2020 Annual Growth Report

Harford County Government
Department of Planning and Zoning

Barry Glassman
Harford County Executive

Ben Lloyd
Director of Administration

Jenny B. Jarkowski
Director of Planning and Zoning

"Maryland's New Center of Opportunity"

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The 2020 Annual Growth Report

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INTRODUCTION

In accordance with State law, this report must provide information on development activity and planning programs to ensure that these activities are being completed in a manner consistent with the State's goals and visions. This report also addresses the implementation status of HarfordNEXT. The indicators required by the State are included in this report.

Starting in July 2010, Harford County was required to submit a report to the Maryland Department of Planning (MDP) on its Adequate Public Facilities (APF) provisions and any development restrictions within Priority Funding Areas (PFAs) that are the result of these provisions. Harford County provides this information annually to MDP.

The 2020 Annual Growth Report is an ongoing analysis of growth trends, facility capacity, and service performance. The report also contains information on updates to the County's Development Regulations and updates of all planning documents as required by the State. It addresses State requirements regarding planning consistency and opportunities for improving the planning process. This report is prepared by the Department of Planning and Zoning in coordination with the Department of Public Works and the Harford County Public Schools. This report provides information on the present development activity as well as past trends and future projections for Harford County and the region.

The information in this report will be used by public officials, citizens, and private developers for various purposes:

- To assess facility adequacy during the development review and approval process;
- To assess facility capacity in regard to zoning reclassification decisions;
- To support the evaluation of priority projects in the annual Capital Budget review; and
- To identify critical deficiencies which require prompt attention by the County.

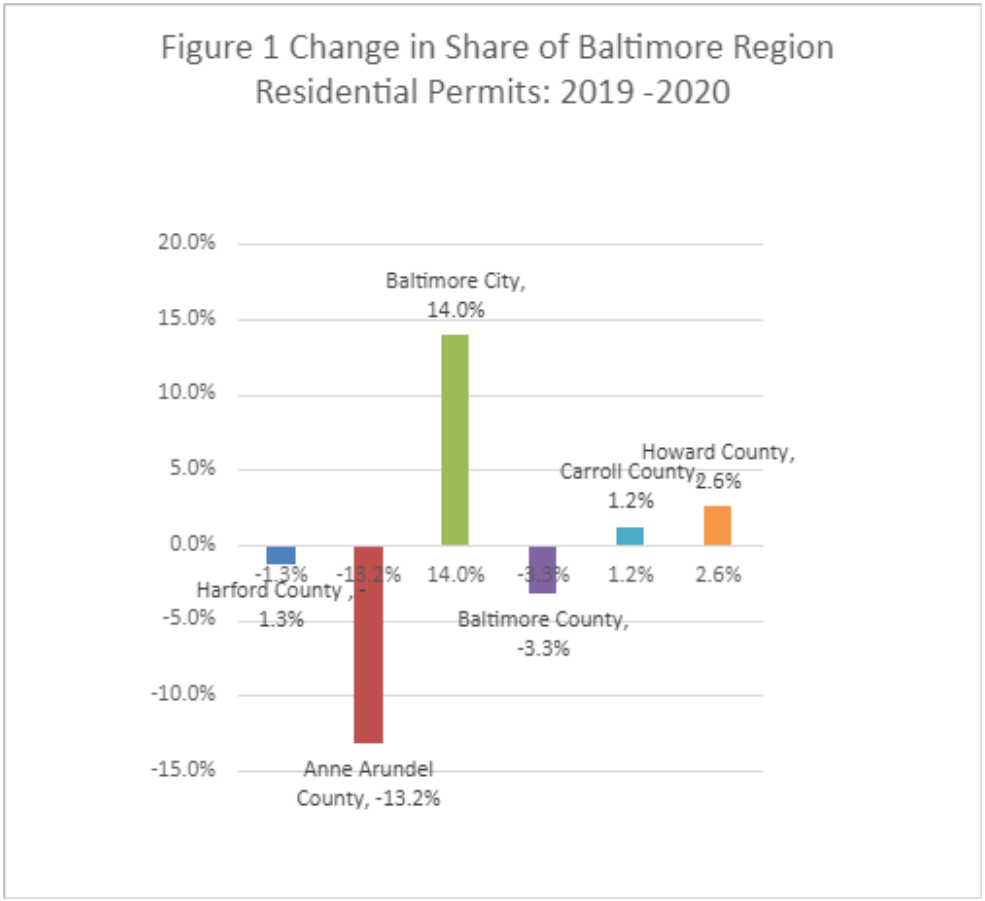
GROWTH TRENDS

Regional Data

In accordance with the Harford County Adequate Public Facilities provisions of the Harford County Code, the annual growth report must include data on growth trends for the previous one-year and five-year period, including comparisons with the other jurisdictions in the Baltimore region. Tables 1A – 5A (Appendix A) address the requirements specified in §267-126 A (2) of the Harford County Zoning Code.

Baltimore Region Permit Activity

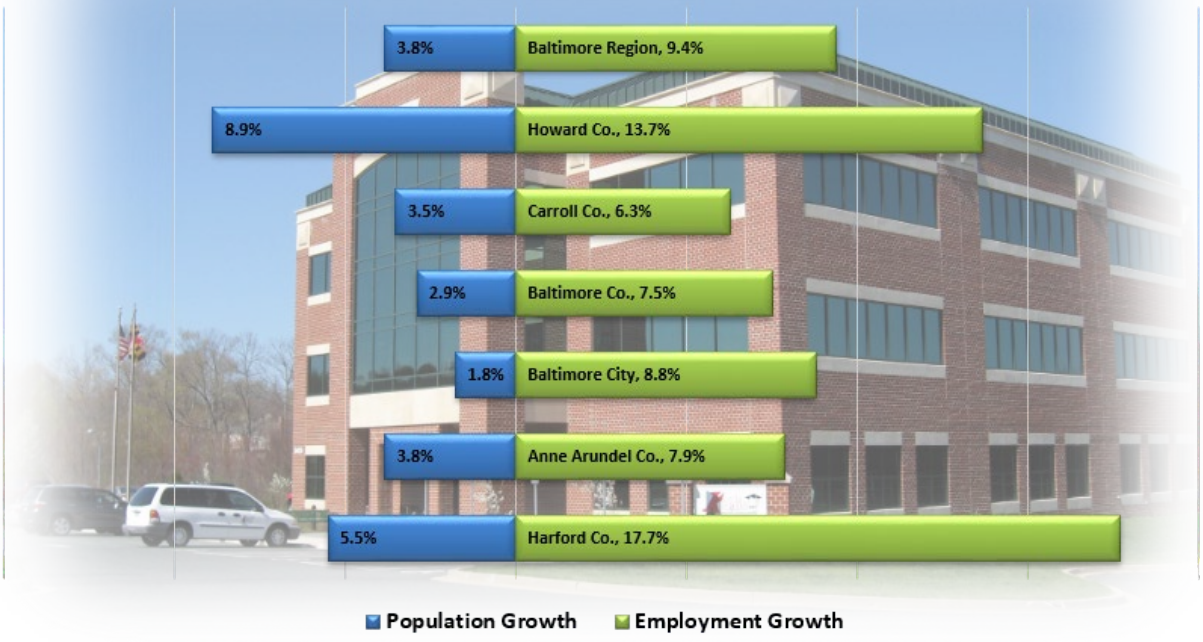
Harford County's share of the region's residential permits over the past five years represents 9.9% of the region's total permit activity. Harford County's share of the regional residential building permits activity decreased 1.3% between 2019 and 2020 (Figure 1). This is primarily due to a few multi-family projects in the City of Baltimore. See Table 1A in Appendix A for residential permit activity for the Baltimore Region for the 2016 to 2020 period.



Baltimore Region Population / Household Projections

Harford County's population is projected to grow by 14,185 residents over the next ten years from 257,680 in 2020 to 271,865 in 2030 (Figure 2). This represents a 5.2% increase in population growth and is slightly greater than the Baltimore region's projected growth rate of 3.7%. See Table 2A in the Appendix A for population and household projections for the Baltimore region for the 2020 to 2030 period.

Figure 2
Baltimore Region and Counties
Population & Employment Forecast: 2020 - 2030



Baltimore Region Employment Projections

Harford County's employment is projected to grow by over 22,231 jobs between 2020 and 2030, which represents a 15.1% increase in jobs over the next ten years. By contrast, the Baltimore region employment is projected to grow by 8.6% or 160,249 jobs between 2020 and 2030.

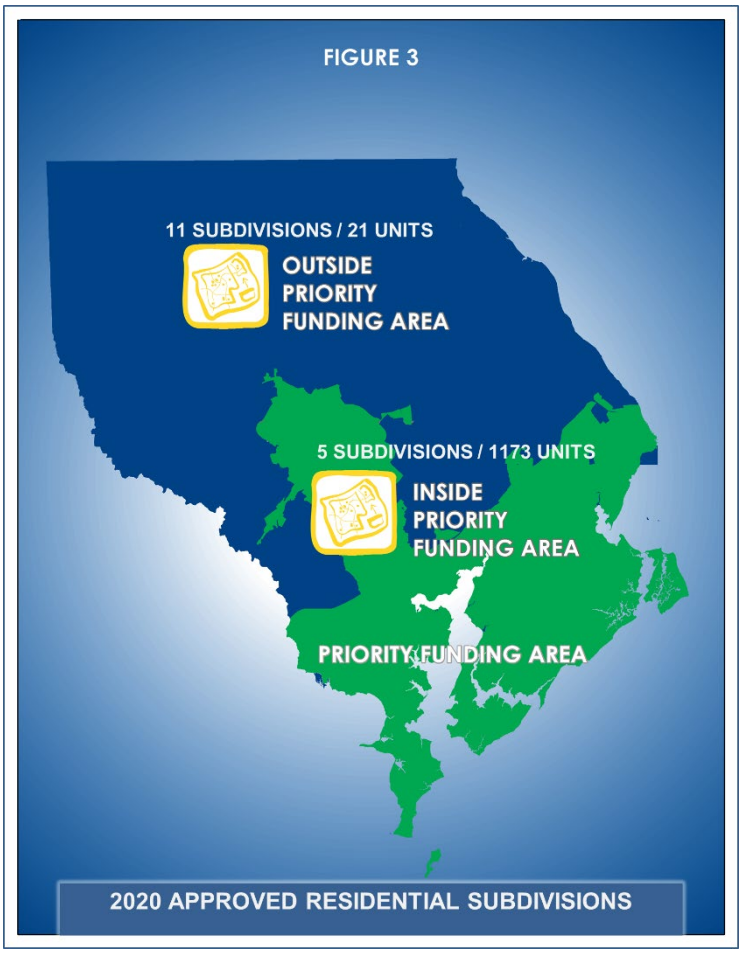
Harford County is strategically located on I-95 in the heart of the East Coast and Mid-Atlantic markets. Harford's location, highly skilled workforce, and progressive, business-friendly environment offers the ultimate setting to a wide range of prospective companies and industry sectors. See Table 3A in Appendix A for employment projections for the Baltimore region for the 2020 to 2030 period.

Harford County Development Activity

As required by State Land Use Article §1-207, Harford County is also required to prepare an annual report on development activity and planning programs. Reporting is required to be based on designated Priority Funding Areas (PFAs). PFA's coordinate state and local government efforts to support economic development and new growth. Funding for projects in municipalities, other existing communities, industrial areas, and planned growth areas designated by counties receive priority for state funding over other projects. In Harford County, the PFA includes the Development Envelope, the municipalities, designated rural villages, University Center, Harford Community College, and areas designated for Mixed Office.

New Subdivisions

In 2020, Harford County approved 16 residential subdivisions, totaling 760 acres. The residential subdivisions resulted in the creation of 1194 units. Five of the subdivisions (1173 units) were in the Priority Funding Area or 98% of the new lots/units approved in 2020. The remaining 11 residential subdivisions were located outside of the PFA and created 21 units or 2% of new lots/units approved in 2020. (*Figure 3*) As part of Maryland's 2009 Smart, Green, and Growing law, Harford County must submit an annual report showing the county is following the statewide land use goal of targeting development within designated Priority Funding Areas and minimizing development outside of these areas.



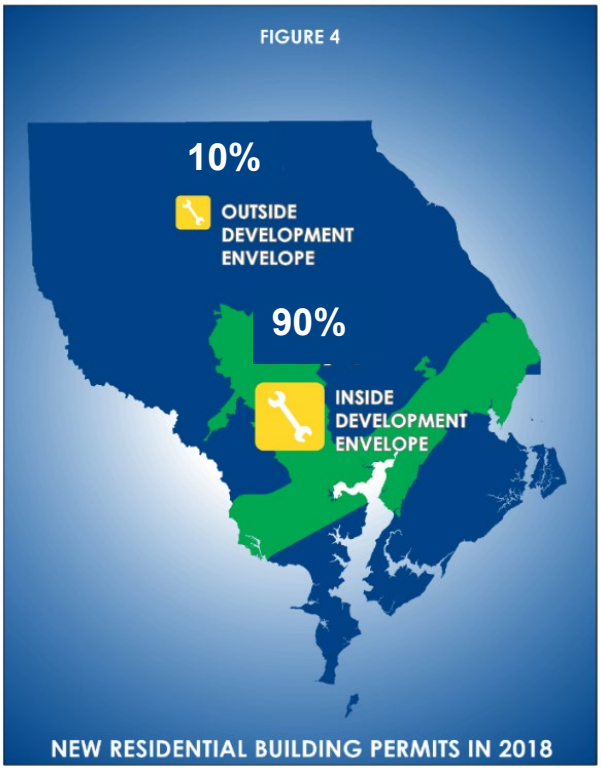
There were seven non-residential plans approved, all of which were located within the PFA. A list of the approved subdivisions is located in Appendix E.

Permit Activity

A total of 866 building permits were issued by Harford County in 2020, which represents a 4.6% increase over the 2019 permit total of 826. This number includes new construction residential, non-residential, and accessory structure permits.

New Residential Building Permits Issued

A total of 838 new residential permits were issued by Harford County in 2020, which represents a 1.7% increase over the 2019 total of 823. The unit type breakdown includes 528 single family detached units, 180 townhouse units, and two mobile home as well as 128 apartment units. the municipalities of Aberdeen, Bel Air, and Havre de Grace issued 113 of the new construction residential permits collectively. 743 or 88.7% of the 838 new residential permits (county and municipal) were located within the County's Development Envelope (*Figure 4*).



New Non-Residential Building Permits Issued

The County issued a total of 28 permits for new non-residential construction (larger-scale projects valued at $50,000 and over - including municipal) for a range of commercial and industrial uses. These permits can be broken out by value as $4.4 million in new construction and $2.5 million in additions, alterations, or repairs. In the region investment in larger scale projects is down $618 million (55.6%) from 2019.

Development Capacity

The Department of Planning and Zoning routinely updates the inventory of residentially zoned land in the Development Envelope. This inventory provides a total residential land capacity and includes vacant undeveloped zoned land, preliminary and site plan approvals, vacant land capacity in the municipalities, and potential redevelopment/infill capacity. Based on this update, there is an estimated capacity of 13,684 units (Figure 5) in the Development Envelope, which includes 2,904 planned-approved unbuilt units in the Development Envelope as of December 31, 2020. There are an additional 403 planned units remaining outside of the Development Envelope as of December 31, 2020.

This section addresses state reporting requirements regarding code amendments and new or updated comprehensive plans and plan elements.

Zoning Code Amendments

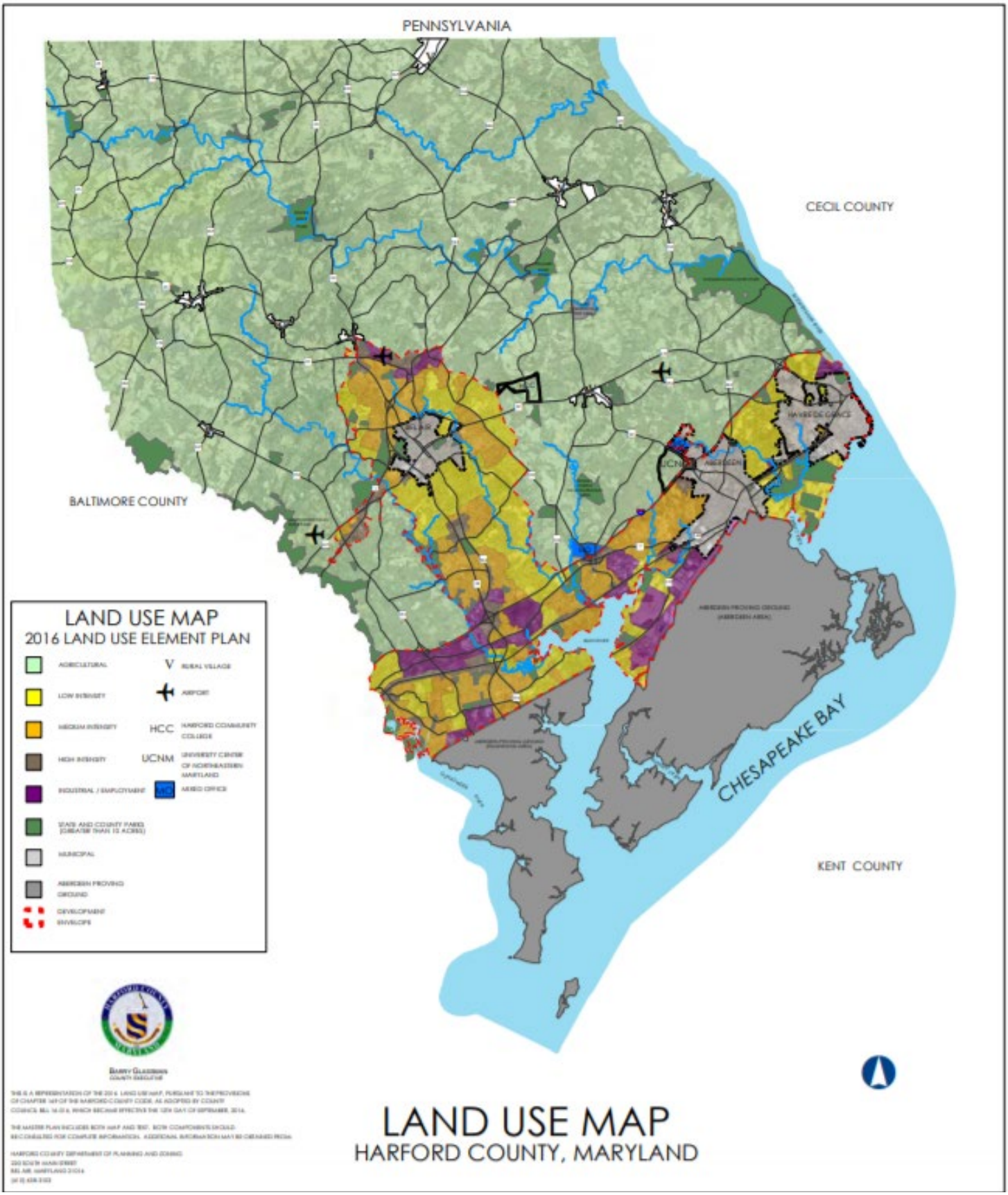
In 2020, the following bills were enacted that resulted in changes to the County's Zoning Code:

Effective Date	Bill	Description
1/2/20	19-29AA	Accessory Dwelling Unit (replace Cottage Housing) 267-4 add to definitions and remove cottage housing, update definition of relative. 267-28B(8) Temporary uses – delete cottage housing and replace with ADU. 267-50 permitted use charts – replace chart Residential, Transient.
1/13/20	19-28	267-53D(2) AG District – AG retail sales of AG product 50% of AG product grown on premises or other property in Harford County owed/leased by producer and up to 30% of AG product can be grown on a separate Harford County farm not owned/leased by producer and 20% of the area dedicated to non AG products grown/produced outside of Harford County.
2/14/20	19-30	Housing for the elderly. Allow single family dwellings and provide open space accordingly.
4/20/20	20-01AA	267-55 and Permitted Use Chart to allow Commercial amusement and recreation in the R4 district.
8/10/20	20-11	267-4 – definition of "local delivery" was added; 267-26E –, shared parking provisions changed from "on an adjacent property" to "on another property" and provides for an increase in the distance from the primary building in the CI, LI and GI. PPU Chart, Warehousing updated to include local delivery

Comprehensive Plan and Element Plan Updates

HarfordNEXT, the County Master Plan (Figure 6), was adopted and became effective September 12, 2016 by the Harford County Council.

