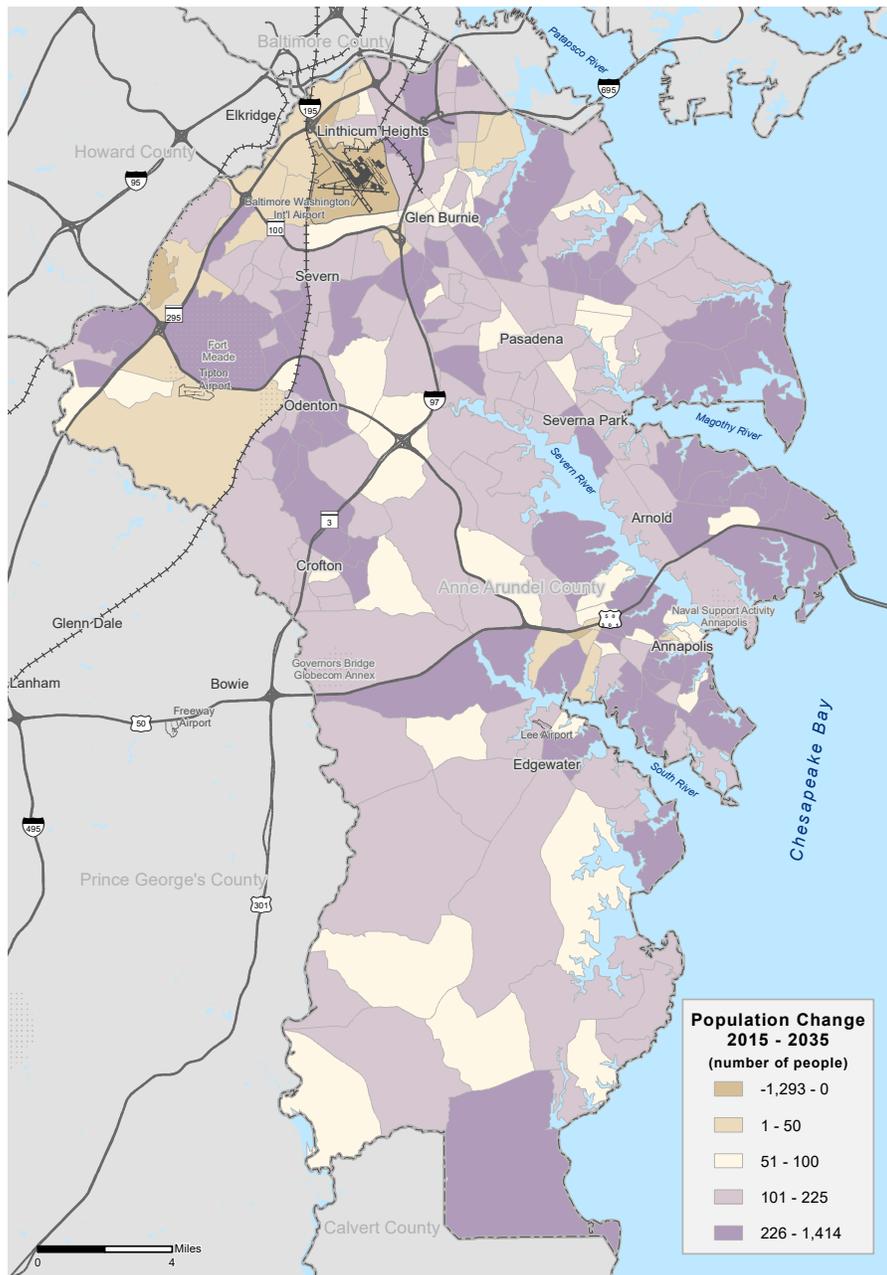
Note: Data for years 2020-2040 for Baltimore region jurisdictions are from Round 9 Cooperative Forecasts, June 2018.
Source: U.S. Census Bureau, Decennial Census Data; Maryland Department of Planning; BRTB - Cooperative Forecasting Group.



GEOGRAPHIC CHANGE IN POPULATION

Changes to the future population in Anne Arundel County will continue around traditional growth centers and planned growth areas of the County. The areas surrounding Annapolis, Odenton

and Edgewater will increase in population while Glen Burnie, areas directly north of Annapolis and areas along the US50 corridor may see a slight decline in population.



Note: Limited data resolution may result in some distortions in interpreting this data.

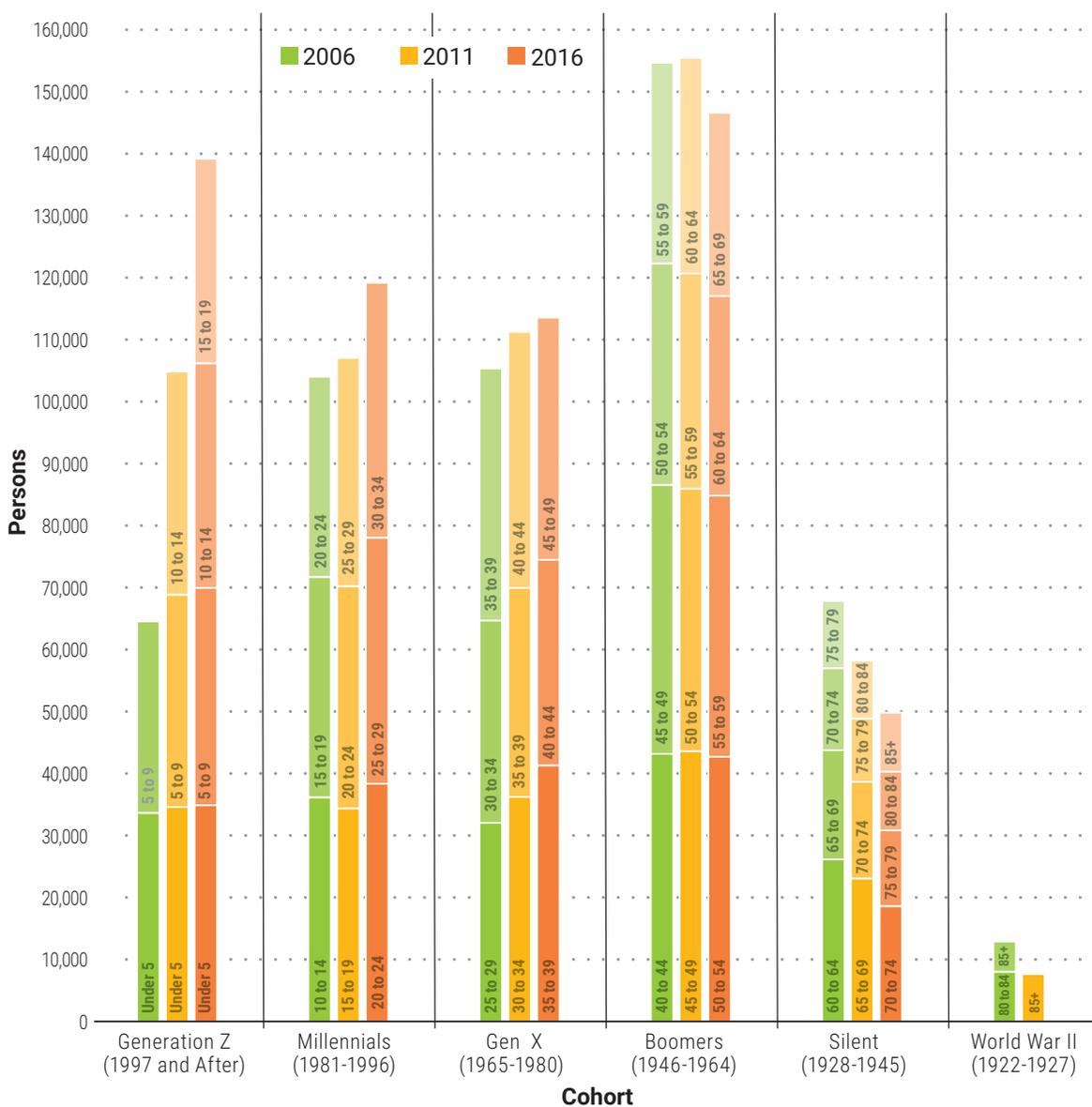
Source: BMC's Cooperative Forecasting Group Round 9 data by Transportation Analysis Zone, June 2018.



POPULATION CHANGE OVER PAST 10 YEARS BY COHORT

The age profile of Anne Arundel County has been stable over the past ten years. The chart below illustrates that Generation Z saw the most significant change from 2006 to 2016, while the Boomers have

consistently been the largest age cohort across this time period.