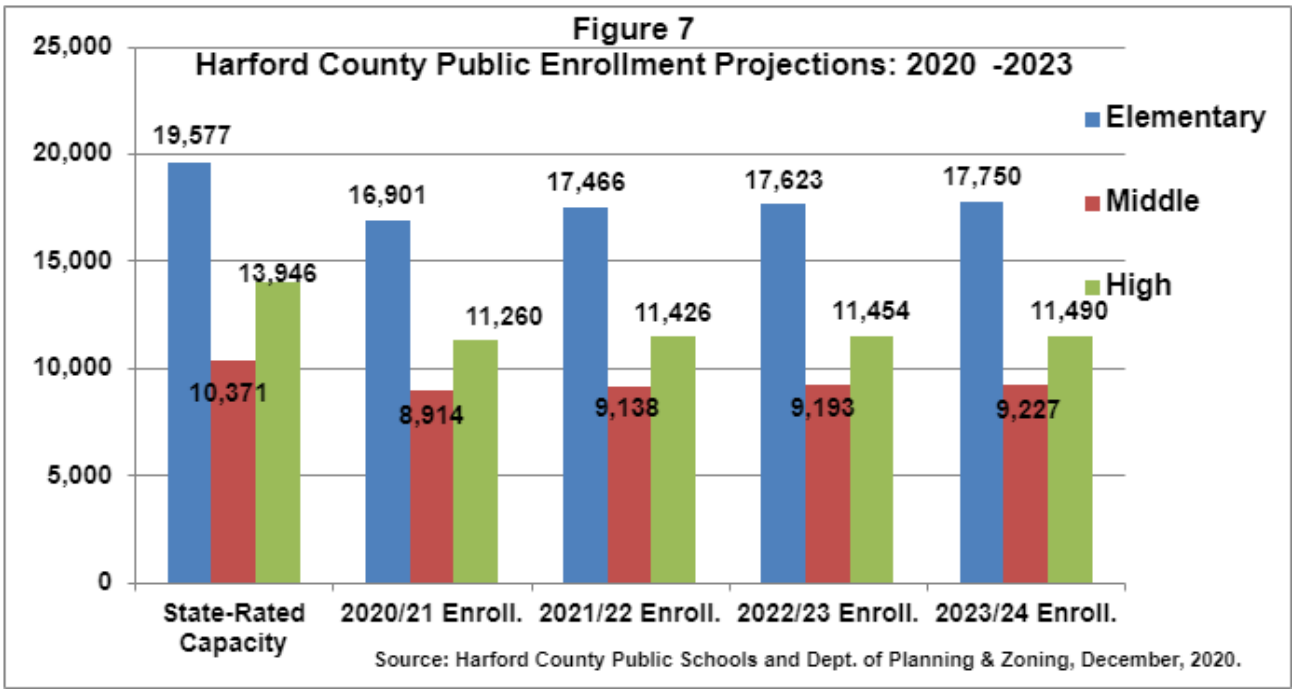
FIGURE 6


PENNSYLVANIA
CECIL COUNTY
BALTIMORE COUNTY
KENT COUNTY
CHESAPEAKE BAY
LAND USE MAP
2016 LAND USE ELEMENT PLAN
AGRICULTURAL
LOW INTENSITY
MEDIUM INTENSITY
HIGH INTENSITY
INDUSTRIAL / EMPLOYMENT
STATE AND COUNTY PARKS (GREATER THAN 10 ACRES)
MUNICIPAL
ABERDEEN PROVING GROUND
DEVELOPMENT ENVELOPES
V RURAL VILLAGE
AIRPORT
HCC HARFORD COMMUNITY COLLEGE
UCNM UNIVERSITY CENTER OF NORTHEASTERN MARYLAND
MIXED OFFICE
LAND USE MAP
HARFORD COUNTY, MARYLAND

report must address how the restrictions will be resolved.

Public Schools

To assess current and future adequacy of the public school facilities, the capacities of existing schools, school utilization and future populations are analyzed. The data in this report regarding the public school system is aggregated by the elementary/middle/high school districts, and include school enrollments, State-rated capacities for each school facility, utilization of each school facility, and three-year projected school enrollments (*Tables 6B, 10B, and 14B in Appendix B*). Modified school enrollment projections are included and take into account planned units remaining and projected units from vacant residential zoned land (*Tables 7B, 11B, and 14B in Appendix B*). In addition, development information such as building permits issued by dwelling type (*Tables 8B, 12B, and16B in Appendix B)* and population and household estimates (*Tables 9B, 13B, and 17B in Appendix B*) are included in this report. Figure 7 shows enrollment projections by grade level.



Analysis

Each school facility has been analyzed in terms of past growth trends, current conditions, and future enrollment projections. The information is based on factual data and is aggregated by current school districts. Based on the Adequate Public Facilities provisions of the County Code, the level of service standard for Public Schools is 110 percent of rated capacity within three years for elementary and secondary schools.

School Adequacy Standards

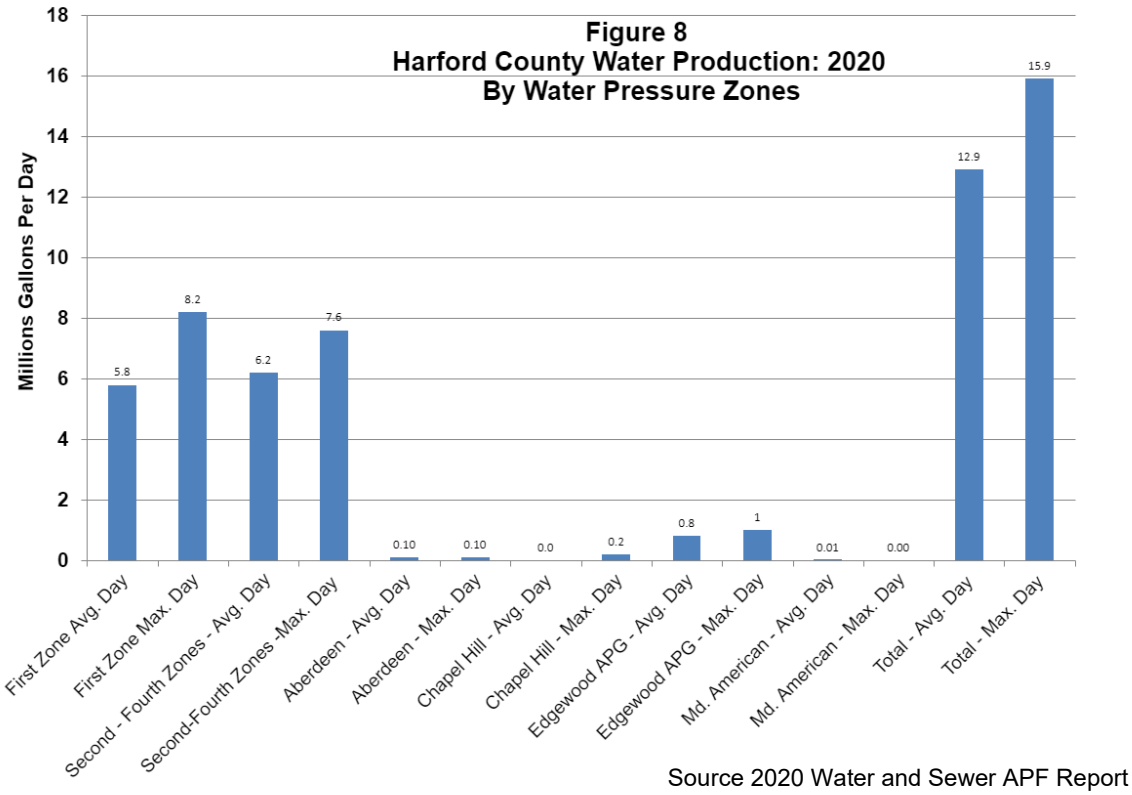
Under current law, preliminary plans for subdivisions of greater than five lots cannot be approved in school districts where the full-time enrollment currently exceeds, or is projected to exceed, 110 percent of the capacity within three years. Currently, 31 of 33 elementary schools meet adequacy standards. Eight of nine middle and all high schools meet adequacy standards. Given projected capacity utilization for 2021 – 2023, major subdivisions in the Homestead/Wakefield and Havre de Grace Elementary School as well as Bel Air Middle School attendance areas will not be approved but may be reviewed and placed on a waiting list until capacity is available.

Water and Sewerage

The data included in this section for the water and sewerage system are aggregated by the water and sewer service area, which generally coincides with the Development Envelope, as defined in the 2016 Harford County Master Plan, HarfordNEXT. Additional information is included in this report on water/sewage usage for residential and non-residential uses, an inventory of existing water consumption/sewage flows, demand projections (including the basis for their computation), and a list of capital projects is contained in the County's Capital Improvements Program for expanding facilities, including project status (*Tables 18C - 21C in Appendix C)*. This information is derived from the "2020 Water and Sewer Adequate Public Facilities Report," and is consistent with the County's Water Resources Element Plan.

Water

The County water system's average daily usage in 2020 was 12.89 MGD (Million Gallons Per Day), with a peak day demand of 15.87 MGD. The total countywide permitted maximum daily water treatment capacity is approximately 27.8 MGD. (Includes the City of Havre de Grace buyback of 1.2 MGD capacity) The County has a maximum day drought demand of 19.75 MGD. With the further expansion of the AWTP to 20 MGD the County's water service area is adequately planned. To keep pace with the projected growth, staged construction programs are established that distribute required capital costs for improvements and/or additions to the County's system over a period of years. Figure 8 illustrates water production by water pressure zones during 2020.

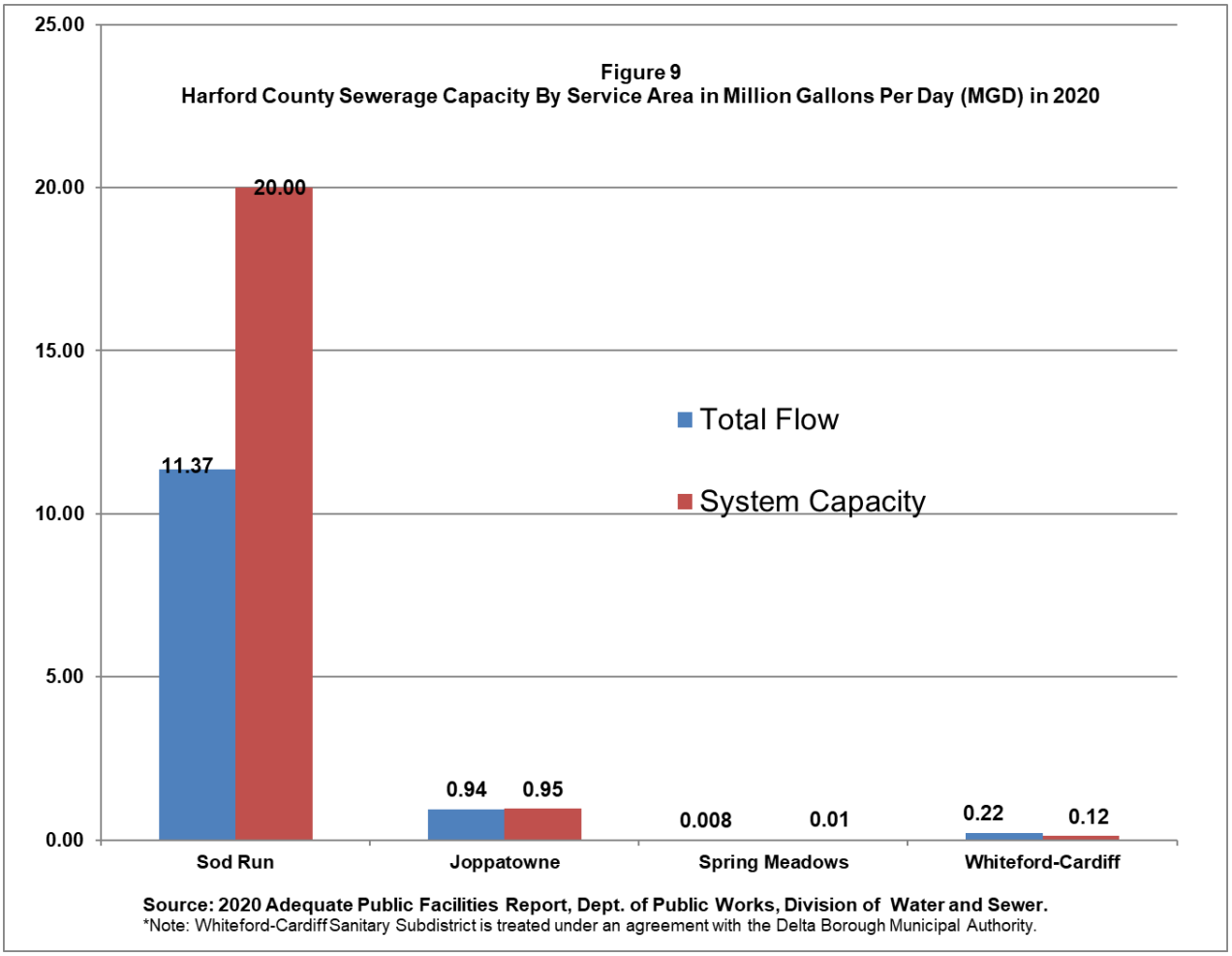


There are 16 community water systems that are not maintained or operated by Harford County, but are subject to the APF provision of the County Code. These private systems, which are monitored and evaluated by the Maryland Department of the Environment, are as follows:

- Maryland-American Water Co.
- Campus Hills Water Works Inc.
- Clear View Court Mobile Home Park
- Conowingo Power Plant
- Darlington
- Darlington Mobile Estates
- Fountain Green Mobile Home Park
- Greenridge Utilities Inc.
- Harford Community College
- Hart Heritage
- Lakeside Vista
- Queens Castle Mobile Home Park
- R & R Estates Mobile Home Park
- Susquehanna State Park
- Swan Harbor Mobile Home Park
- Williams Mobile Home Park

Sewerage

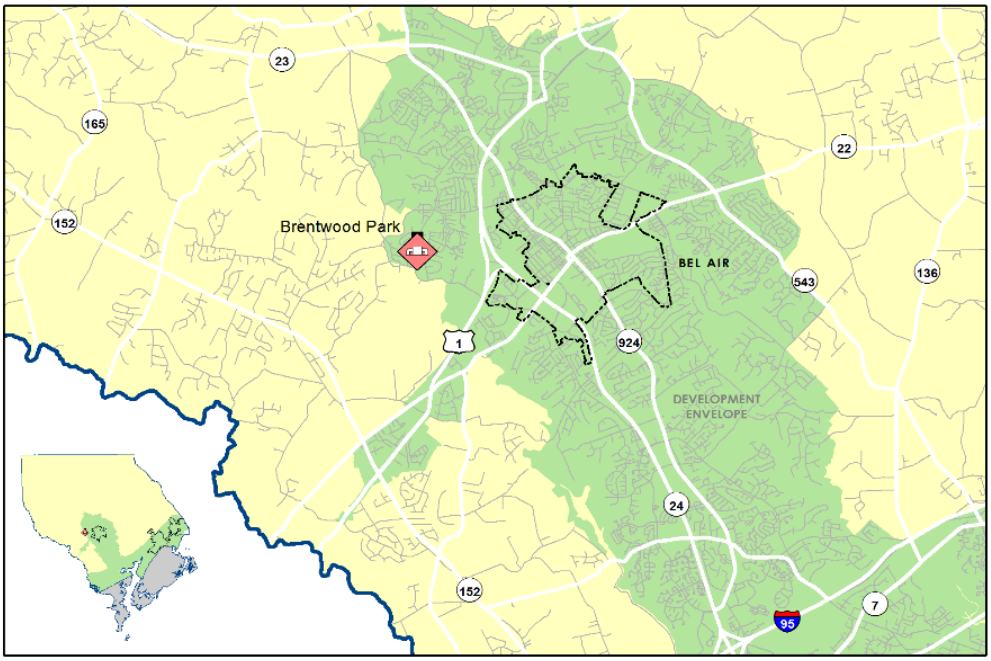
The average daily influent flow to the Sod Run WWTP in 2020 was approximately 11.37 MGD, exclusive of recycle flows and septage. The average daily influent flow to the Joppatowne WWTP in 2020 was approximately 0.94 MGD. The average daily influent flows for Spring Meadows and Whiteford-Cardiff in 2020 respectively were 0.008 MGD and 0.22 MGD's (*Figure 9)*.



Since 1972, the County has prohibited any additional privately owned community or multi-use treatment plants with a peak capacity larger than 10,000 gallons per day (GPD) outside the Development Envelope. This encourages growth to remain within the growth corridor, maintains financial stability, and protects the environment.

The Division of Water and Sewer has identified the Brentwood Park Sewage Pumping Station (S.P.S.) (*Figure 10*) as being over capacity. Replacement of the station is included in the capital improvement program and the project is currently at 95% design stage and is expected to be bid for construction in late 2021.

FIGURE 10



SEWAGE PUMPING STATION WITHOUT RESERVE CAPACITY

In March 2019, the final report for the Fallston Sewer Capacity Study was completed. The study examined both the existing and build out conditions for the Fallston service area and identified the sewer improvements required. The improvements are included in the capital improvement program for the portion to be funded by the County. The study identified the need for an increase in capacity for the Record Road Sewer Pumping Station. In July 2019, the Reckord Road Sewer Policy (18.62-1) was established to create a surcharge for new connections to fund the required improvements as a county capital project. The study also performed a preliminary downstream analysis of the Plumtree drainage basin, which will require further study to identify the future required capital improvements.

In August 2018, the Hickory Collector Policy was approved which identified the future sewer improvements necessary for buildout of the Hickory drainage area and it established a funding mechanism by a surcharge for future connections. The capital improvements are planned to be implemented as necessary depending on how and when development progresses.

Road System

The intent of the Adequate Public Facilities Roads provisions of the County Code is to create a mechanism that requires proposed development to make appropriate and reasonable road improvements, based on the proposed development's impact to the road system. Due to the Covid-19 pandemic no changes were made to transportation factors from the 2019 report. Traffic counts during the pandemic were not representative. Traffic studies were required to apply a growth factor to the previous year data.

The information for the APF Road System contained in this section includes the following: signalized and unsignalized intersection capacity analysis results (*Tables 22D and 23D*), average daily count locations (*Table 24D*), a list of approved County capital projects funded for construction in Fiscal Year 2019 (*Table 25D*)**,** and a list of State Consolidated Transportation Program (CTP) projects funded for construction in Fiscal Year 2019 (*Table 26D*). This information will help identify existing deficiencies in the road system and guide both County and State capital project funding to the most critical road projects (*Tables 22D – 26D in Appendix D*).

Developments which generate 1,500 or more trips per day may be required to expand the study area. The determination of existing and projected Level-Of-Service (LOS) is calculated in the Traffic Impact Analysis (TIA), which is performed by the developer and reviewed by the Departments of Planning and Zoning, Public Works and the State Highway Administration. LOS is a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience.

There are six established LOS – A through F – that measure the operational efficiency of a transportation facility. The following is a general definition of each level of service and Delay in Seconds:

LOS A (<= 10) – free flow of traffic with no restriction of significant delay
LOS B (> 10 & <= 20) – stable flow of traffic with very little restriction or delay
LOS C (>=20 & <= 35) – stable flow of traffic with low to moderate restriction or delay.
LOS D (> 35 & <= 55) – approaching unstable flow of traffic with moderate to heavy restriction / delay.
LOS E (>55 & <= 80) – unstable flow of traffic with significant restriction and delay.
LOS F (> 80) – forced flow or cases of “grid lock”. The flow rate drops significantly.

The standard for intersections within the Development Envelope is a LOS D. If the existing LOS is E or F at an intersection within the Development Envelope, then the developer must mitigate the impact of the development's new trips. The standard for intersections outside the Development Envelope is a LOS C. If the existing LOS is a D or lower, then the developer must mitigate the impact of the development's new trips.

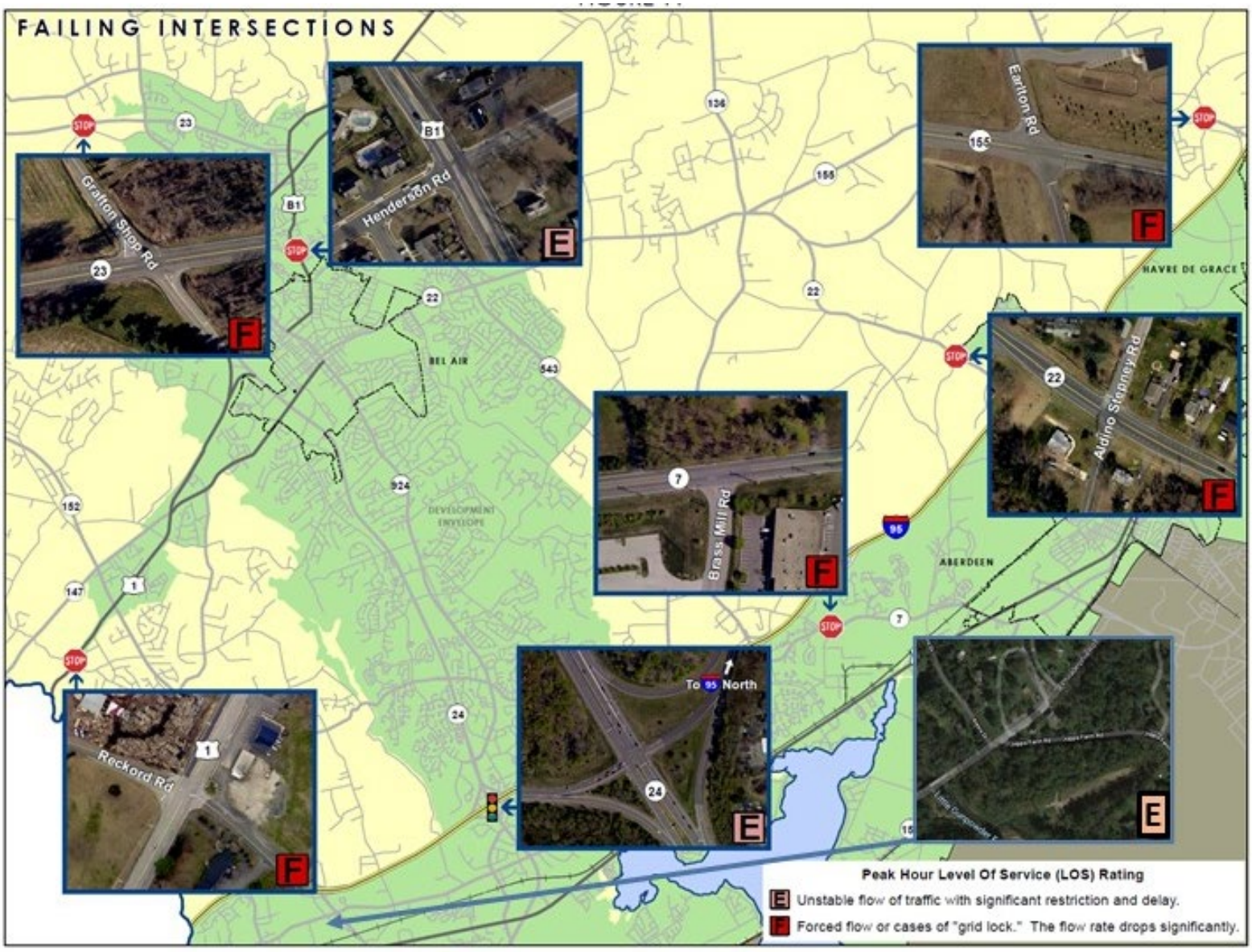
In addition to the review of individual TIAs, the Departments of Planning and Zoning and Public Works have studied a number of major roads and intersections to identify existing

conditions. This list represents a cross section of key intersections located inside, outside, and on the fringes of the Development Envelope that have been identified as failing or on the verge of failing based on the adopted LOS standards.

There is one signalized intersection and seven un-signalized intersections with one or more movements operating at a LOS E (LOS D outside the Development Envelope) or lower during peak hours. The evaluation of the LOS is determined by performance of the intersection during one-hour peak traffic periods in the a.m. and/or p.m. Figure 11 identifies intersections that contain one or more movements that **operate at an unacceptable LOS.** Developments that impact these intersections will be required to mitigate their impacts to the intersections.

FIGURE 11

FAILING INTERSECTIONS MAP



Fire/EMS Services

The Harford County Fire and EMS Services Master Plan that was completed in 2009 analyzed the need for Fire and EMS services based upon the county population. The plan identified the need for four additional Fire Station Facilities. One of these facilities, the Patterson Mill Road Station, has been completed and turned over to Bel Air Volunteer Fire Company (VFC). There is still the need for three additional Fire/Emergency Medical Service facilities which are listed below:

- Riverside area on MD Route 543 just north of US Route 40
- On MD 543 (Fountain Green Road between Hickory and Fountain Green)
- Churchville near the intersection of MD Routes 22 and 136

The approved FY 2021 Capital Budget and CIP includes funding for an EMS station and renovation of two existing VFD stations in Aberdeen and Whiteford. Additionally, the program funds communications, safety equipment, and multi-agency mobile command as well as other repairs to existing stations.

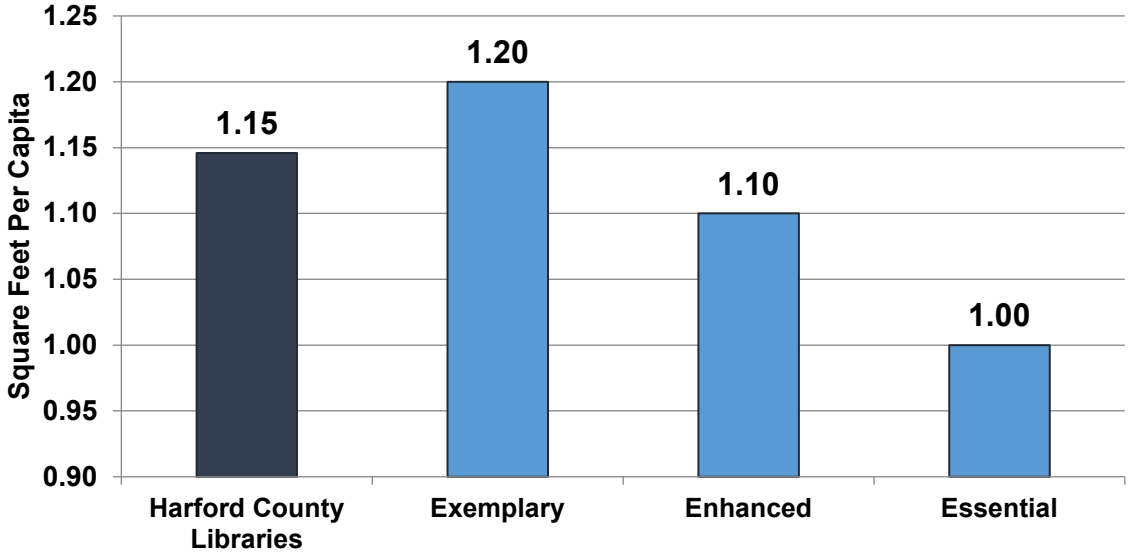
Library Services

The Maryland Department of Budget and Management require that libraries refer to "Maryland's Planning Guidelines for Libraries" in order to determine if the level of service is consistent with the population and justify the need for expansion. The planning guidelines rate the area of library space per capita in a scale with three ranges:

- Essential = 1.0 square feet per capita (nationally accepted minimum facility size)
- Enhanced = 1.1 square feet per capita
- Exemplary = 1.2 square feet per capita

The total gross square footage of all Harford County Public Library branches totals 229,917. Based on a 2020 population figure of 255,441 the square footage per capita figure is 1.15, which exceeds the enhanced standard of 1.1 square feet per capita (*Figure 12*). The approved FY 2021 Capital Budget and CIP includes funding for technology. Additionally, expansion projects for Darlington and Havre de Grace remain open with prior appropriations.

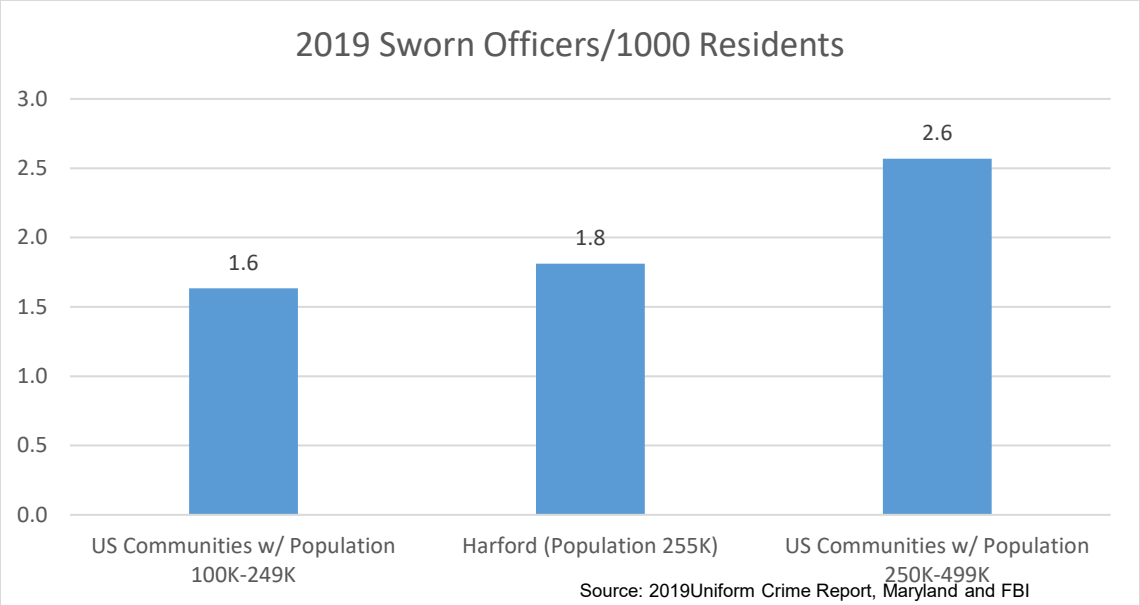
Figure 12 Harford County Public Libaries Square Footage Per Capita



Source: Harford County Public Libraries & Maryland's Planning Guidelines for Libraries

Law Enforcement

Harford County sworn officers per capita are compared using state and federal reports. The most recent reports are for 2019. The 2019 Maryland Uniform Crime Report shows Harford County had 463 sworn officers an increase of four from the previous year. This represents a rate of 1.8 sworn officers per 1,000 residents. The County total of sworn officers breaks down to 302 in the Harford County Sheriff's Office, 59 in the Maryland State Police, as well as 39 in Aberdeen, 29 in Bel Air, and 34 in Havre de Grace. The Federal Bureau of Investigation 2019 Uniform Crime Report indicates that the nationwide rate of sworn officers was 2.4 per 1,000 residents. This rate includes large metropolitan areas which have higher per capita rates. Figure 13 shows the Harford County rate of sworn officers in context with national averages for communities of similar population sizes.



PLANNING CONSISTENCY REVIEW

Harford County must submit an annual report that addresses specific smart growth measures and indicators that support the statewide land use goal of targeting development within designated Priority Funding Areas and minimizing development outside of these areas. Changes in development patterns occurring in 2020 that impact land use, transportation, community facilities patterns, zoning map amendments, and subdivision plats must be reported. Local jurisdictions, as part of their annual reporting, must determine if all changes in development patterns in 2020 reported are consistent with the following criteria:

- All changes must be consistent with each other;
- The recommendations of the last annual report;
- The adopted plans of the local jurisdictions;
- The adopted plans of all adjoining local jurisdictions; and
- The adopted plans of State and local jurisdictions that have responsibility for financing or constructing public improvements necessary to implement the local jurisdiction's plan.

No changes to land use were approved in 2020.

Development Patterns / Consistency of Plans

All the development noted in this report has been determined to be consistent with the surrounding land uses. A review of consistency is part of the plan approval process. As recommended in previous reports, the County continues to direct the majority of new residential development and redevelopment (98 in 2020) to the Development Envelope. During 2020, all subdivisions approved were consistent with the intent and policies of the 2016 Master Plan, the Water and Sewer Master Plan, and Adequate Public Facilities regulations. All roadway improvements were consistent with the State Consolidated Transportation Plan, and the Transportation Improvement Plan. Changes in development patterns, ordinances, and regulations were found to be consistent with the adopted plans of Harford County, as well as those of the state and all adjoining local jurisdictions. These changes furthered the Twelve Visions established in § 1-201 of the Land Use Article of the Annotated Code of Maryland.

Municipal Plan Coordination

Harford County coordinates with the Town of Bel Air and the cities of Aberdeen and Havre de Grace on the creation of their growth plans. State law requires municipal jurisdictions to develop a Municipal Growth Element (MGE) as part of their Comprehensive Plan. The MGE must identify future municipal growth areas outside of the existing corporate limits and be submitted to the County for review and comment. Proposed annexations must be consistent with those outlined in the Municipal Growth Element Plans and permitted development on the annexed lands shall be in accordance with the County's zoning classification that is in place at the time of the annexation.

Implementation

Harford County uses many tools to achieve the Visions, including Adequate Public Facilities (APF) legislation to manage growth by tying development to the capacity of existing government services such as water and sewer, roads, and schools. The County has developed implementation strategies, policies, programs, and funding for growth and development, resource conservation, infrastructure, and transportation are integrated across the local, regional, State, and interstate levels to achieve these visions.

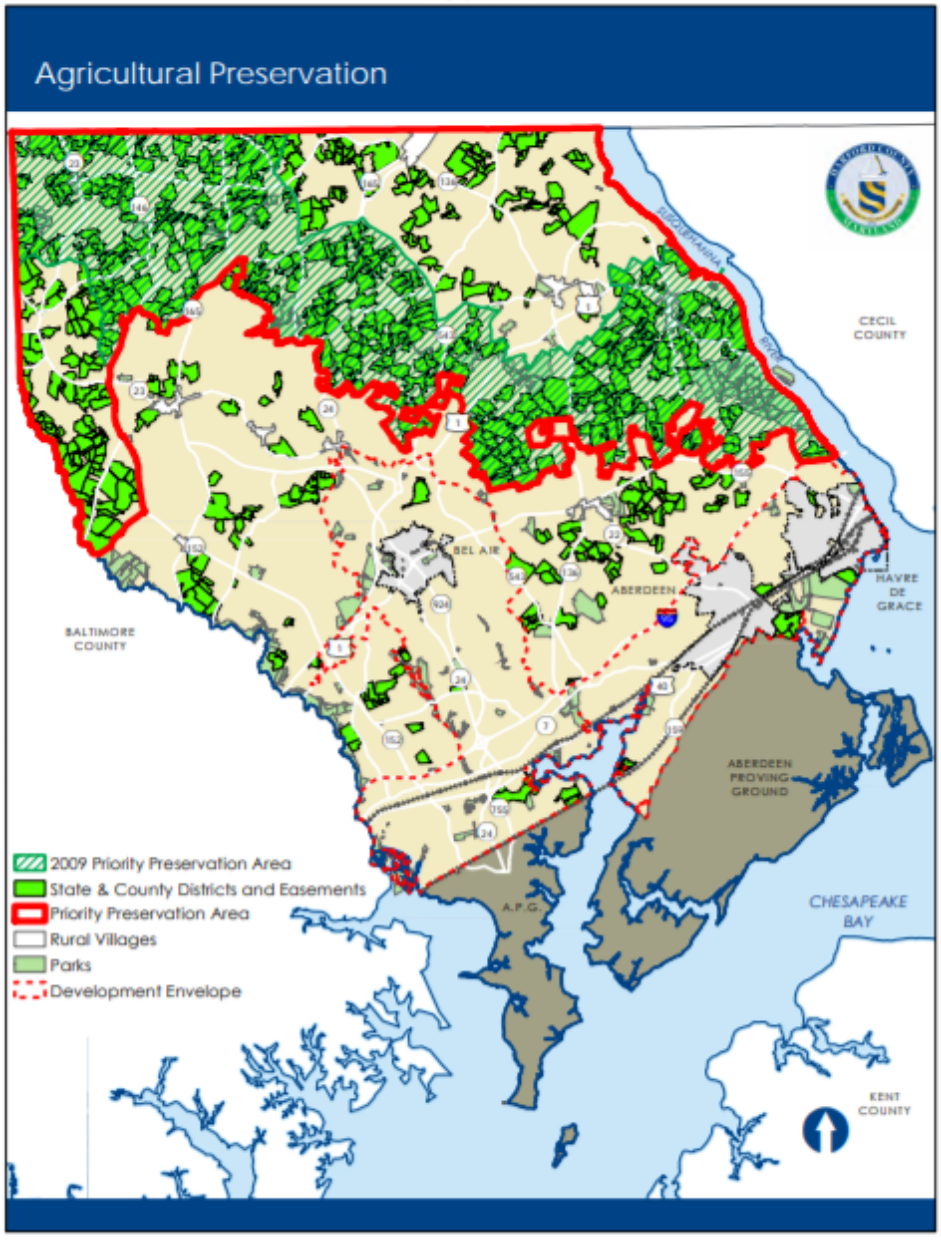
The Department of Planning and Zoning tracks approved subdivisions located in the Priority Preservation Area Designation (Tier IV) under the Maryland Sustainable Growth and Preservation Act of 2012 (SB 236) that were approved prior to the enactment of the regulations and therefore grandfathered. In 2018, the Department tracked three grandfathered preliminary plans comprised of 71 lots. These grandfathered plans shall remain valid through the tenure of their approval.