Source: 2006, 2011, and 2016 American Community Survey, 1-Year-Estimates

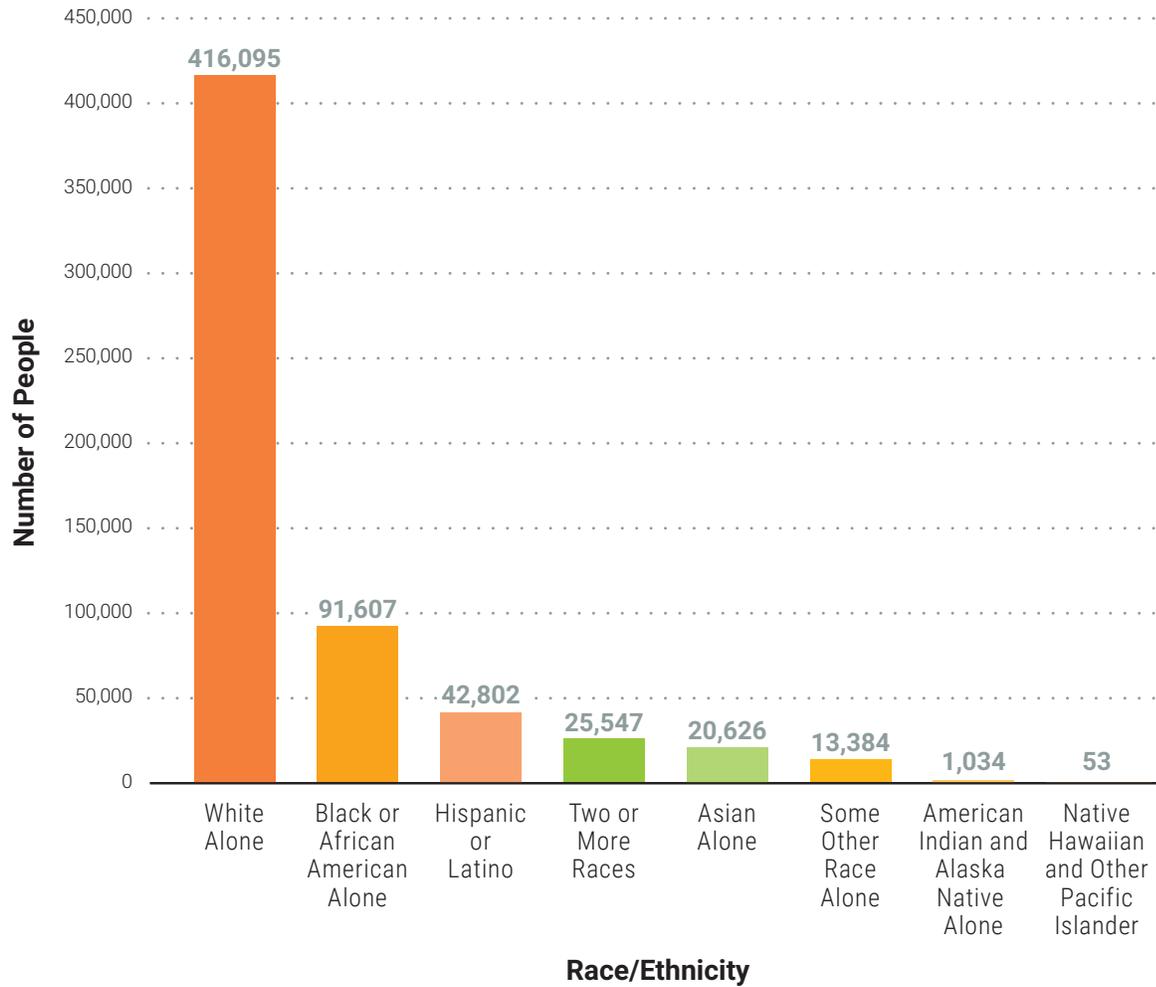


Race and Ethnicity

RACE AND ETHNICITY PROFILE OVER PAST 10 YEARS

Anne Arundel County is predominantly White (73.2%). Black or African Americans are 16.1% of the population. Hispanic or Latino residents are the third highest category with 7.5% of the population. There is also a small Asian population in the county (3.6%), while 4.5% of the population is reported as “Two or more races” and 2.4% as “Some other race alone.” This composition

mirrors that of several of the other counties in the region, such as Baltimore, Harford, and Queen Anne’s Counties; it is significantly less diverse than the City of Baltimore and Howard County.



Source: U.S. Census Bureau, 2016 American Community Survey, Supplemental 1-Year Estimates, Tables K200201 and K200301.

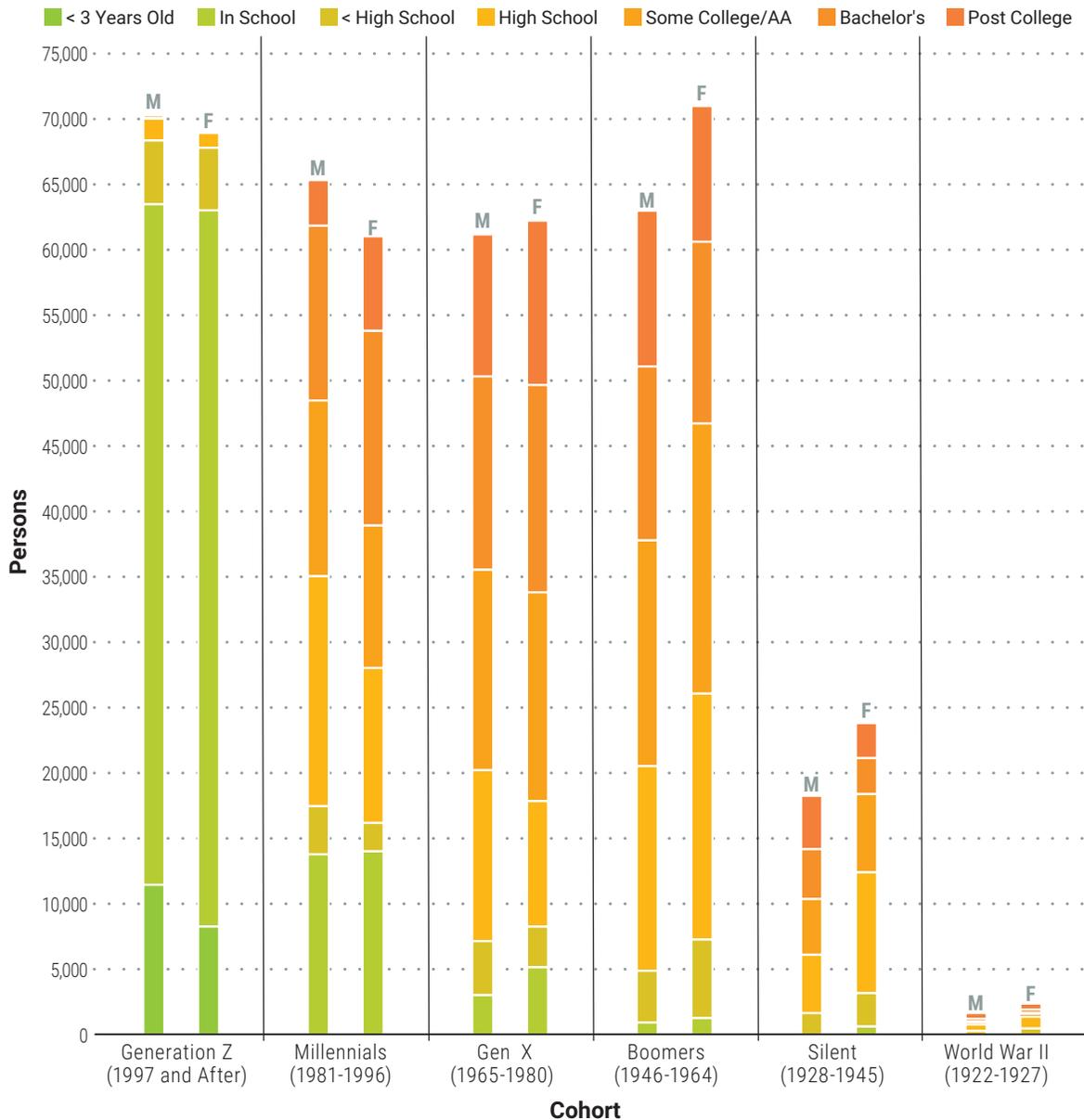


Education

EDUCATION BY GENERATION COHORT

Nearly half of Millennials, and a majority of Generation X's and Baby Boomers in Anne Arundel County have more than a high school degree; a small fraction of these age cohorts hold advanced degrees. This profile is similar to what is seen in the City of Baltimore, Carrol County, Harford County, and Baltimore County; it differs

from that of Howard County, where the proportion of people with advanced degrees is significantly higher. This is a snapshot of education as of 2016 and does not encompass Millennials that are currently pursuing and on track toward obtaining their degrees.



Source: U.S. Census Bureau, 2016 American Community Survey, 1-Year Estimates.