Agricultural Preservation

Preservation efforts were continued through a variety of state and local programs. While participation in agricultural preservation programs is available to all property owners with

agriculturally zoned land, the County's primary focus is protecting the Priority Preservation Area (PPA) (*Figure 14*). HarfordNEXT expanded the PPA boundary to include all lands north of the 2009 boundary and the Harford County portion of the Manor Rural Legacy Area. During 2020, 1,546 acres were preserved countywide, bringing the total protected land in the County to 56,795 acres. Almost 17% of the county is in some form of permanent preservation. For a comparison, Baltimore County has 15% of land in preservation. Of the acreage protected in 2020, approximately 659 acres were located in the County's PPA, bringing the total amount of protected land in the PPA to just over 49,028 acres.

FIGURE 14



PROCESS IMPROVEMENTS

As part of the annual report, local jurisdictions must identify any changes that will improve the planning and development review process, in addition to zoning ordinances or regulations that have been adopted during the reporting period that specifically address the planning visions of the Land Use Article.

In 2020, Harford County continues implementation of Watershed Implementation Plans (WIP) for the Chesapeake Bay Total Maximum Daily Load (TMDL). These plans were initiated in 2012 by County, Municipal, State, and Federal staff with expertise in the various nutrient source sectors; agriculture, septic systems, urban stormwater, and wastewater treatment plants, to meet the nutrient reduction goals that were assigned to Harford County for the Chesapeake Bay TMDL. Strategies to meet these goals by 2025 were presented in the Plan, with two-year milestones identified to track progress. Harford County coordinated with the State of Maryland in the development of the Phase III WIP. Harford County staff will continue to work with the State to document implementation of Chesapeake Bay 2025 water quality restoration targets.

The County does not anticipate making any changes to the development review process in the immediate future and will continue to direct development to the designated growth areas and encourage redevelopment. In order to provide citizens with more information and better access to development review activities, the Department has implemented an interactive web-based portal for nearly all types of permits. A web app called “Track-It”, provides up to date information on development activities within the County. A second application “Open GIS” allows citizens access to a range of geographic data layers. The layers of data available on that application dramatically increased in 2020. WebGIS, is a user-friendly mapping application that provides access to GIS data layers and the ability to print maps easily. The County implemented the infrastructure for online permitting for various permits in 2019 which aided in continuation of operations during the Covid 19 pandemic through 2020.

ORDINANCES AND/OR REGULATIONS THAT IMPLEMENT THE STATE PLANNING VISIONS

Harford County's Master Plan, HarfordNEXT, was adopted in June 2016 and is consistent with the 12 State Planning Visions. The various element plans, including the Land Use Element Plan, Natural Resources and Water Resources Element Plan, Historic Preservation Element Plan, and Transportation Element Plan have been incorporated into the 2016 Master Plan. The Land Preservation, Parks, and Recreation Element Plan is also consistent with the planning visions contained in the Land Use Article of the Maryland Code. The plans also include strategies that address these visions. The County's Chesapeake Bay Critical Area Program and its Bicycle and Pedestrian Master Plan are also consistent with the visions.

METHODOLOGY

Population Projection Methodology

Yearly estimates of population and households in Harford County for the Annual Growth Report are determined from the 2010 Census. This data is adjusted to reflect a number of variables including building permits, average household size, and household vacancy rates. The five- and ten-year projections are based on these estimates, with a growth factor applied to determine the rate and quantity of growth in the County. This growth factor is based on the number of building permits anticipated to be issued each year. It is important to note that projections are based on past trends and land availability. A component of the residential land inventory is the number of nets planned units remaining. The total planned units remaining is calculated by subtracting the total new residential building permits issued from the total preliminary plan approved units. Subdivision plans with six or more units remaining and approved municipality plans are included.

The 2010 Census information at the census block level is utilized for specific analysis of each facility regarding area maps and demographic information. Building permits are identified by facility areas and by subdivision name and/or address for each year. This provides the needed information on growth trends by facility service area. The population projections for the five other jurisdictions in the Baltimore Region are based on an interpolation of the Baltimore Metropolitan Council's Round 9 population forecast.

School Enrollment Projection Methodology

The methodology for projecting students utilizes historical data for live births and the number of children enrolled in public schools. Using these data, a series of ratios that reflect grade cohort survival are developed. These ratios include consideration of a number of factors:

- Births in a given year which affect subsequent kindergarten and first grade enrollments.
- Net migration of school age children.
- Net transfer of children between public and private schools.
- Non-promotion of children to the next grade level.
- Dropouts in the later years of secondary school.
- Shifts between regular grade and upgraded groups other than special education.

This technique of establishing a ratio is used for each successive grade. For example, a ratio is developed between the number of children actually in first grade in a given year and the number in second grade the following year. The ratio, therefore, represents the number of first graders who advance to second grade. If significant variations exist, such as a rapid increase in home building, then factors such as pupil yields for subdivision activity and development trends must be measured.

Development monitoring is a key activity to ensure accurate projections since housing expansion periods have a direct impact on school enrollments. A primary means of calculating projected student enrollment due to a housing expansion period is by using pupil yield factors for new developments.

Pupil yield is a term which describes the number of pupils generated per dwelling. The pupil yield factor is used to assist in identifying the impact of residential development on the Harford County Public Schools (HCPS) system. The former method only looked at selected subdivisions The data were tabulated by unit type, and the specific pupil yields were calculated for each subdivision in the elementary, middle, and high schools. Table 1 below provides a summary of the pupil yield factors by grade level.

Table 1 - Pupil Yield Factors

Unit Type	Grade Level		
	K – 5	6 - 8	9 - 12
Single-Family	0.17	0.09	0.12
Townhome	0.22	0.10	0.13
Apartments	0.15	0.06	0.06
Condominiums	0.07	0.04	0.04
Mobile Home	0.14	0.09	0.07

Source: Harford County Department of Planning and Zoning, 2018 Harford County Pupil Yield Study

The following example is included to illustrate how pupil yield factors are used to estimate new students generated by proposed residential development. In this example, it is estimated that 55 new students would be generated by a proposed 100-unit Single-Family detached (SFD) subdivision.

Table 2 - Estimating New Students Using Pupil Yield Factors (Proposed 100 SFD Subdivision)

Grade Level	Yield Factor	X	# of Dwelling Units (Single-family)	=	New Students
K- 5	0.17	X	100	=	23
6 - 8	0.09	X	100	=	9
9 - 12	0.12	X	100	=	12
TOTAL	**0.44**	**X**	**100**	**=**	**44**

Modified School Enrollment Methodology

Utilizing our regional cooperative Round 9 forecast, a projection of housing units was determined for each school district. The number and type of units were based on the existing zoning. After the number and type of units were determined and projected by year, a pupil yield factor was applied to determine the total number of new pupils by school district.

The methodology for determining a growth factor included a multi-step process. The process included utilization of the existing grade cohort succession methodology and the pupil yield factor. A factor was applied to the existing grade cohort succession ratio per school if the pupil yield factor identified an increase in the average number of students. In order to maintain a consistent application, all calculations were based on the Harford County Public School system's definition of "unadjusted" enrollment projections. No assumptions were made in terms of school capacities or utilization of existing facilities.

The actual enrollment of Harford County Public Schools (HCPS) is retained as base enrollment for the modified enrollment projections. HCPS first-year projected enrollment figures are also retained as they have been shown to be historically accurate.

Water and Sewer Facility Projection Methodology

Water:

The Harford County water service area is divided into four pressure zones due to varying topography within the Development Envelope. To provide an adequate supply of water, the transmission lines, and pumping and storage facilities for all zones must be sized for estimated future demands.

The water system is evaluated for adequacy for providing flows during the maximum day demand, while maintaining system pressures required to deliver fire flows. Water booster stations and/or transmission lines, service mains, storage tanks, and water treatment

plants are evaluated. Areas within the Harford County Development Envelope that exist at the highest elevations of the water pressure zones are evaluated for adequacy on a case-by-case basis. The anticipated growth within the County is accommodated through a combination of developer funded projects and the County Capital Improvement Program.

Sewerage:

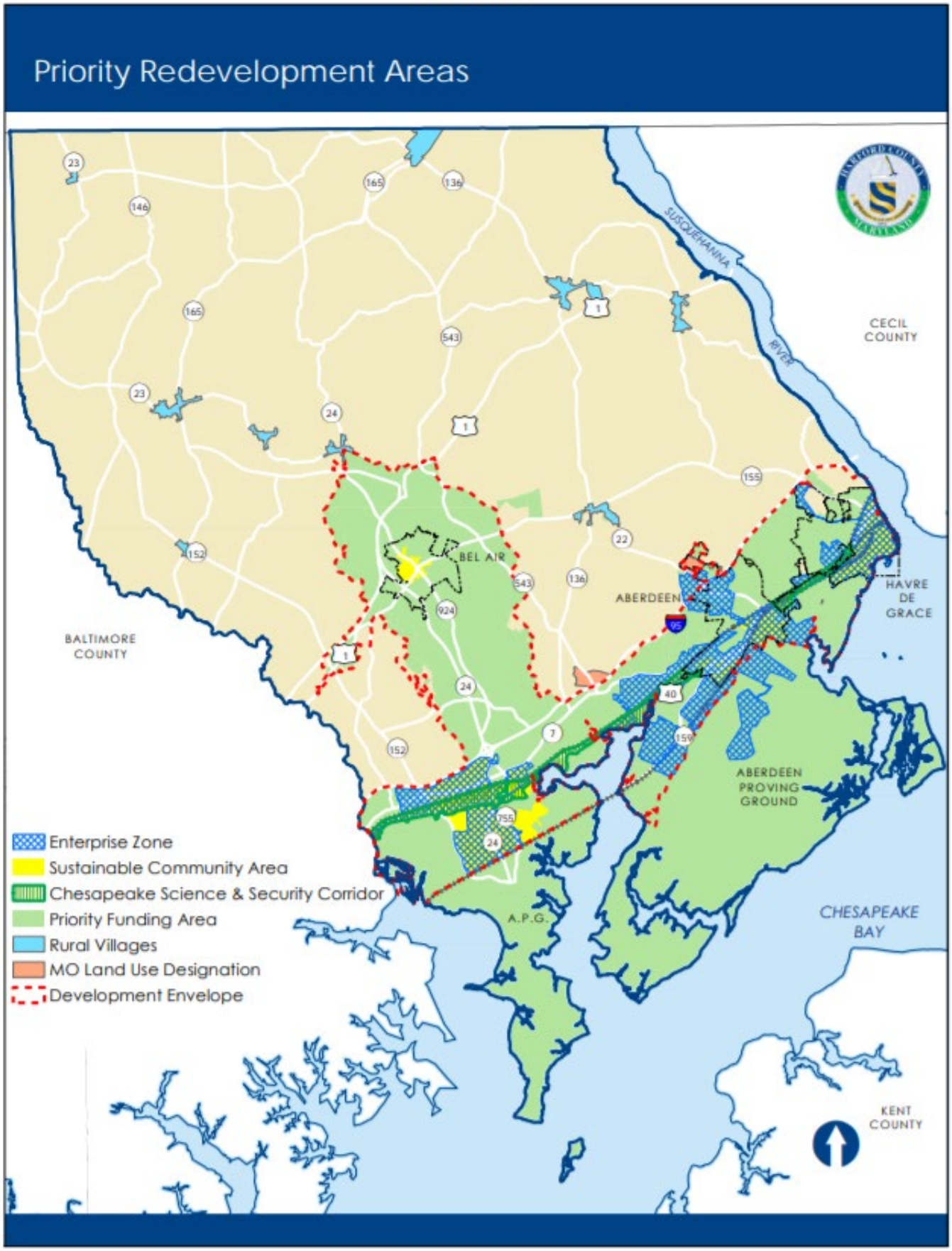
The sewerage system is similarly evaluated for adequacy to accommodate expected peak flows through collectors, interceptors, pump stations, force mains, and wastewater treatment plants. Should a capacity problem exist in a collector sewer, it is the developer's responsibility to resolve the inadequacy. Inadequacies at major pumping stations and wastewater treatment plants are resolved by programmed capital projects or by projects cooperatively supported by a group of developers.

The sewage flows to Harford County's existing Sod Run and Joppatowne Wastewater Treatment Plants (WWTP) originate from a portion of the Development Envelope. The area between the municipalities of Aberdeen and Havre de Grace, as well as the cities themselves, are within the Development Envelope and are served by the municipal sewerage facilities. A complete "Sewer System Capacity Analysis" is included in the "2019 Water and Sewer Adequate Public Facilities Report."

The determination of future wastewater flows to wastewater treatment plants is made by using population and household projections developed by the Harford County Department of Planning and Zoning for the years 2000 through 2035. The projections were distributed by transportation analysis zones (TAZs) by aggregating the ultimate development in terms of equivalent dwelling units into sewerage drainage areas. In order to keep pace with projected growth, the expansion of the Sod Run Wastewater Treatment Plant from 12 MGD in 1995 to 20 MGD was completed in 2000. A sanitary sewer collection system has also been established in Whiteford-Cardiff, which serves the properties within an established sanitary subdistrict. This system was made operational in 2001 with 172 mandatory hook-ups completed in 2002. Treatment for this subdistrict is provided by Delta Borough, Pennsylvania, with a current permitted average flow of 0.12 MGD.

In addition to the major publicly owned wastewater treatment plants, there are multiple private wastewater treatment systems, including mobile home parks and other commercial/community establishments, plus a larger population on private individual septic systems outside the Development Envelope. In addition, many of the schools outside the public sewerage service area are on publicly owned multi-use wastewater treatment systems.

FIGURE 15


Priority Redevelopment Areas
SUSQUEHANNA RIVER
CECIL COUNTY
BEL AIR
ABERDEEN
HAVRE DE GRACE
BALTIMORE COUNTY
ABERDEEN PROVING GROUND
A.P.G.
CHESAPEAKE BAY
KENT COUNTY
Enterprise Zone
Sustainable Community Area
Chesapeake Science & Security Corridor
Priority Funding Area
Rural Villages
MO Land Use Designation
Development Envelope

Inside the Development Envelope:

The TIA shall include all existing County and state roads in all directions, from each point of entrance of site through the intersection with the first arterial roadway to the next intersecting collector or higher functional classification road. Developments which generate 1,500 or more trips per day may be required to expand the study area.

Outside the Development Envelope:

The TIA study area shall include all existing County and state roads in all directions from each point of entrance of the site to the first intersection of a major collector or higher projected to generate more than 249 trips per day. Proposed development located within the Chesapeake Science and Security Corridor (CSSC) (Figure 15) will not be required to submit a TIA unless the proposed use is expected to generate 1,500 trips per day. The TIA provides information regarding the impact of generated trips from proposed land uses

Road Intersection Analysis Methodology

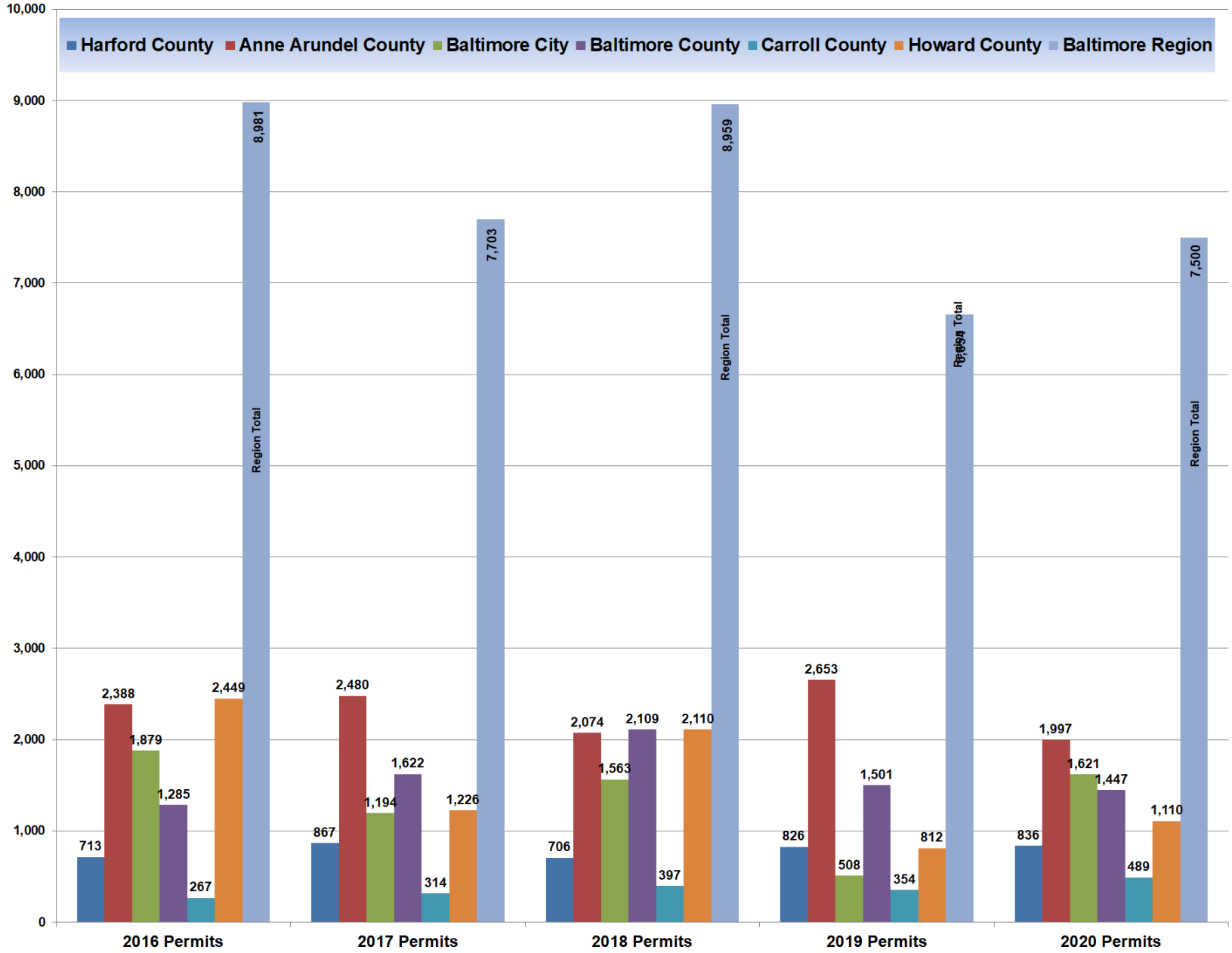
A key feature of the APF Road Intersection regulations is the requirement for preparation of a Traffic Impact Analysis (TIA) for residential and non-residential uses that are on traffic safety and traffic operation within a designated area and recommends solutions to mitigate the impact. The method of conducting a TIA is outlined in the "Harford County Traffic Impact Analysis Guidelines".functional classification road as defined by the Harford County Transportation Plan.