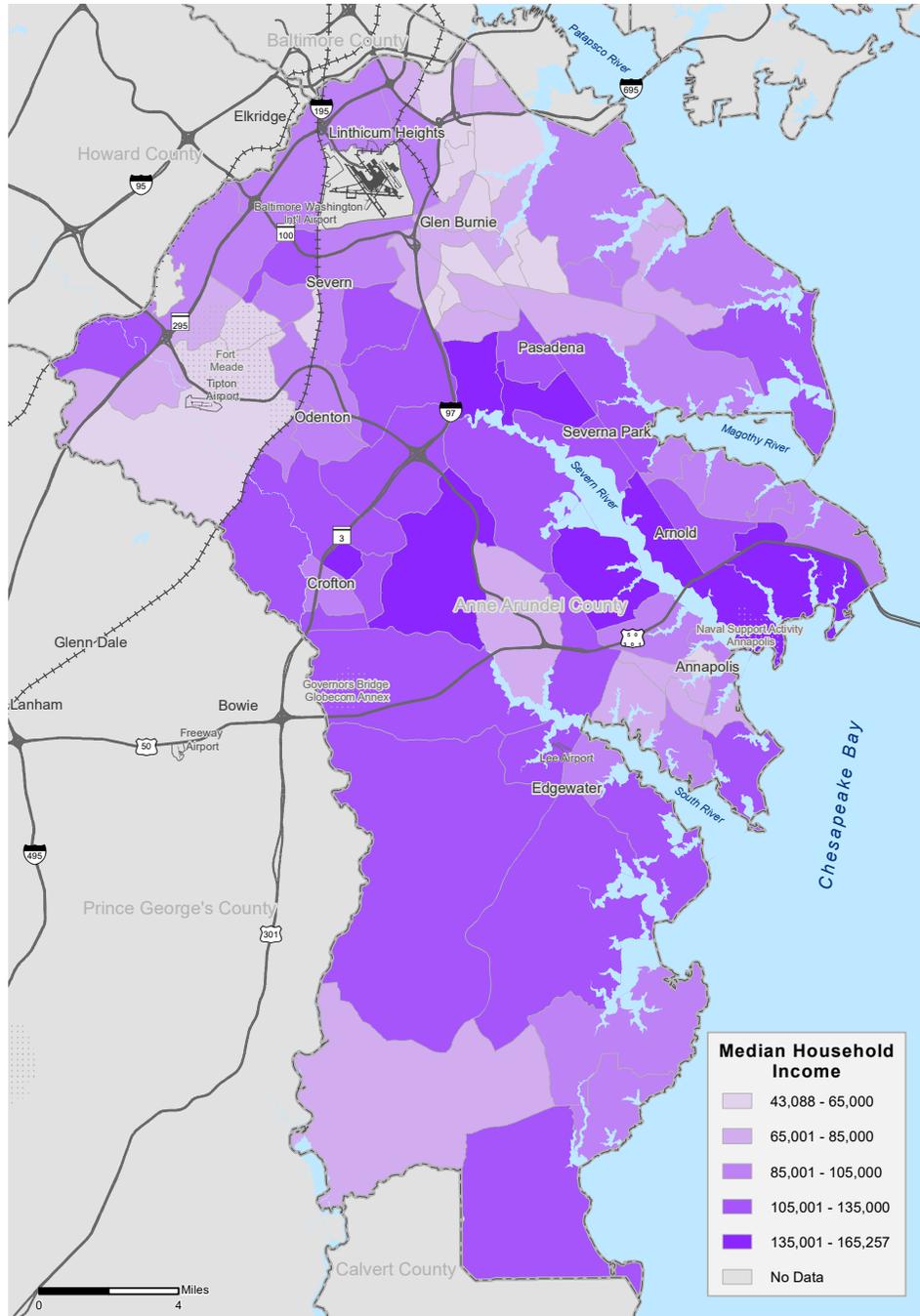


Income

HOUSEHOLD INCOME

Median household incomes are highest in the area surrounding Annapolis, such as Parole, Highland Beach, and Arnold. Crownsville and Severna Park also have

areas of affluence, with median household incomes of \$135,000 to \$165,257.



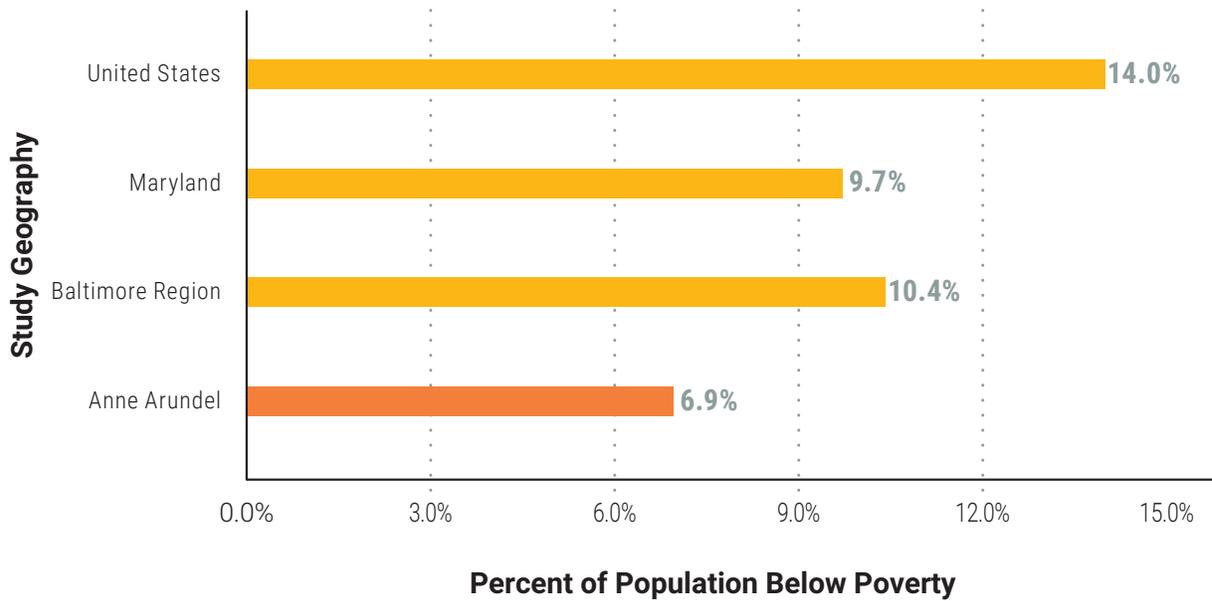
Note: Limited data resolution may result in some distortions in interpreting this data.

Source: American Community Survey 5 Year Estimates 2012-2016: Table B19013.



POVERTY RATE

Anne Arundel County has a poverty rate of 6.9% that is well below that of the Baltimore region (10.4%), as well as that of the state of Maryland as a whole (9.7%), and the United States (14.0%).



Note: Poverty status is not determined for: unrelated individuals under age 15; people living in college dormitories; people living in institutional group quarters.

Source: U.S. Census Bureau, 2016 American Community Survey, 1-Year Estimates

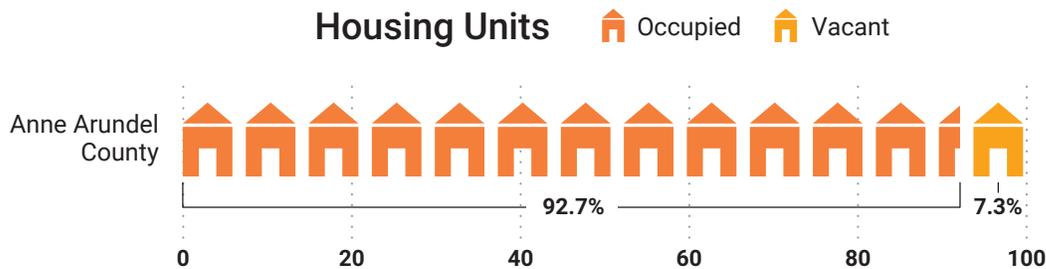


Housing

HOUSING OCCUPANCY

Anne Arundel County has a total of 223,266 housing units. There are 206,956 occupied units (92.7%), leaving 16,310 units vacant (7.3%). The regional vacancy rates range from the lowest

of 3.1% in Carroll County to the highest of 19.1% in the City of Baltimore. The average vacancy rate for the entire region is 10.0%.



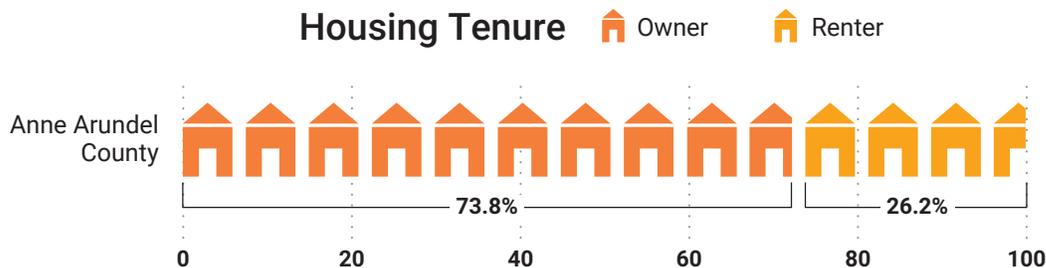
Source: U.S. Census Bureau, 2016 American Community Survey, 1-Year Supplemental Estimates.