All TIA's shall include:

- An analysis of existing conditions including traffic counts, lane configuration, and signal timings.
- An analysis of background conditions without site development, including growth in background traffic, future traffic generated by nearby proposed developments and the determination of Level-of-Service (LOS) with any approved/funded State and County Capital projects.
- An analysis of the projected conditions with site development, including the traffic being generated by the proposed development and background traffic.
- An explanation of the results with recommended improvements, as necessary.

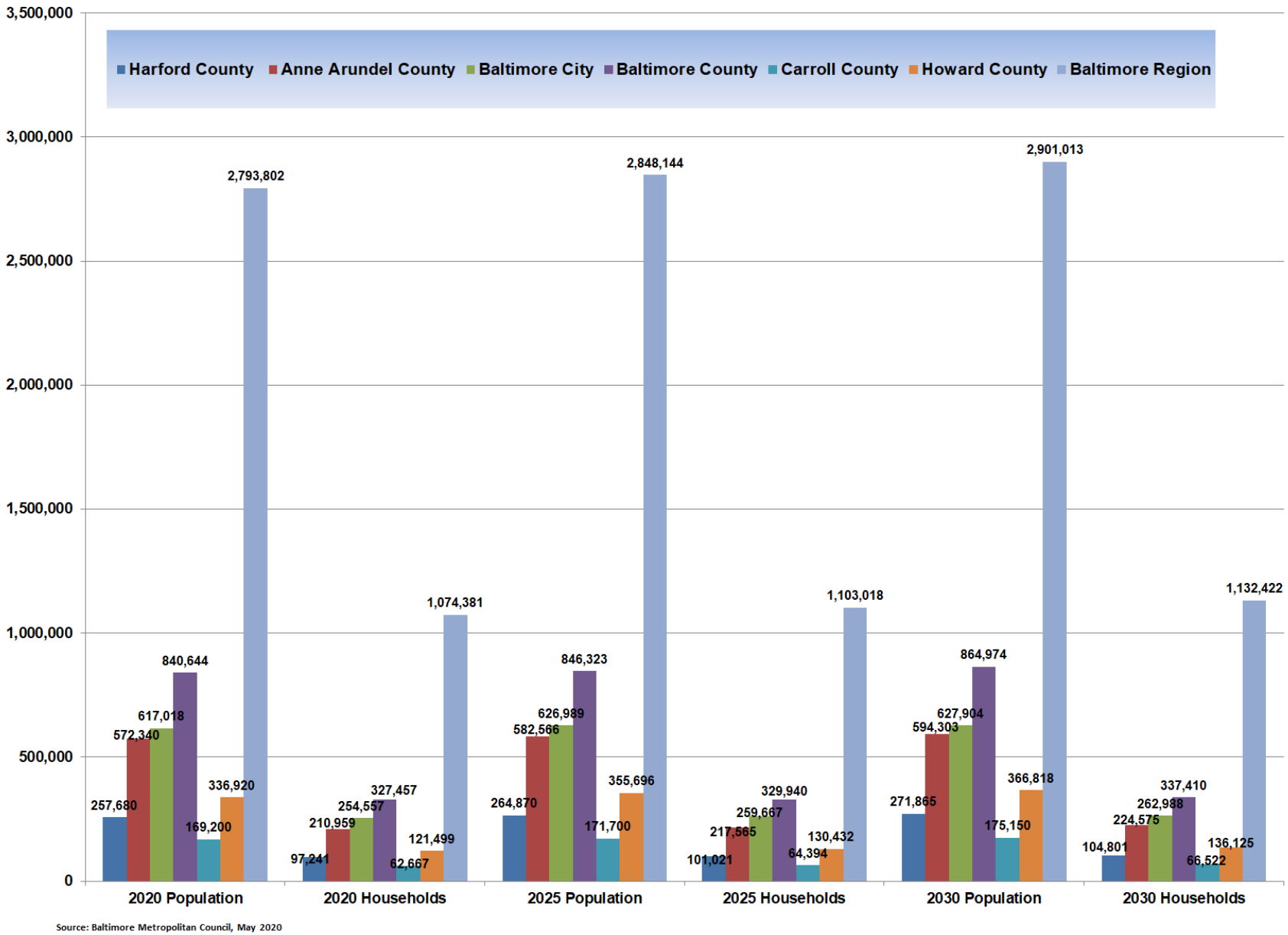
APPENDIX A

Table 1A Harford County - Baltimore Region Residential Permit Activity: 2016 - 2020



Source: Baltimore Metropolitan Council, May 2020

Table 2AHarford County - Baltimore Region Population and Household Projections: 2020 - 2030



Source: Baltimore Metropolitan Council, May 2020

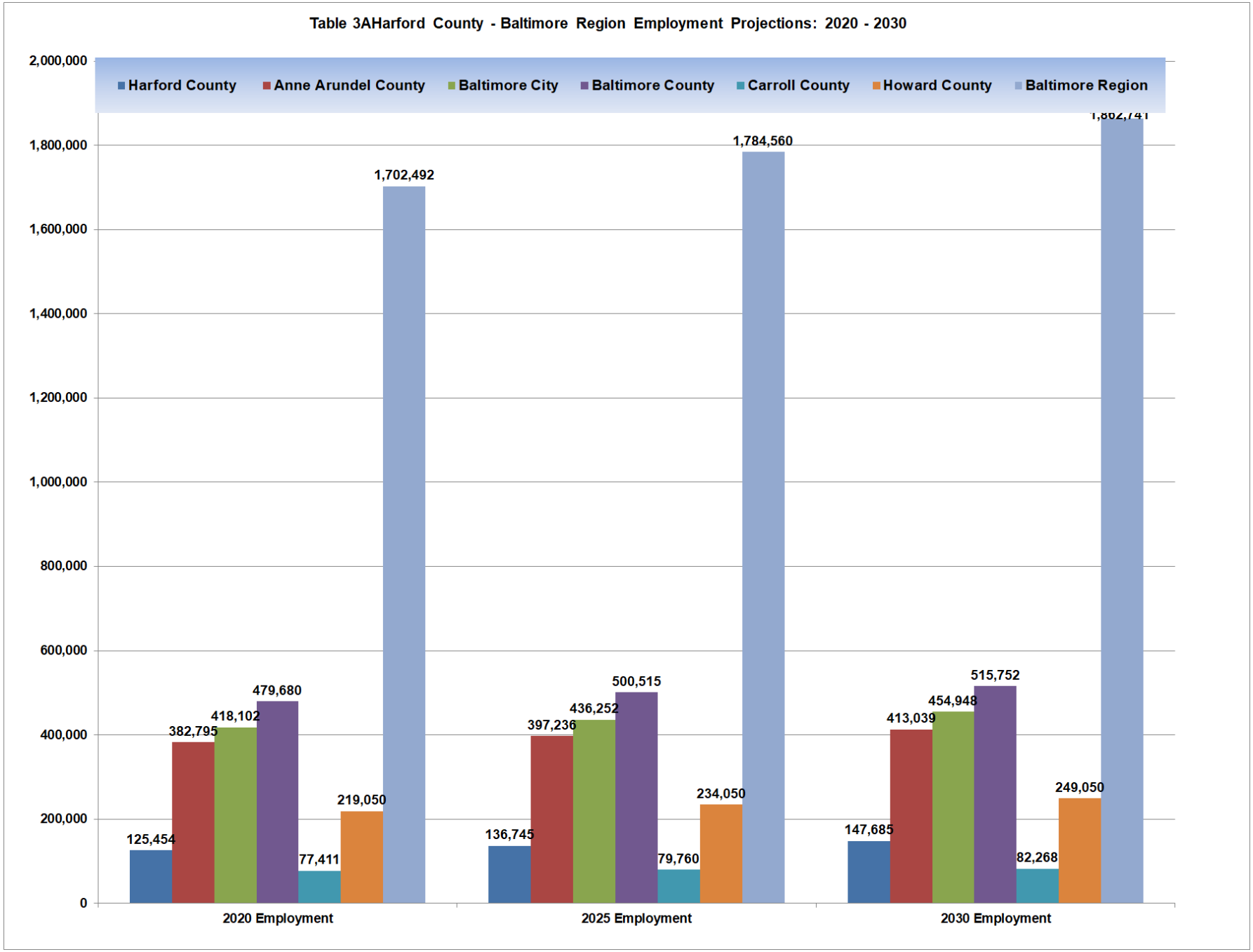


Table 3AHarford County - Baltimore Region Employment Projections: 2020 - 2030
Harford County
Anne Arundel County
Baltimore City
Baltimore County
Carroll County
Howard County
Baltimore Region
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
125,454
382,795
418,102
479,680
77,411
219,050
1,702,492
136,745
397,236
436,252
500,515
79,760
234,050
1,784,560
147,685
413,039
454,948
515,752
82,268
249,050
2020 Employment
2025 Employment
2030 Employment

Harford County Non-Residential Permit Activity
New Permits Valued $50,000 and Over

Permit Type	2015		2016		2017		2018		2019	
	# of Permits	Square Footage	# of Permits	Square Footage	# of Permits	Square Footage	# of Permits	Square Footage	# of Permits	Square Footage
Commercial	14	221,386	8	78,246	2	16,091	5	46,824	10	221,274
Industrial	0	0	1	12,000	2	663,880	4	865,212	4	24,986
Institutional	4	35,296	0	0	0	0	1	250,111	6	60,680
Utilities	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0
Total	**18**	**256,682**	**9**	**90,246**	**4**	**679,971**	**10**	**1,162,147**	**20**	**306,940**

Source: Baltimore Metropolitan Council, May 2020

Table 5A
Harford County Non-Residential Permit Activity
Additions, Alterations, and Repairs Valued $50,000 and Over

Permit Type	2015		2016		2017		2018		2019	
	# of Permits	Square Footage	# of Permits	Square Footage	# of Permits	Square Footage	# of Permits	Square Footage	# of Permits	Square Footage
Commercial	28	NA	29	NA	23	NA	23	NA	8	NA
Industrial	17	NA	9	NA	3	NA	5	NA	6	NA
Institutional	16	NA	8	NA	2	NA	5	NA	2	NA
Utilities	9	NA	0	NA	0	NA	6	NA	0	NA
Total	**70**	**NA**	**46**	**NA**	**28**	**NA**	**39**	**NA**	**16**	**NA**

NA: Data Not Available
Source: Baltimore Metropolitan Council, May 2020

APPENDIX B

FIGURE 1B

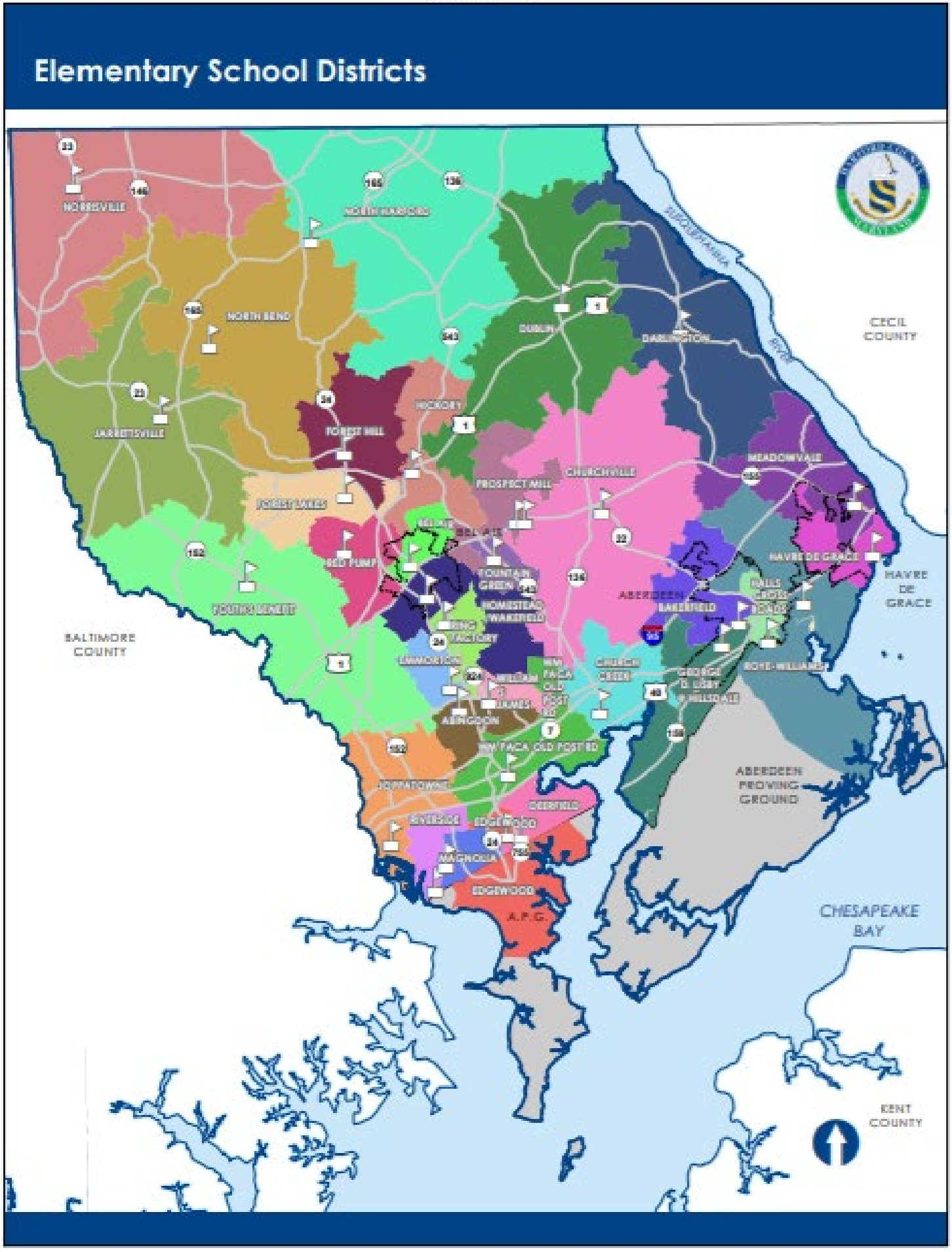

Elementary School Districts
NORRISVILLE
NORTH HARFORD
NORTH BEND
DUBLIN
DARLINGTON
CECIL COUNTY
JARRETTSVILLE
HICKORY
FOREST HILL
PROSPECT MILL
CHURCHVILLE
MEADOWVALE
FOREST LAKES
RED PUMP
BEL AIR
FOUNTAIN GREEN
HAVRE DE GRACE
HAVRE DE GRACE
YOUTH'S BENEFIT
HOMESTEAD / WAKEFIELD
ABERDEEN
BAKERFIELD
HALLS CROSS ROADS
BALTIMORE COUNTY
EMMORTON
WILLIAM PACA OLD POST RD
CHURCH CREEK
GEORGE D. LEISY
ROYE-WILLIAMS
HILLSDALE
ABINGDON
JOPPATOWNE
DEERFIELD
RIVERSIDE
EDGEWOOD
MAGNOLIA
A.P.G.
ABERDEEN PROVING GROUND
CHESAPEAKE BAY
KENT COUNTY

Table 6B

Harford County Elementary Schools 2020 Utilization Chart									
Elementary School	State-Rated Capacity	Actual 2020 - 2021		Projected 2021 - 2022		2022 - 2023		2023 - 2024	
		ENROLL	% UTIL.	ENROLL	% UTIL.	ENROLL	% UTIL.	ENROLL	% UTIL.
Abingdon	863	649	75%	702	81%	695	81%	701	81%
Bakerfield	500	383	77%	420	84%	425	85%	425	85%
Bel Air	486	522	107%	529	109%	533	110%	535	110%
Church Creek	819	681	83%	705	86%	713	87%	700	85%
Churchville	411	338	82%	374	91%	368	90%	363	88%
Darlington	157	99	63%	103	66%	104	66%	101	64%
Deerfield	788	720	91%	752	95%	757	96%	761	97%
Dublin	294	215	73%	224	76%	226	77%	226	77%
Edgewood	461	351	76%	394	85%	408	89%	418	91%
Emmorton*	570	565	99%	578	101%	592	104%	606	106%
Forest Hill	568	472	83%	476	84%	487	86%	493	87%
Forest Lakes	569	429	75%	450	79%	441	78%	433	76%
Fountain Green	548	460	84%	449	82%	452	82%	453	83%
G. Lisby at Hillsdale	455	420	92%	426	94%	429	94%	432	95%
Hall's Cross Roads	552	429	78%	464	84%	464	84%	459	83%
Havre de Grace	542	576	106%	586	108%	597	110%	**602**	**111%**
Hickory	668	643	96%	657	98%	655	98%	669	100%
Homestead/Wakefield*	920	997	108%	**1,027**	**112%**	**1,038**	**113%**	**1,060**	**115%**
Jarrettsville	525	427	81%	429	82%	448	85%	453	86%
Joppatowne	663	538	81%	569	86%	576	87%	582	88%
Magnolia*	561	517	92.2%	523	93%	522	93%	533	95%
Meadowvale	568	455	80%	467	82%	476	84%	484	85%
Norrisville	274	205	75%	214	78%	217	79%	219	80%
North Bend	498	378	76%	372	75%	373	75%	374	75%
North Harford	500	331	66%	348	70%	346	69%	348	70%
Prospect Mill	611	566	93%	570	93%	581	95%	579	95%
Red Pump*	737	758	103%	775	105%	793	108%	808	110%
Ring Factory	548	520	95%	521	95%	521	95%	522	95%
Riverside	588	445	76%	449	76%	452	77%	458	78%
Roye-Williams	703	410	58%	458	65%	467	66%	475	68%
Wm. Paca / Old Post Rd.	984	837	85%	883	90%	886	90%	889	90%
Wm. S. James	526	480	91%	482	92%	484	92%	486	92%
Youth's Benefit	1,120	1,085	97%	1,090	97%	1,097	98%	1,103	98%
TOTAL	**19,577**	**16,901**	**86%**	**17,466**	**89%**	**17,623**	**90%**	**17,750**	**91%**

*Note: preliminary subdivisions and residential site plans of greater than five lots/units will not be approved in attendance areas that are shaded.

Source: Harford County Public Schools & Dept. of Planning and Zoning, December 2020.

Table 7B

Harford County Modified Elementary School Enrollment Projections								
School District	**2019**	**2020**	**2021**	**222**	**2223**	**2224**	**2225**	**2226**
Abingdon	725	733	745	763	786	815	851	880
Bakerfield	427	415	400	383	365	346	324	305
Bel Air	531	556	580	601	620	637	652	669
Church Creek	697	721	748	777	811	850	893	932
Churchville	370	391	415	442	472	506	544	578
Darlington	104	91	77	63	51	41	32	21
Deerfield	752	759	765	771	777	783	789	795
Dublin	230	209	190	172	156	141	127	112
Edgewood	406	396	383	367	350	331	310	291
Emmorton	592	656	730	816	919	1,039	1,182	1,304
Forest Hill	507	544	579	609	637	660	677	699
Forest Lakes	445	414	379	342	303	264	226	188
Fountain Green	484	473	455	430	401	366	329	296
G. Lisby at Hillsdale	413	400	400	413	440	483	546	590
Hall's Cross Roads	453	450	448	448	450	454	460	464
Havre de Grace	610	706	834	1,006	1,236	1,552	1,990	2,319
Hickory	691	706	718	728	735	740	741	745
Homestead/Wakefield	1,034	1,083	1,142	1,210	1,291	1,384	1,493	1,587
Jarrettsville	450	437	422	404	384	363	341	320
Joppatowne	617	616	613	609	602	595	586	578
Magnolia	550	582	632	704	804	942	1,133	1,276
Meadowvale	518	516	515	515	515	516	517	518
Norrisville	218	266	337	440	594	829	1,195	1,447
North Bend	402	464	521	567	600	618	618	634
North Harford	373	330	288	248	210	176	145	111
Prospect Mill	591	556	515	470	423	375	328	280
Red Pump	772	838	923	1,029	1,162	1,329	1,542	1,714
Ring Factory	539	573	613	661	716	781	856	922
Riverside	462	478	489	494	491	483	468	459
Roye-Williams	491	494	516	559	630	739	899	1,012
Wm. Paca / Old Post Rd.	865	878	896	918	945	977	1,015	1,047
Wm. S. James	472	448	418	381	342	301	258	217
Youth's Benefit	1,057	1,071	1,081	1,086	1,087	1,084	1,077	1,073
Total	**19,867**	**20,270**	**20,785**	**19,651**	**22,529**	**23,721**	**25,369**	**26,609**

Source: Harford County Dept. of Planning and Zoning, May 2020.

Harford County Residential Building Permit Activity By Elementary School District: 2016 - 2020

ELEMENTARY SCHOOL	2016 BUILDING PERMITS ISSUED BY DWELLING TYPE					2017 BUILDING PERMITS ISSUED BY DWELLING TYPE					2018 BUILDING PERMITS ISSUED BY DWELLING TYPE					2019 BUILDING PERMITS ISSUED BY DWELLING TYPE					2020 BUILDING PERMITS ISSUED BY DWELLING TYPE				
	SF	TH	APT/ CO	MH	TOTAL	SF	TH	APT/ CO	MH	TOTAL	SF	TH	APT/ CO	MH	TOTAL	SF	TH	APT/ CO	MH	TOTAL	SF	TH	APT/ CO	MH	TOTAL
Abingdon	1	0	0	0	1	12	11	138	0	161	9	0	0	0	9	1	0	57	0	58	0	0	0	0	0
Bakerfield	26	0	0	0	26	0	0	0	0	0	2	0	0	0	2	3	0	0	0	3	73	0	0	0	73
Bel Air	2	0	0	0	2	3	0	0	0	3	1	0	0	0	1	0	12	8	0	20	4	0	0	0	4
Church Creek	0	16	0	0	16	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Churchville	5	0	0	0	5	4	0	0	0	4	3	0	0	0	3	9	0	0	0	9	7	0	0	0	7
Darlington	1	0	0	0	1	3	0	0	1	4	2	0	0	0	2	3	0	0	0	3	2	0	0	0	2
Deerfield	1	0	0	0	1	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Dublin	7	0	0	1	8	8	0	0	1	9	5	0	0	0	5	5	0	0	0	5	7	0	0	1	8
Edgewood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emmorton	9	0	126	0	135	21	0	0	0	21	39	0	0	0	39	32	0	0	0	32	13	0	0	0	13
Forest Hill	12	0	0	0	12	23	0	0	0	23	18	0	0	0	18	14	0	0	0	14	9	0	0	0	9
Forest Lakes	6	0	0	0	6	3	0	0	0	3	3	0	0	0	3	1	0	0	0	1	2	0	0	0	2
Fountain Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Lisby at Hillsdale	3	0	0	0	3	9	0	0	0	9	33	6	0	0	39	124	139	0	0	263	152	89	0	0	241
Hall's Cross Roads	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	3	0	0	0	3	1	0	0	0	1
Havre de Grace	30	34	0	0	64	49	64	0	0	113	81	40	0	0	121	36	13	0	0	49	16	21	0	0	37
Hickory	22	30	0	0	52	11	0	0	0	11	22	0	0	0	22	0	0	0	0	0	1	0	72	0	73
Homestead/Wakefield	24	46	37	0	107	20	37	0	0	57	29	51	0	0	80	47	40	39	0	126	77	27	0	0	104
Jarrettsville	5	0	0	0	5	7	0	0	1	8	11	0	0	0	11	16	0	0	0	16	11	0	0	0	11
Joppatowne	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	1	0	0	0	1	2	0	0	0	2
Magnolia	31	0	0	0	31	33	0	0	0	33	10	48	0	0	58	0	0	0	0	0	0	20	0	0	20
Meadowvale	0	0	0	1	1	5	0	0	0	5	0	0	0	0	0	2	37	0	0	39	0	0	0	0	0
Norrisville	3	0	0	0	3	12	0	0	0	12	10	0	0	0	10	4	0	0	1	5	9	0	0	0	9
North Bend	18	0	0	1	19	27	0	0	1	28	14	0	0	1	15	8	0	0	0	8	10	0	0	0	10
North Harford	10	0	0	1	11	16	0	0	0	16	18	0	0	0	18	6	0	0	0	6	19	0	0	0	19
Prospect Mill	1	0	0	0	1	0	15	0	0	15	9	58	0	0	67	32	55	0	0	87	32	17	0	0	49
Red Pump	31	0	0	0	31	11	0	0	0	11	17	0	37	0	54	6	0	0	0	6	3	0	0	0	3
Ring Factory	5	0	0	0	5	4	0	0	1	5	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
Riverside	5	5	0	0	10	1	9	0	0	10	1	0	0	0	1	1	0	0	0	1	4	9	0	0	13
Roye-Williams	21	0	48	0	69	20	0	144	0	164	4	3	0	0	7	3	0	0	0	3	1	0	0	1	2
Wm. Paca/Old Post Rd	6	0	0	0	6	4	11	0	0	15	12	22	0	0	34	11	0	0	0	11	0	0	0	0	0
Wm. S. James	13	16	0	0	29	18	28	0	0	46	23	8	0	0	31	25	0	0	0	25	33	0	0	0	33
Youth's Benefit	9	47	0	0	56	46	33	0	0	79	48	0	0	0	48	28	0	0	0	28	36	0	56	0	92
TOTAL	**307**	**194**	**211**	**4**	**716**	**375**	**208**	**282**	**5**	**870**	**430**	**236**	**37**	**1**	**704**	**422**	**296**	**104**	**1**	**823**	**524**	**183**	**128**	**2**	**837**

* Note: Permit totals revised to reflect cancelled permits.
Source: Harford County Dept. of Planning & Zoning, May 2021.
Key: SF = Single Family Dwelling; TH = Townhouse; APT/CO = Apartment/Condominium; MH = Mobile Home

Table 9B

Harford County Population and Households By Elementary School District: 2015 - 2019

Elementary School	2015		2016		2017		2018		2019	
	Households	Population	Households	Population	Households	Population	Households	Population	Households	Population
Abingdon	5,014	13,427	5,096	13,612	5,097	13,568	5,250	13,961	5,291	14,048
Bakerfield	2,509	6,718	2,560	6,837	2,585	6,880	2,585	6,873	2,605	6,916
Bel Air	3,051	8,171	3,055	8,160	3,057	8,137	3,060	8,137	3,083	8,187
Church Creek	4,033	10,802	4,042	10,795	4,057	10,800	4,058	10,791	4,089	10,859
Churchville	2,483	6,650	2,489	6,647	2,494	6,638	2,497	6,641	2,517	6,683
Darlington	1,012	2,710	1,013	2,705	1,014	2,698	1,017	2,706	1,025	2,723
Deerfield	3,265	8,744	3,266	8,723	3,267	8,696	3,268	8,690	3,293	8,744
Dublin	1,690	4,525	1,696	4,530	1,704	4,535	1,712	4,554	1,726	4,582
Edgewood	1,256	3,363	1,256	3,354	1,256	3,342	1,256	3,339	1,265	3,360
Emmorton	2,517	6,740	2,613	6,979	2,741	7,296	2,761	7,342	2,782	7,388
Forest Hill	2,422	6,487	2,434	6,500	2,445	6,509	2,467	6,560	2,486	6,601
Forest Lakes	2,848	7,629	2,849	7,611	2,855	7,600	2,858	7,600	2,880	7,648
Fountain Green	1,899	5,085	1,899	5,071	1,899	5,054	1,899	5,049	1,913	5,081
G. Lisby at Hillsdale	2,480	6,642	2,517	6,723	2,520	6,708	2,528	6,724	2,548	6,766
Hall's Cross Roads	2,006	5,373	2,006	5,359	2,006	5,341	2,008	5,341	2,024	5,374
Havre de Grace	3,713	9,944	3,752	10,021	3,813	10,149	3,921	10,427	3,951	10,492
Hickory	2,936	7,864	2,975	7,947	3,025	8,051	3,035	8,071	3,058	8,121
Homestead/Wakefield	5,423	14,523	5,488	14,659	5,590	14,880	5,648	15,020	5,692	15,113
Jarrettsville	2,778	7,440	2,789	7,448	2,793	7,436	2,801	7,449	2,823	7,495
Joppatowne	3,860	10,338	3,860	10,310	3,860	10,276	3,860	10,265	3,890	10,329
Magnolia	1,783	4,776	1,789	4,779	1,819	4,841	1,850	4,919	1,864	4,950
Meadowvale	2,631	7,045	2,633	7,034	2,634	7,013	2,639	7,018	2,660	7,062
Norrisville	1,282	3,433	1,287	3,437	1,290	3,433	1,301	3,460	1,311	3,481
North Bend	2,275	6,092	2,285	6,104	2,303	6,131	2,330	6,196	2,348	6,234
North Harford	2,363	6,328	2,374	6,341	2,385	6,348	2,400	6,382	2,418	6,422
Prospect Mill	2,864	7,669	2,866	7,654	2,867	7,631	2,878	7,653	2,900	7,701
Red Pump	3,954	10,589	4,250	11,350	4,279	11,390	4,289	11,407	4,323	11,478
Ring Factory	2,722	7,289	2,722	7,272	2,727	7,260	2,732	7,265	2,753	7,310
Riverside	2,498	6,690	2,498	6,672	2,507	6,675	2,517	6,693	2,536	6,735
Roye-Williams	1,884	5,046	1,904	5,086	1,970	5,243	2,125	5,652	2,142	5,687
Wm. Paca/Old Post Rd	4,616	12,362	4,621	12,342	4,626	12,315	4,641	12,341	4,677	12,418
Wm. S. James	1,974	5,286	1,981	5,290	2,008	5,345	2,052	5,456	2,068	5,490
Youth's Benefit	5,319	14,245	5,357	14,309	5,407	14,394	5,482	14,579	5,525	14,670
TOTAL	**93,358**	**250,025**	**94,221**	**251,660**	**94,898**	**252,615**	**96,465**	**256,149**	**96,465**	**256,149**

* Note: Population and household figures have been revised to reflect 2010 Census data (April 1 of each year).

Source: Harford County Dept. of Planning & Zoning, May 2020.

FIGURE 28


Middle School Districts
HAVRE DE GRACE
BEL AIR
FALLSTON
MAGNOLIA
EDGEWOOD
ABERDEEN
CHESAPEAKE BAY

Table 10B

Harford County Middle Schools 2020 Utilization Chart									
Middle School	State-Rated Capacity	Actual 2020 - 2021		Projected 2021 - 2022		2022 - 2023		2023 - 2024	
		ENROLL	%UTIL	ENROLL	%UTIL	ENROLL	%UTIL	ENROLL	%UTIL
Aberdeen	1,624	1,204	74%	1,210	75%	1,216	75%	1,223	75%
Bel Air	1,243	**1,442**	**116%**	**1,457**	**117%**	**1,461**	**118%**	**1,464**	**118%**
Edgewood	1,295	1,186	92%	1,189	92%	1,194	92%	1,198	93%
Fallston	1,063	864	81%	899	85%	908	85%	911	86%
Havre de Grace	733	613	84%	631	86%	648	88%	658	90%
Magnolia	1,028	812	79%	823	80%	833	81%	843	82%
North Harford	1,210	878	73%	939	78%	930	77%	918	76%
Patterson Mill	731	742	102%	760	104%	767	105%	770	105%
Southampton	1,444	1,173	81%	1,230	85%	1,236	86%	1,242	86%
Total	**10,371**	**8,914**	**86%**	**9,138**	**88%**	**9,193**	**89%**	**9,227**	**89%**

Source: Harford County Public Schools & Dept. of Planning and Zoning, December 2020.

Table 11B

Harford County Modified Middle School Enrollment Projections								
School District	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Aberdeen	1,203	1,151	1,168	1,185	1,201	1,220	1,238	1,255
Bel Air	1,435	1,402	1,370	1,395	1,420	1,445	1,470	1,494
Edgewood	1,161	1,129	1,097	1,126	1,153	1,183	1,212	1,241
Fallston	935	955	975	990	1,007	1,023	1,038	1,054
Havre de Grace	601	573	547	558	569	580	592	603
Magnolia	835	739	654	659	665	670	675	681
North Harford	929	895	863	861	858	856	853	851
Patterson Mill	764	708	657	657	657	657	657	657
Southampton	1,261	1,235	1,209	1,219	1,230	1,241	1,253	1,264
Total	**9,124**	**8,787**	**8,540**	**8,649**	**8,760**	**8,874**	**8,988**	**9,101**

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Source: Harford County Dept. of Planning and Zoning, May, 2020.

Table 12B

Harford County Residential Building Permit Activity By Middle School District: 2016 - 2020

MIDDLE SCHOOL	2016 BUILDING PERMITS ISSUED BY DWELLING TYPE					2017 BUILDING PERMITS ISSUED BY DWELLING TYPE					2018 BUILDING PERMITS ISSUED BY DWELLING TYPE					2019 BUILDING PERMITS ISSUED BY DWELLING TYPE					2020 BUILDING PERMITS ISSUED BY DWELLING TYPE				
	SF	TH	APT/ CO	MH	TOTAL	SF	TH	APT/ CO	MH	TOTAL	SF	TH	APT/ CO	MH	TOTAL	SF	TH	APT/ CO	MH	TOTAL	SF	TH	APT/ CO	MH	TOTAL
Aberdeen	51	16	48	0	115	33	0	144	0	177	39	6	0	0	45	134	139	0	0	273	227	89	0	1	317
Bel Air	62	36	126	0	224	37	33	0	0	70	70	49	37	0	156	59	49	47	0	155	44	0	0	0	44
Edgewood	8	0	0	0	8	18	22	138	0	178	21	22	0	0	43	15	0	57	0	72	2	0	0	0	2
Fallston	16	47	0	0	63	48	33	0	1	82	64	0	0	0	64	36	0	0	0	36	48	0	56	0	104
Havre de Grace	32	34	0	1	67	57	64	0	1	122	83	43	0	0	126	43	50	0	0	93	19	21	0	0	40
Magnolia	36	5	0	0	41	34	9	0	0	43	13	48	0	0	61	1	0	0	0	1	5	29	0	0	34
North Harford	56	0	0	3	59	91	0	0	2	93	69	0	0	1	70	46	0	0	1	47	58	0	0	1	59
Patterson Mill	29	26	37	0	92	40	32	0	1	73	35	10	0	0	45	48	3	0	0	51	78	27	0	0	105
Southampton	17	30	0	0	47	17	15	0	0	32	36	58	0	0	94	40	55	0	0	95	43	17	72	0	132
TOTAL	**307**	**194**	**211**	**4**	**716**	**375**	**208**	**282**	**5**	**870**	**430**	**236**	**37**	**1**	**704**	**422**	**296**	**104**	**1**	**823**	**524**	**183**	**128**	**2**	**837**

* Note: Permit totals revised to reflect cancelled permits.
Source: Harford County Dept. of Planning & Zoning, May 2021.
Key: SF = Single Family Dwelling; TH = Townhouse; APT/CO = Apartment/Condominium; MH = Mobile Home

Table 13B

Harford County Population and Households By Middle School District: 2015 - 2019

SCHOOL	2015		2016		2017		2018		2019	
	Households	Population	Households	Population	Households	Population	Households	Population	Households	Population
Aberdeen	13,544	36,272	13,665	36,498	13,774	36,665	13,941	37,073	14,049	37,304
Bel Air	14,205	38,043	14,361	38,357	14,574	38,794	14,640	38,932	14,753	39,175
Edgewood	14,137	37,860	14,224	37,992	14,232	37,884	14,401	38,295	14,512	38,534
Fallston	9,053	24,244	9,369	25,025	9,426	25,092	9,504	25,274	9,578	25,432
Havre de Grace	7,570	20,274	7,609	20,324	7,673	20,425	7,789	20,712	7,849	20,842
Magnolia	8,025	21,492	8,031	21,450	8,070	21,481	8,110	21,568	8,173	21,703
North Harford	10,491	28,097	10,540	28,151	10,596	28,205	10,684	28,412	10,767	28,589
Patterson Mill	6,284	16,830	6,334	16,919	6,422	17,095	6,495	17,271	6,545	17,379
Southampton	10,049	26,913	10,088	26,945	10,133	26,973	10,161	27,022	10,240	27,190
TOTAL	**93,358**	**250,025**	**94,221**	**251,660**	**94,898**	**252,615**	**95,725**	**254,560**	**96,465**	**256,149**

* Note: Population and household figures have been revised to reflect 2010 Census data (April 1 of each year).

Source: Harford County Dept. of Planning and Zoning, May 2020.