Note: Vacant housing units include those as defined here: <https://www.census.gov/housing/hvs/definitions.pdf>

HOUSING TENURE

Of the occupied units in Anne Arundel County, 152,831 units are occupied by owners while 54,125 units are occupied by renters. The average rate of renter occupied units for the Baltimore-Columbia-Towson region is 34.7%, with

the lowest of 18.3% in Carroll County and the highest of 54.3% in the City of Baltimore.



Source: U.S. Census Bureau, 2016 American Community Survey, 1-Year Supplemental Estimates

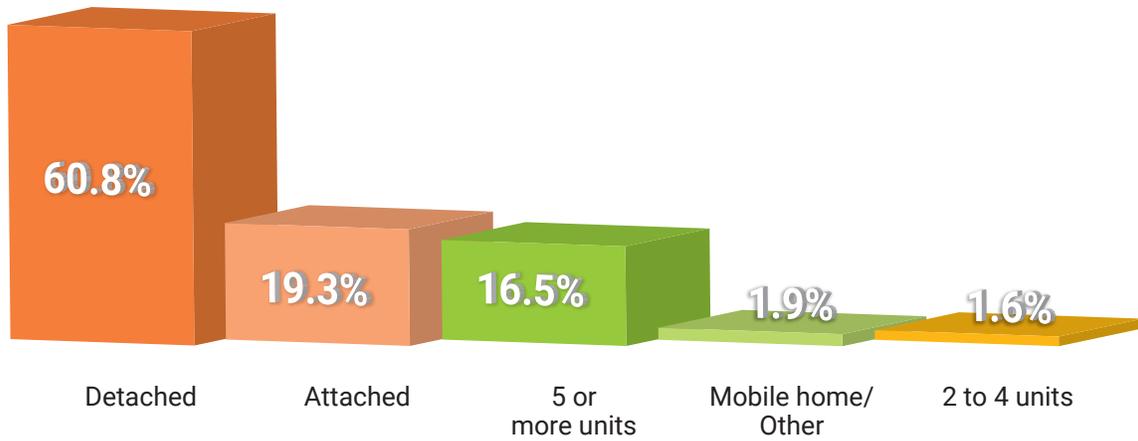


HOUSING TYPE

The majority of housing units (60.8%) in Anne Arundel County are single, detached units, totaling 135,638 units. There are 43,014 single, attached units which include townhouses or duplexes. Approximately 16.5% of the housing stock is made up of multi-unit apartment complexes of five or

more units (36,786 units). A small proportion of the housing stock are mobile homes (1.9% or 4,250 units) or apartments of two to four units (1.6% or 3,578 units). This housing profile is similar to some of the other counties in the region, such as Howard, Baltimore, and Harford.

Housing Type 2016



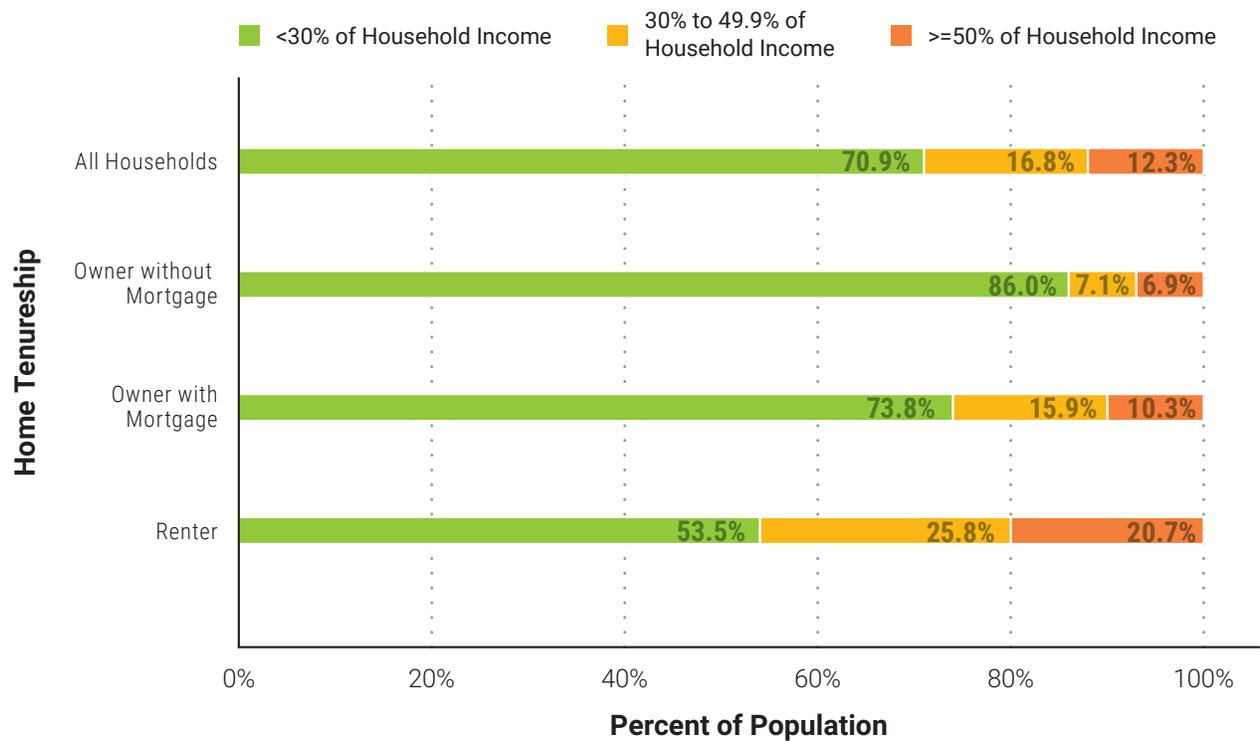
Source: U.S. Census Bureau, American Community Survey 1-Year Estimates.



MONTHLY HOUSING COSTS

In Anne Arundel County, over 70% of households spend less than 30% of their household income on housing. The 30% threshold is a standard to estimate whether housing costs are burdensome. Those paying over 30% of their gross income on housing are considered “cost burdened.” Those who spend more than 50% are considered “severely cost burdened.” Approximately 17% of Anne Arundel households are cost burdened,

and another 12% are severely cost burdened. Homeowners fare better than renters overall, with renters in the county facing a heavy burden of expensive housing options relative to their income. Over a quarter of all renters are cost burdened, and another fifth are severely cost burdened. Refer to page 15 for the number of renters compared to owners in the county.



Source: U.S. Census Bureau, American Community Survey 1-Year Estimates.

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Where We Work



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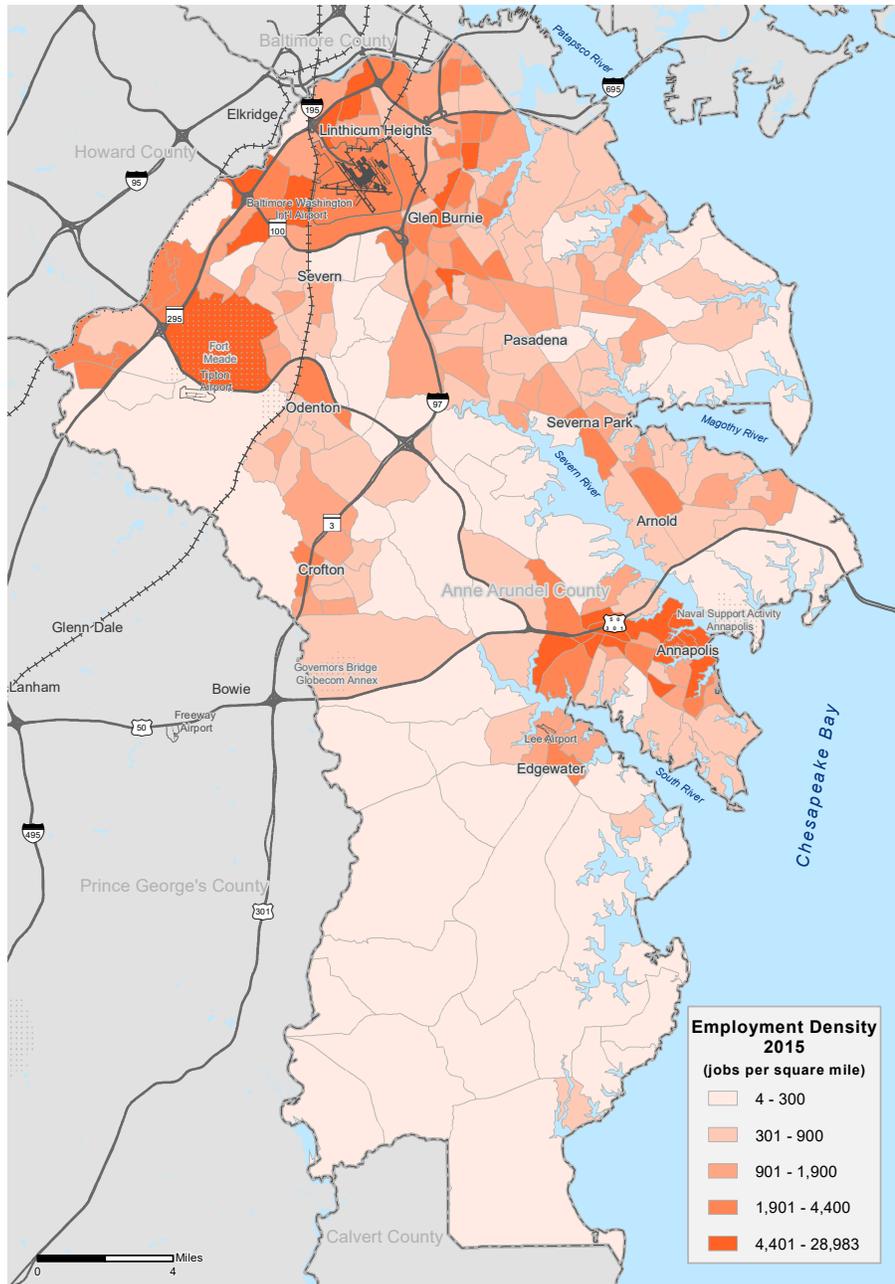


Employment Distribution

EMPLOYMENT DENSITY BY TAZ

Most of the jobs in Anne Arundel County are concentrated around BWI and the area in and surrounding Annapolis.

Less employment density is seen in the southern portion of the county outside Edgewater.



Data Source: BRTB Cooperative Forecasting Group Round 9 data by Transportation Analysis Zone.



Top Employers

TOP TEN EMPLOYERS

RANK	EMPLOYER	BUSINESS DESCRIPTION	EMPLOYEES
1	Ft. George G. Meade**	Military installation	54,000
2	Northrop Grumman	Electronic surveillance products	8,465
3	Anne Arundel Health System	Medical services	4,000
4	University of Maryland Baltimore Washington Medical Center	Medical Services	3,500
5	Maryland Live! Casino	Casino gaming	2,615
6	Southwest Airlines	Airline	2,530
7	U.S. Naval Academy/Naval Support Activity**	Higher education	2,340
8	Booz Allen Hamilton	Strategy management, technology services	2,100
9	Anne Arundel Community College	Higher education	1,940
10	Allegis Group	HQ/technology and admin placement	1,500

Excludes post offices, state and local governments, national retail and national foodservice; includes higher education.

** Data from Anne Arundel Economic Development Corporation & Maryland Department of Commerce, "Brief Economic Facts" accessed 9/2018.*

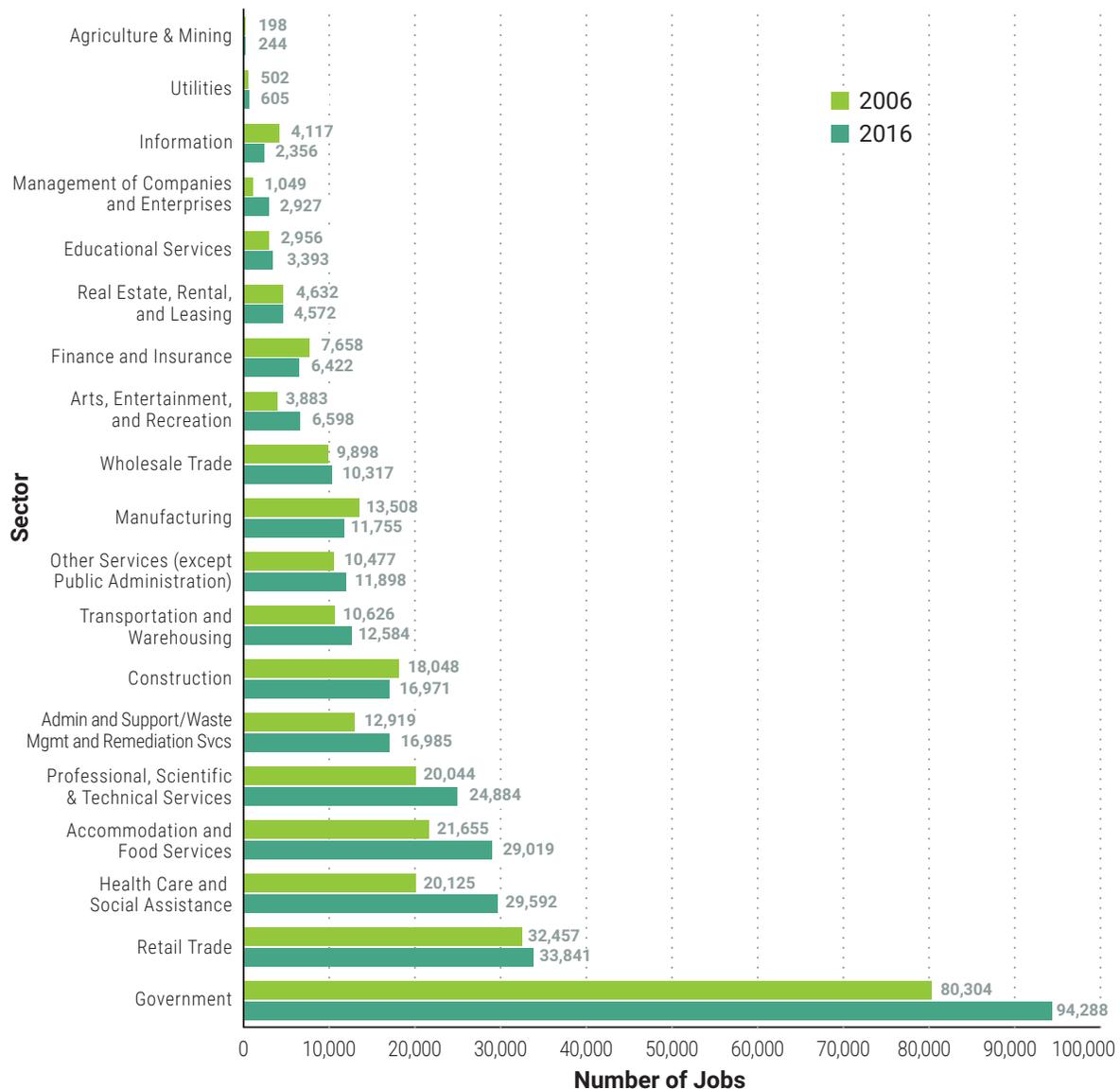
*** Employee counts for federal and military facilities exclude contractors to the extent possible; embedded contractors may be included.*



EMPLOYMENT DISTRIBUTION BY SECTOR/TOTAL JOBS PER SECTOR

Government jobs are the largest single employment sector in Anne Arundel County, at 29% of all jobs. Retail trade; health care and social assistance; accommodation and food services; and professional, scientific, and technical services round out the top five industries. The sectors that have seen the highest growth in the past 10 years are: government; health care

and social services; accommodation and food services; professional, scientific, and technical services; and administration and support/waste management and remediation services. Anne Arundel County has added 44,090 jobs from 2006 to 2016, which is more than any other county in the region.



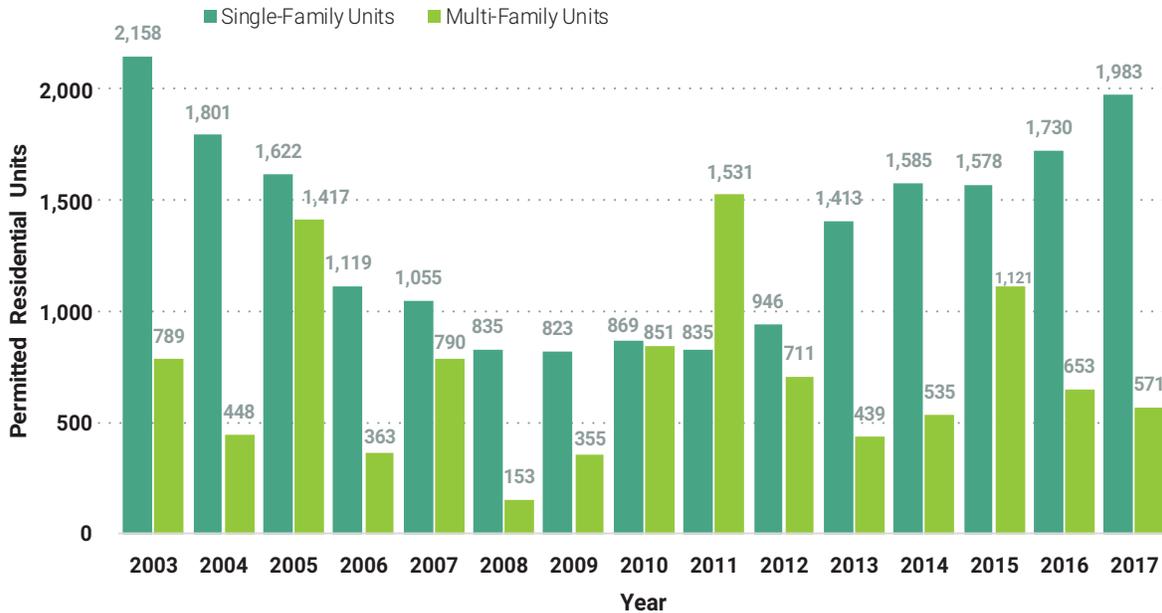
Source: Emsi, 2018.4.