FIGURE 3B

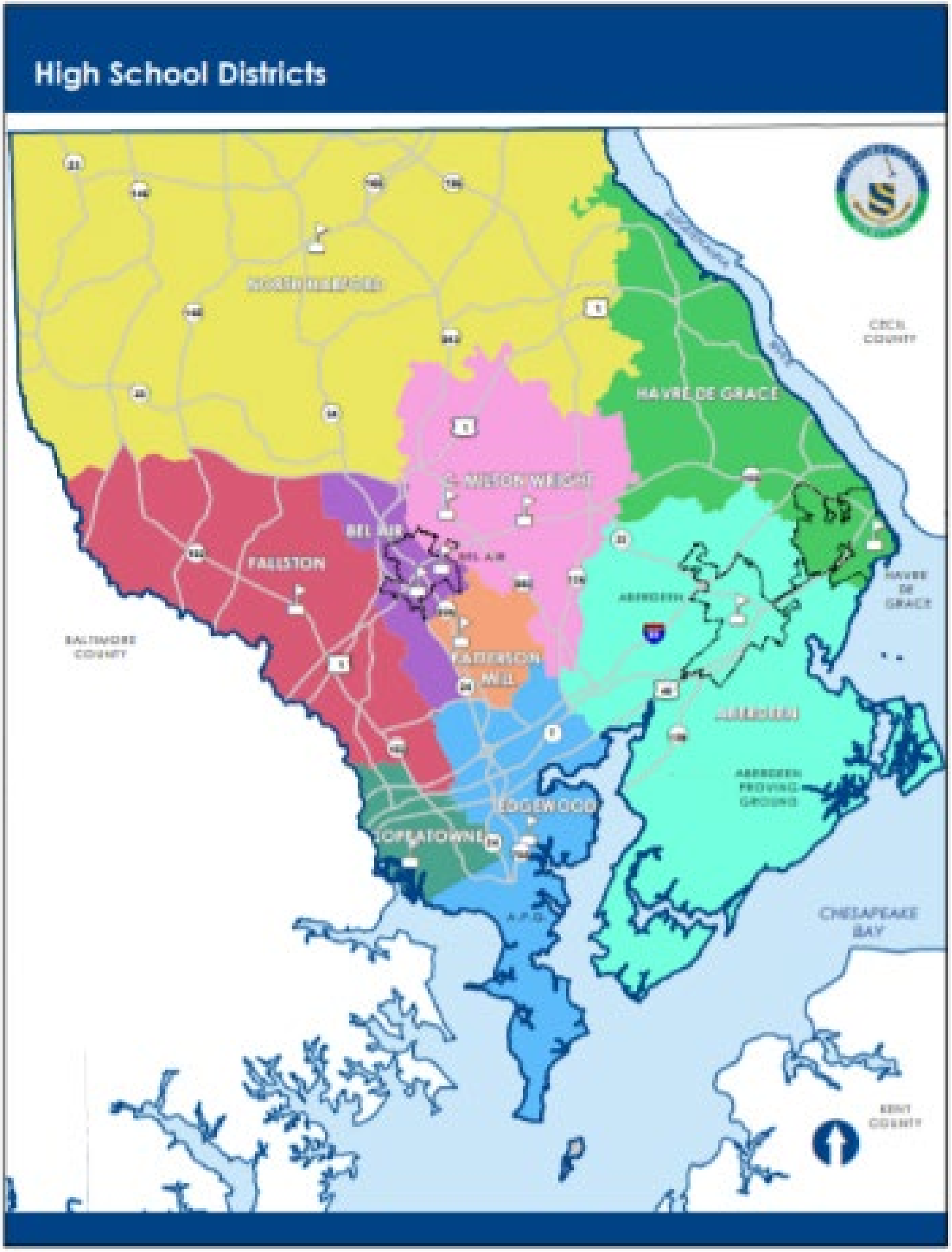

High School Districts
HAVRE DE GRACE
BEL AIR
FALLSTON
PATTERSON MILL
EDGEWOOD
HAVRE DE GRACE
CHESAPEAKE BAY

Table 14B

Harford County High Schools 2020 Utilization Chart									
High School	State-Rated Capacity	Actual 2020 - 2021		Projected 2021 - 2022		2022 - 2023		2023 - 2024	
		ENROLL	%UTIL	ENROLL	%UTIL	ENROLL	%UTIL	ENROLL	%UTIL
Aberdeen	1,720	1,442	84%	1,468	85%	1,482	86%	1,498	87%
Bel Air	1,768	1,557	88%	1,563	88%	1,556	88%	1,564	88%
C. Milton Wright	1,613	1,330	82%	1,361	84%	1,356	84%	1,391	86%
Edgewood	1,716	1,414	82%	1,455	85%	1,473	86%	1,448	84%
Fallston	1,573	977	62%	995	63%	1,002	64%	997	63%
Harford Technical	1,135	993	87%	992	87%	990	87%	989	87%
Havre de Grace	835	699	84%	721	86%	736	88%	751	90%
Joppatowne	1,056	783	74%	792	75%	799	76%	806	76%
North Harford	1,538	1,228	80%	1,234	80%	1,229	80%	1,216	79%
Patterson Mill	992	837	84%	845	85%	831	84%	830	84%
Total	**13,946**	**11,260**	**81%**	**11,426**	**82%**	**11,454**	**82%**	**11,490**	**82%**

Source: Harford County Public Schools & Dept. of Planning and Zoning, November, 2020.

Table 15B

Harford County Modified High School Enrollment Projections								
School District	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Aberdeen	1433	1434	1435	1436	1437	1438	1439	1440
Bel Air	1559	1560	1561	1562	1563	1564	1565	1566
C. Milton Wright	1362	1363	1364	1365	1366	1367	1368	1369
Edgewood	1458	1459	1460	1461	1462	1463	1464	1465
Fallston	974	975	976	977	978	979	980	981
Havre de Grace	664	665	666	667	668	669	670	671
Joppatowne	745	746	747	748	749	750	751	752
North Harford	1256	1257	1258	1259	1260	1261	1262	1263
Patterson Mill	825	826	827	828	829	830	831	832
Total	**12,295**	**12,305**	**12,315**	**12,325**	**12,335**	**12,345**	**12,355**	**12,365**

Table 16B

Harford County Residential Building Permit Activity By High School District: 2016 -2020

HIGH SCHOOL	2016 BUILDING PERMITS ISSUED BY DWELLING TYPE					2017 BUILDING PERMITS ISSUED BY DWELLING TYPE					2018 BUILDING PERMITS ISSUED BY DWELLING TYPE					2019 BUILDING PERMITS ISSUED BY DWELLING TYPE					2020 BUILDING PERMITS ISSUED BY DWELLING TYPE				
	SF	TH	APT/ CO	MH	TOTAL	SF	TH	APT/ CO	MH	TOTAL	SF	TH	APT/ CO	MH	TOTAL	SF	TH	APT/ CO	MH	TOTAL	SF	TH	APT/ CO	MH	TOTAL
Aberdeen	51	16	48	0	115	33	0	144	0	177	39	6	0	0	45	134	139	0	0	273	227	89	0	1	317
Bel Air	62	36	126	0	224	37	33	0	0	70	70	49	37	0	156	59	49	47	0	155	44	0	0	0	44
C.M. Wright	17	30	0	0	47	17	15	0	0	32	36	58	0	0	94	40	55	0	0	95	43	17	72	0	132
Edgewood	8	0	0	0	8	18	22	138	0	178	21	22	0	0	43	15	0	57	0	72	2	0	0	0	2
Fallston	16	47	0	0	63	48	33	0	1	82	64	0	0	0	64	36	0	0	0	36	48	0	56	0	104
Havre de Grace	32	34	0	1	67	57	64	0	1	122	83	43	0	0	126	43	50	0	0	93	19	21	0	0	40
Joppatowne	36	5	0	0	41	34	9	0	0	43	13	48	0	0	61	1	0	0	0	1	5	29	0	0	34
North Harford	56	0	0	3	59	91	0	0	2	93	69	0	0	1	70	46	0	0	1	47	58	0	0	1	59
Patterson Mill	29	26	37	0	92	40	32	0	1	73	35	10	0	0	45	48	3	0	0	51	78	27	0	0	105
TOTAL	**307**	**194**	**211**	**4**	**716**	**375**	**208**	**282**	**5**	**870**	**430**	**236**	**37**	**1**	**704**	**422**	**296**	**104**	**1**	**823**	**524**	**183**	**128**	**2**	**837**

* Note: Permit totals revised to reflect cancelled permits.
Source: Harford County Dept. of Planning & Zoning, May 2021.
Key: SF = Single Family Dwelling; TH = Townhouse; APT/CO = Apartment/Condominium; MH = Mobile Home

Table 17B

Harford County Population and Households By High School District: 2015 - 2019

SCHOOL	2015		2016		2017		2018		2019	
	Households	Population	Households	Population	Households	Population	Households	Population	Households	Population
Aberdeen	13,331	35,798	13,544	36,272	13,665	36,498	13,941	37,073	14,049	37,304
Bel Air	14,147	37,988	14,205	38,043	14,361	38,357	14,640	38,932	14,640	38,932
C. Milton Wright	10,021	26,908	10,049	26,913	10,088	26,945	10,161	27,021	10,161	27,021
Edgewood	13,903	37,333	14,137	37,860	14,224	37,992	14,401	38,295	14,401	38,295
Fallston	9,003	24,176	9,053	24,244	9,369	25,025	9,504	25,274	9,504	25,274
Havre de Grace	7,522	20,198	7,570	20,274	7,609	20,324	7,789	20,712	7,789	20,712
Joppatowne	7,990	21,454	8,025	21,492	8,031	21,450	8,110	21,568	8,110	21,568
North Harford	10,466	28,105	10,491	28,097	10,540	28,151	10,684	28,412	10,684	28,412
Patterson Mill	6,272	16,841	6,284	16,830	6,334	16,919	6,495	17,272	6,495	17,272
TOTAL	**92,655**	**248,800**	**93,358**	**250,025**	**94,221**	**251,660**	**95,725**	**254,560**	**96,465**	**256,149**

* Note: Population and household figures have been revised to reflect 2010 Census data (April 1 of each year).

Source: Harford County Dept. of Planning and Zoning, May 2020.

APPENDIX C

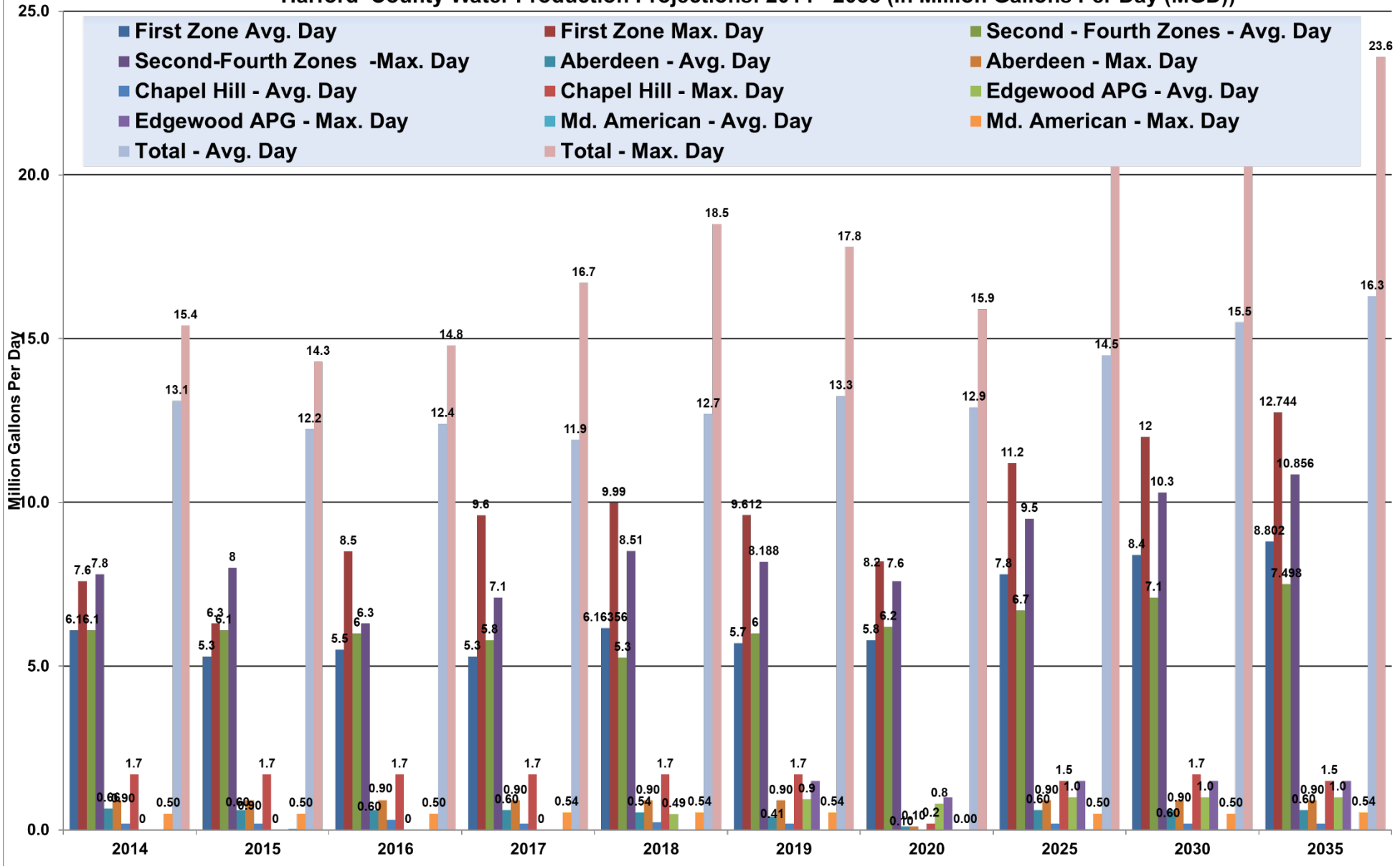
Table 18C

JANUARY - DECEMBER 2020 WATER CONSUMPTION & SEWAGE GENERATION			
Total Number of Accounts	Retail	Water and Sewer	41,117
		Water Only	1,606
		Sewer Only	3,007
	Wholesale	Water Only	16
		Sewer Only	3
	Total	Water and Sewer	45,749
WATER			
Total Number of Water Accounts (VBA)	Retail	Water	42,723
	Wholesale	Water	16
Average Daily Water Production Total Retail and Wholesale Customers	12.89 MGD		
Maximum Day Water Production Total Retail and Wholesale Customers	15.87 MGD		
Average Water Usage per Account – All Retail Accounts	198 MGD		
Average Residential Water Usage per Account – Retail Accounts	171 MGD		
Average Commercial / Industrial Water Usage per Account – Retail Accounts	1252 MGD		
SEWAGE			
Total Number of Sewer Accounts	Retail	Sewer	44,124
	Wholesale	Sewer	3
Average Treated Sewage Flow – Total Retail and Wholesale Customers	12.31 MGD		
Maximum Day Treated Sewage Flow – Total Retail and Wholesale Customers	20.11 MGD		
Average Sewage Generation per Account – All Retail Accounts	198 MGD		
Average Residential Sewage Generation per Account – Retail Accounts	171 MGD		
Average Commercial / Industrial Sewage Generation per Account – Retail Accounts	1252 MGD		

Note: MGD = Million Gallons per Day, GPD = Gallons per Day
Valued Billing Accounts (VBA) - Includes all active valid billing accounts during the selected calendar year.
Valid Consumption Records (VCR) - Includes all valid active billing accounts (VBA) with consumption during the selected calendar year.

Source: 2020 Adequate Public Facilities Report, Dept. of Public Works, Division of Water and Sewer

Table 19C
Harford County Water Production Projections: 2014 - 2035 (in Million Gallons Per Day (MGD))



Source: 2020 Harford County Adequate Public Facilities Report, Dept. of Public Works, Water and Sewer Division.

Table 20C

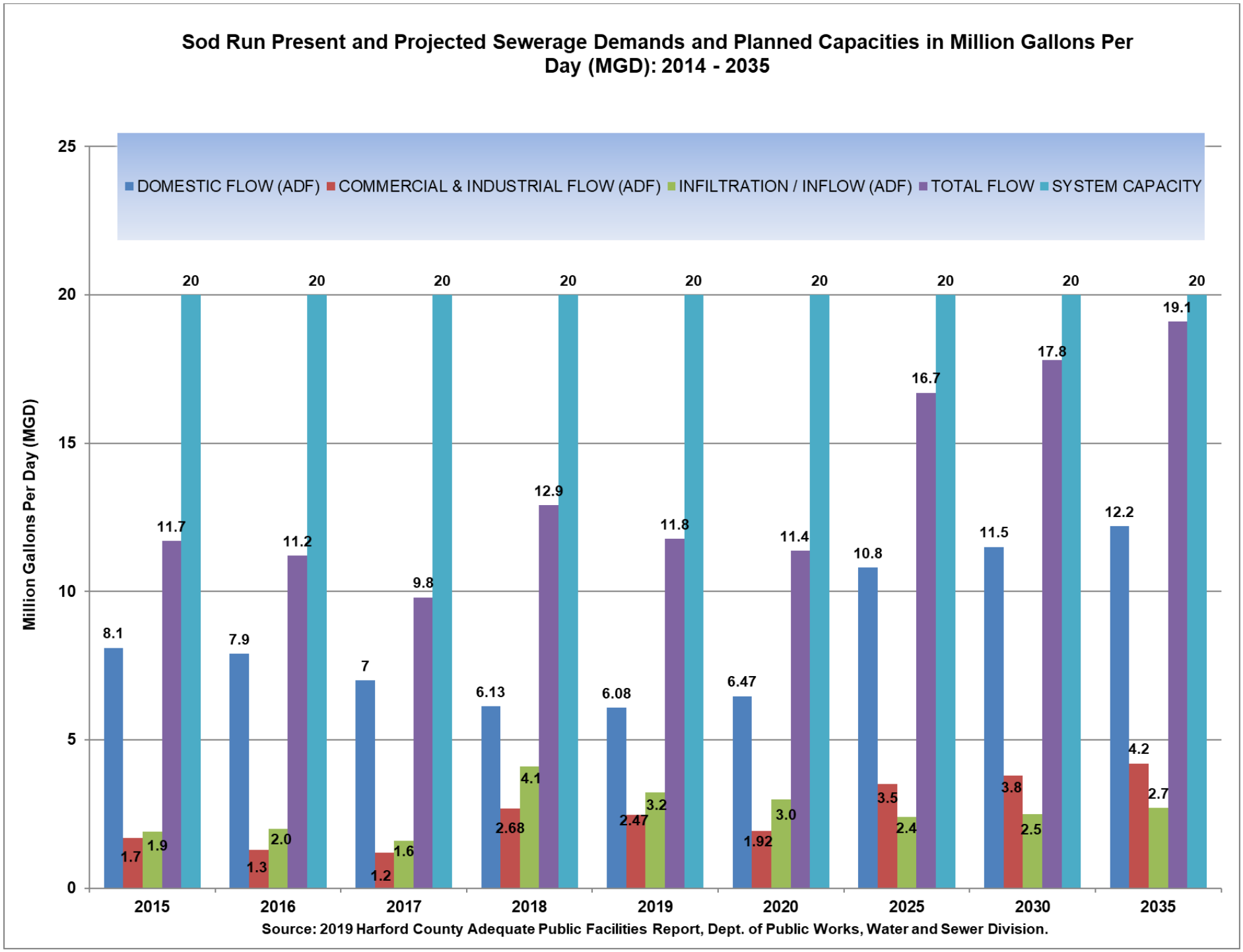

Sod Run Present and Projected Sewerage Demands and Planned Capacities in Million Gallons Per Day (MGD): 2014 - 2035
DOMESTIC FLOW (ADF)
COMMERCIAL & INDUSTRIAL FLOW (ADF)
INFILTRATION / INFLOW (ADF)
TOTAL FLOW
SYSTEM CAPACITY
Million Gallons Per Day (MGD)
25
20
15
10
5
0
2015: 8.1, 1.7, 1.9, 11.7, 20
2016: 7.9, 1.3, 2.0, 11.2, 20
2017: 7, 1.2, 1.6, 9.8, 20
2018: 6.13, 2.68, 4.1, 12.9, 20
2019: 6.08, 2.47, 3.2, 11.8, 20
2020: 6.47, 1.92, 3.0, 11.4, 20
2025: 10.8, 3.5, 2.4, 16.7, 20
2030: 11.5, 3.8, 2.5, 17.8, 20
2035: 12.2, 4.2, 2.7, 19.1, 20
Source: 2019 Harford County Adequate Public Facilities Report, Dept. of Public Works, Water and Sewer Division.