Construction Industry

NEW RESIDENTIAL BUILDING PERMITS

Anne Arundel County has seen three spikes in the number of multi-family units permitted between 2003 and 2017: first in 2005 (1,417), again in 2011 (1,531), and

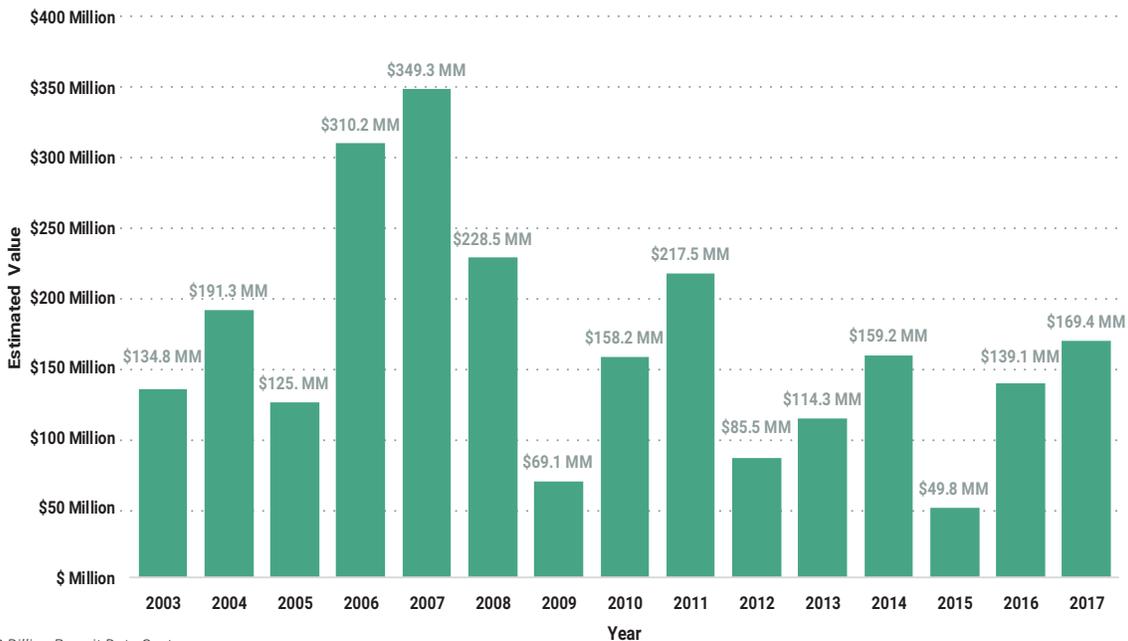
finally in 2015 (1,578). In this 14-year period, we can see the steady recovery of the single-family housing market following the Great Recession in 2008.



NEW NON-RESIDENTIAL BUILDING PERMITS

Between 2003 and 2017, the value of new non-residential permits issued in Anne

Arundel County has fluctuated between \$50 million and \$350 million, averaging at \$166.7 million.



Source: BMC Billing Permit Data System.

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How We Get Around



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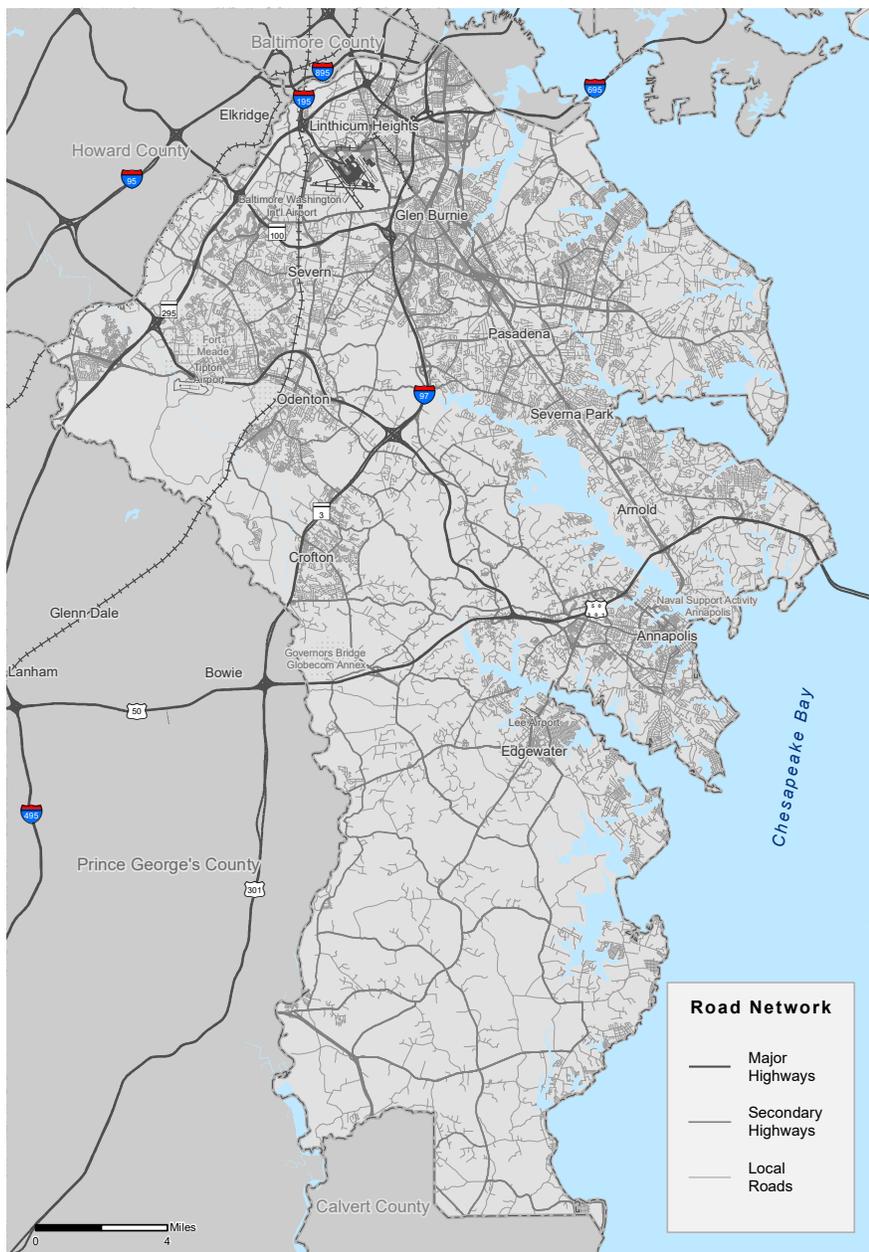


Roadway

GENERAL ROAD NETWORK

Interstate-97 is the main north-south corridor while US-50 is the main east-west corridor. Other prominent east-west corridors (listed from north to south) include Interstate-695, Interstate-295, Route 100, Route 32, and Route 214. These corridors stretch from Columbia, MD, in the

northwest, and Washington, DC, on the west, to the Chesapeake Bay, the eastern border of Anne Arundel County.



Data Source: NAVTEQ (HERE 2018).



ROADWAY LANE MILES & FUNCTIONAL CLASS

Anne Arundel County has a total of 2,246.4 miles of public roads. Of these roads, the Maryland state highway system is 16.7%. Local roads are 79.2% of the roadway system and municipal roads are 4.1%. Anne Arundel County's total roadway miles is the second highest portion of the region's

roadway network, making up 19.3% of the regional total roadway miles. The next highest is Baltimore County with their roadway miles making up 26.6% of the region's road system.

COUNTY & DISTRICT	INTERSTATE MILEAGE	PRIMARY MILEAGE	TOTAL SECONDARY MILEAGE	TOTAL STATE MILEAGE	TOTAL COUNTY MILEAGE	TOTAL MUNICIPAL MILEAGE	TOTAL ALL SYSTEMS
Anne Arundel	34.2	91.4	249.2	374.7	1,779.4	92.3	2,246.4
Region Total	202.6	271.7	1,248.1	1,715.5	8,106.6	1,831.5	11,653.6
State Total	480.1	837.8	3,958.3	5,269.4	21,511.2	4,325.2	31,105.8

Source: Maryland Department of Transportation- State Highway Administration, Office of Planning and Preliminary Engineering, Data Services Division. Mileage as of January 1, 2017.



TRAFFIC CONGESTION – TOP TEN BOTTLENECKS

RANK	HEAD LOCATION (APPROXIMATE)	BACKUP QUEUE LENGTH (MILES)	AVERAGE DAILY DURATION
1	MD-295 S @ MD-198	2.64	3 h 05 m
2	MD-295 S @ MD-197/EXIT 11	3.24	2 h 16 m
3	MD-295 S @ POWDER MILL RD	5.06	1 h 19 m
4	MD-2 N @ ROBINSON RD	2.84	1 h 48
5	Interstate-97 S @ MD-178/EXIT 5	2.32	2 h 17 m
6	MD-295 N @ MD-175	3.71	1 h 03 m
7	MD-295 N @ MD-100	2.14	2 h 02 m
8	MD-198 E @ MD-295/BALTIMORE WASHINGTON PKWY	0.79	4 h 50 m
9	MD-3 N @ MD-175/MILLERSVILLE RD/ANNAPOLIS RD	0.77	3 h 19 m
10	MD-2 S @ COLLEGE PKWY	1.21	2 h 42 m

Impact is the aggregation of queue length over time for congestion originating at each location in mile minutes. It's calculated by multiplying (Number of Occurrences x Average Duration in Minutes x Average Length)

Bottleneck conditions are determined by comparing the current reported speed to the reference speed for each segment of road. Reference speed values are provided by INRIX for each segment, and represent the 85th percentile observed speed for all time periods, with a maximum value of 65 mph. If the reported speed falls below 60% of the reference, the road segment is flagged as a potential bottleneck. If the reported speed stays below 60% for five minutes, the segment is confirmed as a bottleneck location. Adjacent road segments meeting this condition are joined together to form the bottleneck queue. When reported speeds on every segment associated with a bottleneck queue have returned to values greater than 60% of their reference values and remained that way for 10 minutes, the bottleneck is considered cleared. Bottlenecks whose total queue length, determined by adding the length of each road segment associated with the bottleneck is less than 0.3 miles are ignored. Queues may originate outside the Baltimore region but are reported on if any portion extends into the region.

Source: INRIX Data, University of Maryland CATT Lab and I-95 Corridor Coalition.

TRAVEL TO WORK

The average travel time to work for workers in Anne Arundel County is 30 minutes, which is typical for the region. More than half (57.8%) of 284,788 employed county residents work within the county. The other 42.2% commute outside of Anne Arundel

County to work. About 41% of jobs (113,430) in Anne Arundel County are held by non-residents who commute in from elsewhere. Overall, slightly more residents commute out (120,110) of the county to work than those who commute in.



JURISDICTION	AVERAGE TRAVEL TIME TO WORK (MINUTES)	WORKERS COMMUTING INTO THE COUNTY	WORKERS COMMUTING OUT OF THE COUNTY	NET WORKERS COMMUTING INTO/OUT OF THE COUNTY	RESIDENTS WHO WORK IN OWN COUNTY	PERCENTAGE OF COUNTY JOBS HELD BY RESIDENTS (%)
Anne Arundel County	29.7	113,430	120,110	-6,680	164,678	59.2
Baltimore Region	30.3	611,637	637,512	-25,875	709,040	53.7

Source: U.S. Census Bureau, 2011-2015 American Community Survey, 5-Year Estimates: Residence County to Workplace County Commuting Flows and Table S0801.



DRIVERS LICENSES & VEHICLE REGISTRATIONS

Anne Arundel County has **430,954** licensed drivers 

and **567,843** registered vehicles 

NUMBER OF VEHICLES AVAILABLE BY HOUSEHOLD

No vehicle available **4%**

1 vehicle available  **27%**

2 vehicles available   **44%**

3 vehicles available    **17%**

4 or more vehicles available     **8%**

Source: HPMS Data, Maryland Department of Transportation Motor Vehicle Administration (revised 2016)

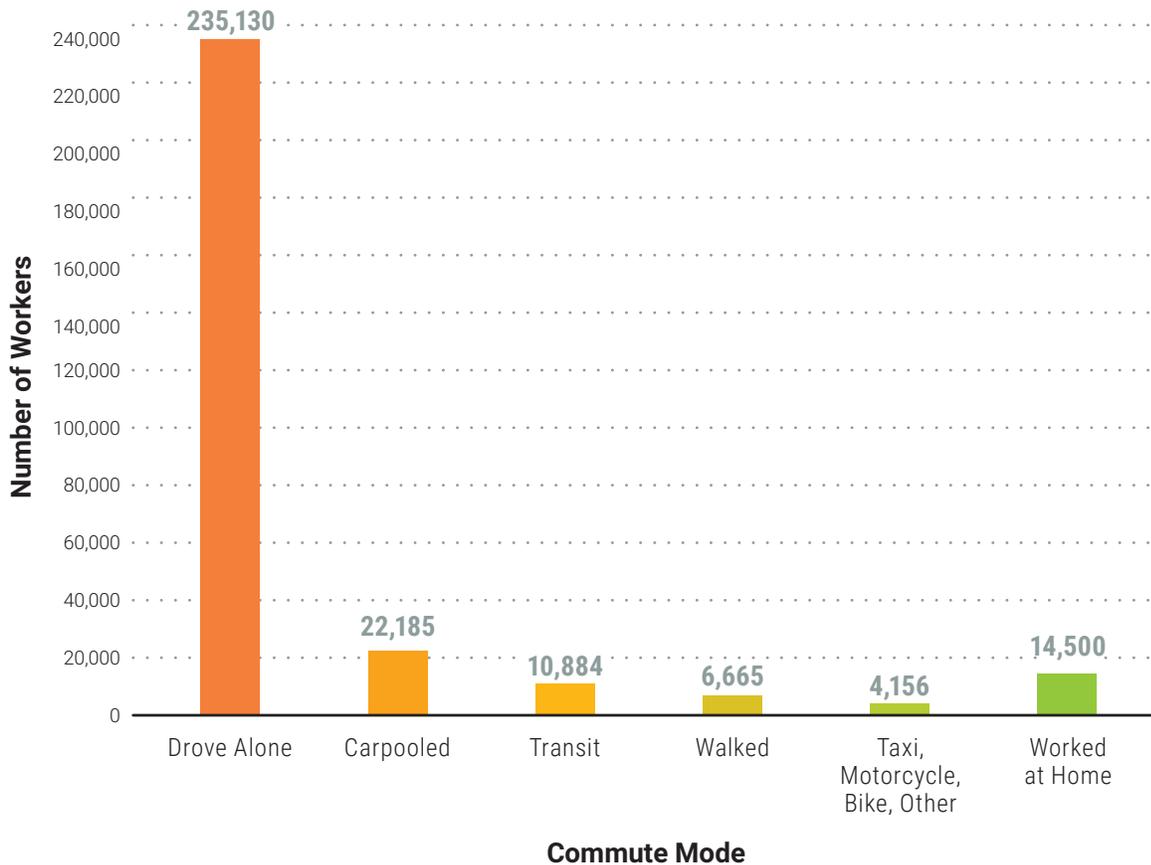


Multimodal Commuting

MODE SHARE

Over the span of 4 years between 2012-2016, approximately 80.1% of workers in Anne Arundel County drove alone to work while another 7.6% carpooled. Only

3.7% took public transit, while 2.3% walked to work. Nearly 5% worked at home. The remainder either took a taxi, motorcycle, bike, or other form of transportation.



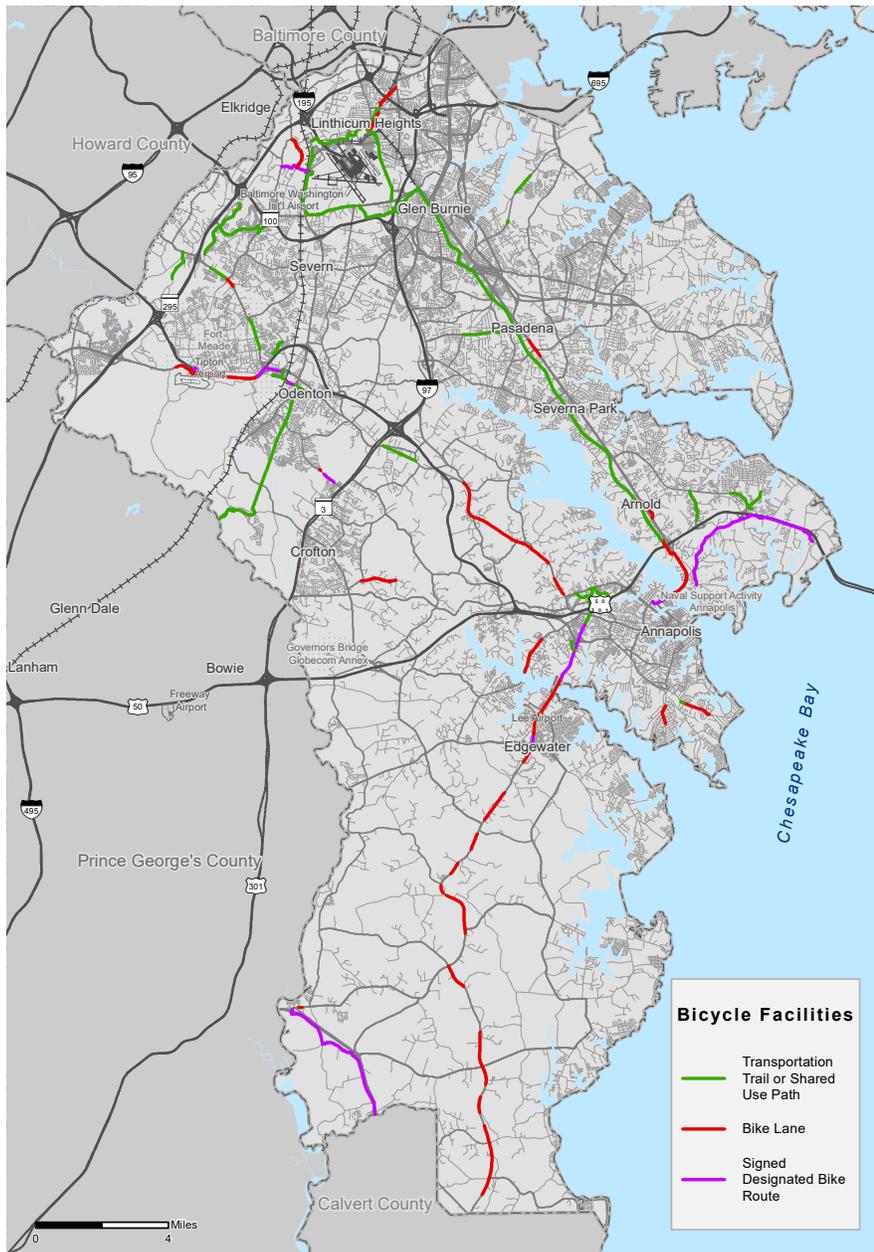
Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates.



BICYCLE FACILITIES

Anne Arundel County has significant bikeway connections throughout the County. A total of 48.4 miles of trails or shared use paths connect the Glen Burnie area down to the town of Arnold with additional

connections around the airport and Odenton. There are 28.2 miles of bike lanes and 15.3 miles of signed, designated bike routes. Bike lanes along Route 2 are almost complete from Edgewater to Calvert County.



Source: Baltimore Metropolitan Council.



PARK & RIDES

Anne Arundel County has 22 Park & Ride locations where commuters can carpool or connect with public transit.

SPACES	NAME	COMMUNITY	LOCATION
1,600	MARC-BWI Marshall Station	BWI Airport, MD 21240	MD-170 & Amtrak Way
1,300	MARC-Odenton Station	Odenton, MD 21113	1400 Odenton Rd, Odenton, MD 21113
822	MARC-Savage Station	Jessup, MD 20794-9482	MD-32 Exit-11/Dorsey Run Rd/W
795	Light Rail-Cromwell Station/ Glen Burnie	Glen Burnie, MD 21061	Baltimore Annapolis Blvd (MD-648) north of intersection with Dorsey Rd
555	Glen Burnie Government	Glen Burnie, MD 21061	County Garage, Crain Hwy N (MD-3) north of intersection with MD-648 (Baltimore Annapolis Blvd)
480	Harry S Truman	Annapolis, MD 21401	North of Riva Rd between Harry S Truman Pkwy and Admiral Cochrane Dr -- follow signs
400	US Naval Academy Stadium	Annapolis, MD 21402	Navy Stadium at Herbert M Sachs Blvd (south of Rowe Blvd) & Taylor Ave
347	Light Rail-North Linthicum Station	Linthicum Heights, MD 21090	Koch Rd near Camp Meade Rd, Linthicum Heights, MD
203	Hammonds Ferry	Linthicum Heights, MD 21090	Interstate-695 Exit-8/Hammonds Ferry Rd, Linthicum Heights, MD
200	Hahn Drive	Severna Park, MD 21146	Arundel Beach Rd between Ritchie Hwy & Leelyn Dr

6,702 Total Spaces (Top Ten)

Notes: Generally BMC does not list the number of spaces because if there is an event on privately-owned lots, then the available spaces change. That said, these lots usually only use 20-50% of the spaces for commuters on average.

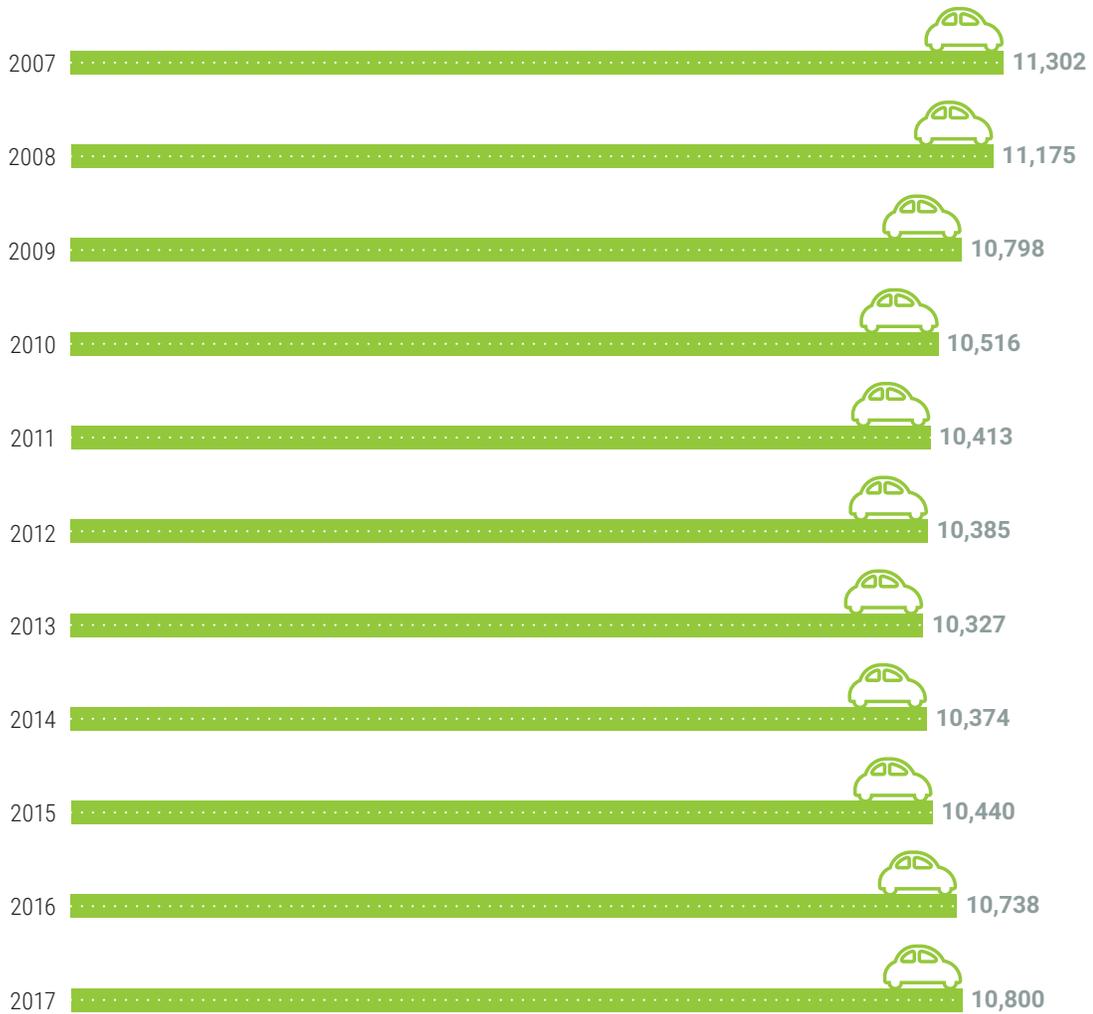
Source: Baltimore Metropolitan Council, Maryland Department of Transportation (MDOT) State Highway Administration, and MDOT Maryland Transit Administration.



VEHICLE MILES TRAVELED PER CAPITA TRENDS

Vehicle Miles Traveled (VMT) is a measure of the number of miles traveled by all vehicles in a certain geographic area over a given period of time, usually one year. Decreasing annual VMT per capita can directly improve air quality and the overall health of a population.

Anne Arundel County’s VMT has increased slightly over the past 27 years, going from approximately 9,300 in 1990 to 10,800 in 2017. The average VMT in Anne Arundel County have been approximately 200 per capita more than the regional average.



Vehicle Miles Travelled

Data Source: Maryland Department of Transportation, State Highway Administration, Office of Planning and Preliminary Engineering Services Division.



04

Contact Us



For questions regarding the **Anne Arundel County Data Book**, please contact us at:

410-732-0500 or **comments@baltometro.org**