Table 21C
2020-21 EXISTING WATER & SEWER CAPITAL PROJECTS

The Capital Improvement Program establishes projects to expand and improve water and sewer facilities.

PROJECT NO.	PROJECT NAME	PROJECT STATUS
5424	Abingdon WTP Generator & Switchgear Upgrade	Preliminary Design Phase
5425	Central Laboratory Study	Study Complete
6130	Abingdon WTP pH Control System	Preliminary Design Phase
6141	Havre de Grace WTP Solids Handling Building Revisions	90% Design Complete
6152	Comprehensive Water System Study	36% Study Complete
6152	Water Tank Design and Construction	Future Project
6492	Replacement of Water Booster SCADA	95% Design Complete
6660	Water Zone Improvements	On-going
6687	Abingdon Road Water Main	Design Phase Completed
6709	Magnolia Booster Station Improvements - Hydro-Pneumatic Tank Replacement	Value Engineered - Under Redesign
5428	Magnolia Road Sewer Petition	Preliminary Design Phase
5429	Woodridge Manor Area Sewer Petition	Preliminary Design Phase
6019	Sod Run Bio-solids Dewatering Upgrade	Completed
6057	Brentwood Park P.S. Upgrade	100% Design Phase
6104	Storage/Inventory Study	Preliminary Design Phase
6112	Pump Station Bar Screen/Grinder Study	Preliminary Design Phase
6113	Sod Run Ultraviolet Disinfection System	On Hold
6190	Frey's Road Sewer Petition	70% Design Complete
6703	Bynum Run Parallel Phase 6 & 7	Phase 7 - Construction Complete
		Phase 6 - Design is a Future Project
6712	Edgewood Interceptor Parallel	Project on Hold, Awaiting Modeling
6714	Infiltration/Inflow	90% Design Complete
6724	Sod Run WWTP Facility Improvement (Includes Methanol Tank Replacement)	Under Construction
6726	Sewer System Model Study	4% Study Complete
6730	Bill Bass P.S. Force Main Parallel Replacement	50% Design Complete
6737	Towne Center Drive Pump Station Upgrade	Under Construction
FY 21 Submitted	Plum Tree Collector Sewer and Pumping Station	Future Project

APPENDIX D

Table 22D
Signalized Intersection Capacity Analyses
Level Of Service And Delay In Seconds: 2016 - 2019

Intersection	Peak Hour Level Of Service (LOS) Rating					
	A	B	C	D	E	F
Maryland Route 24 @ I-95 Northbound On/Off Ramp					2016 2018	
Maryland Route 24 @ I-95 Southbound Off Ramp		2016 2018				
Maryland Route 7 and U.S. Route 40*				2018	2016	
Maryland Route 924 and Moores Mill Road			2016 2018			
Maryland Route 24 and Trimble Road				2016 2018		
Maryland Route 152 and U.S. Route 1			2016	2018		
Maryland Route 24 and U.S. Route 1				2016 2018		
Maryland Route 152 and Trimble Road				2016 2018		
Maryland Route 24 and Jarrettsville Road			2016 2018			
Maryland Route 152 and Hanson Road		2016 2018				
Maryland Route 152 and Singer Road			2016 2018			
Maryland 22 and Thomas Run Road/Schucks Road			2016 2018			
Maryland 715 and Old Philadelphia Road		2016 2018				
Maryland Route 22 and Brier Hill Road		2017 2019				
Maryland Route 22 and Maryland Route 136			2017 2019			
Maryland Route 24 and Bel Air South Parkway				2017 2019		
Maryland Route 24 and Forest Valley Drive	2017 2019					
Maryland Route 24 and Plumtree Road			2015 2019			
Maryland Route 24 and Ring Factory Road				2017 2019		
MD 924 @ MD 24 North Bound Ramp				2017 2019		
Tollgate Rd @ MD 24 Southbound Ramp		2017	2019			
Maryland Route 543 and U.S. Route 1			2017 2019			
Maryland Route 543 and Maryland Route 22			2017 2019			
Maryland Route 924 and Abingdon Road **			2017 2019			

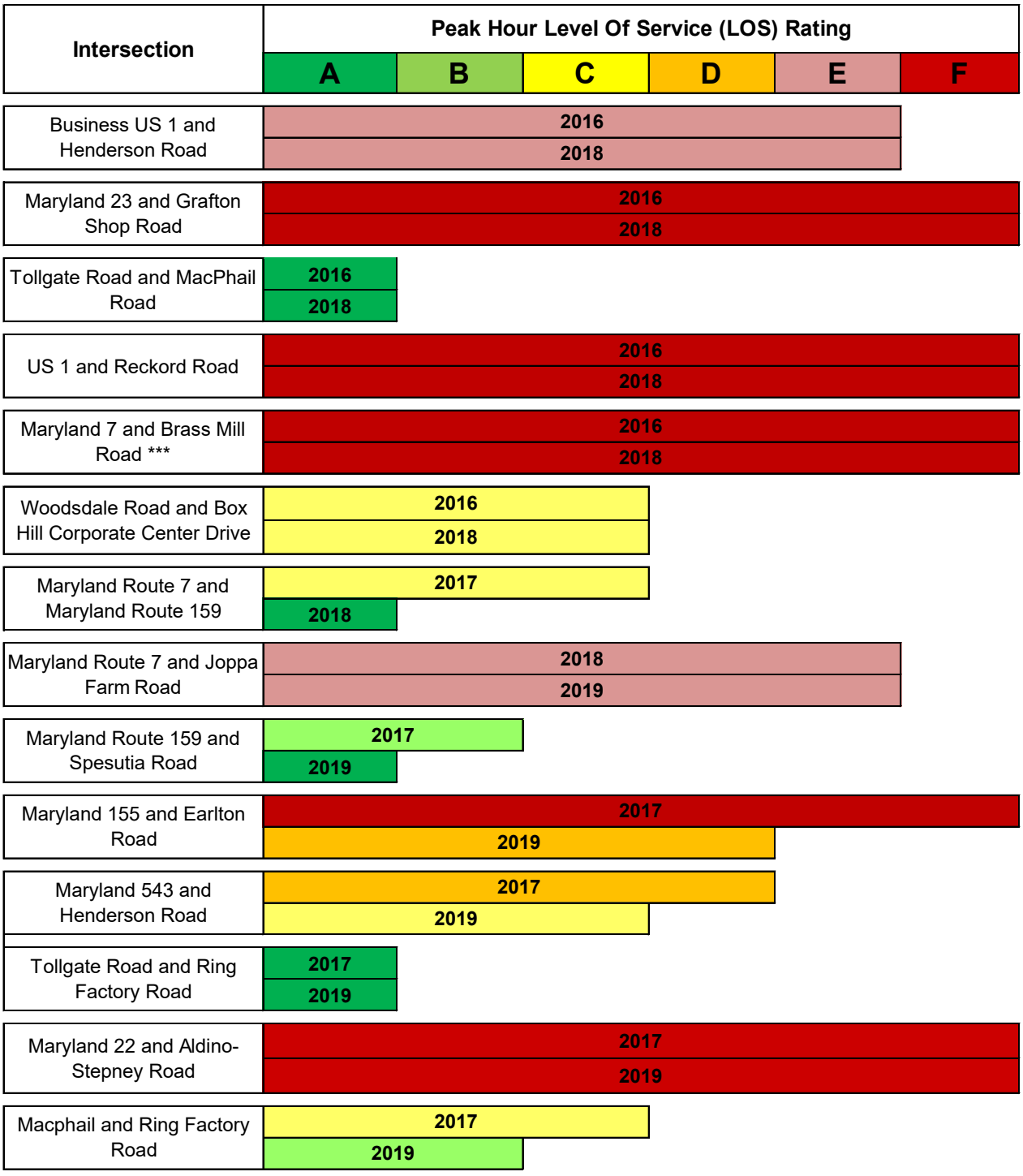
General Definition of Level Of Service Ratings
LOS A – free flow of traffic with no restriction of significant delay (<= 10 seconds).
LOS B – stable flow of traffic with very little restriction or delay (> 10 & <= 20 seconds).
LOS C – stable flow of traffic with low to moderate restriction or delay (>=20 & <= 35 seconds).
LOS D – approaching unstable flow of traffic with moderate to heavy restriction and delay (> 35 & <= 55 seconds).
LOS E – unstable flow of traffic with significant restriction and delay (>55 & <= 80 seconds).
LOS F – forced flow or cases of "grid lock". The flow rate drops significantly (> 80 seconds).

* SHA improvement at this intersection

** Improvement funded by developer at this intersection

Source: Harford CountyCo. Dept. of Planning and Zoning, May 2020.

Table 23D
Unsignalized Intersection Capacity Analyses
Level Of Service And Delay In Seconds: 2015 - 2018

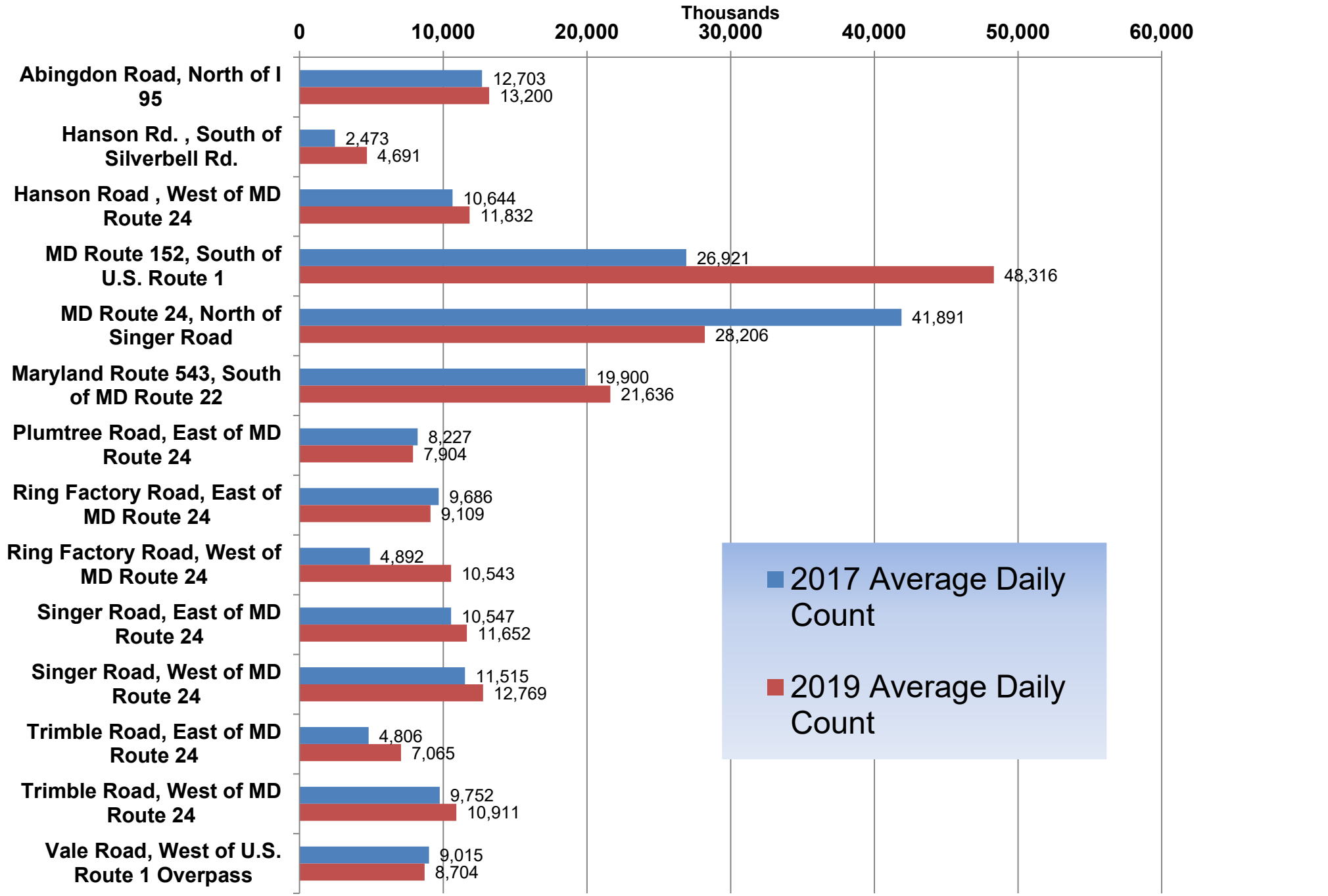


General Definition of Level Of Service Ratings
LOS A – free flow of traffic with no restriction of significant delay (<= 10 seconds).
LOS B – stable flow of traffic with very little restriction or delay (> 10 & <= 20 seconds).
LOS C – stable flow of traffic with low to moderate restriction or delay (>=20 & <= 35 seconds).
LOS D – approaching unstable flow of traffic with moderate to heavy restriction and delay (> 35 & <= 55 seconds).
LOS E – unstable flow of traffic with significant restriction and delay (>55 & <= 80 seconds).
LOS F – forced flow or cases of “grid lock”. The flow rate drops significantly (> 80 seconds).

*** Improvement funded by developer

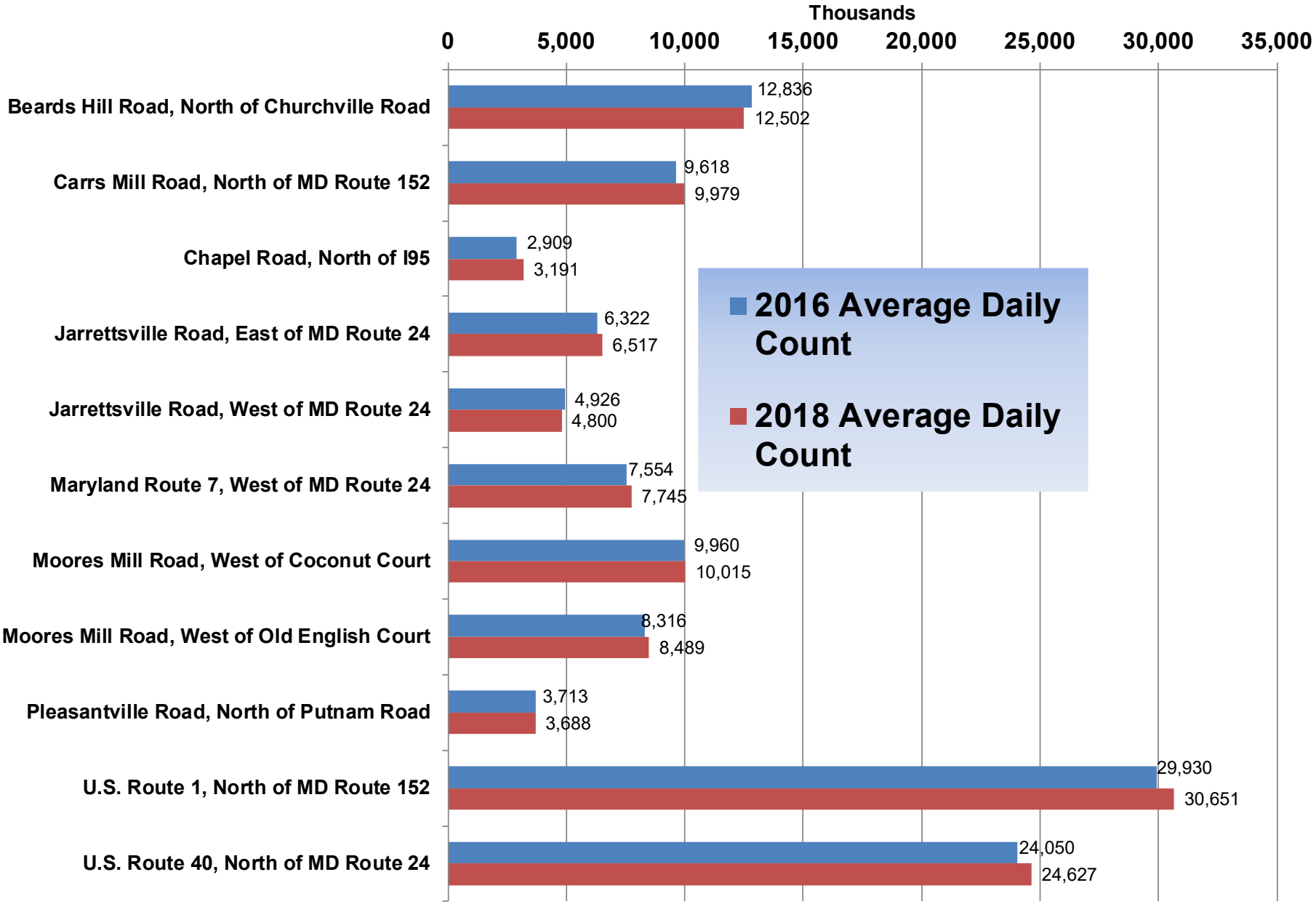
Source: Harford County Dept. of Planning and Zoning, May 2020

Table 24D.1
48 Hour Average Weekday Daily Traffic Volume: 2017 and 2019



Source: Harford County Dept. of Planning and Zoning, May, 2019.

Table 24D.2
48 Hour Average Weekday Daily Traffic Volume: 2016 and 2018



Source: Harford County Dept. of Planning and Zoning, May, 2019.

Table 25D
List of Approved County Capital Projects Funded for Construction in Fiscal Year 2020

Project Name	Project Type
Schucks Road Road Improvements	Upgrade stormwater
Spesutia Road Improvements	Upgrade capacity
Trimble Road (Joppa Road to Garnet Road)	Safety/Capacity Improvements
Woodley Road Extensiton to MD 715	Construction
Water Tower Way and Granary Road	Intersection Improvement Completed
Road Reconstruction and Rehabilitation*	Reconstruct and rehabilitate
Bridge Rehabilitation	Repairs
Bridge and Road Scours	Repairs
Abingdon Road Bridge #169 over CSX	Replacement
Chestnut Hill Bridge #40	Replacement
Grier Nursery Road Bridge #143	Replacement
Phillips Mill Road Bridge #70	Replacement
Hookers Mill Road Bridge	Replacement
Johnson Mill Road Bridge #45	Replacement
Stafford Road Bridge #24	Repairs
Roadways Resurfacing*	Resurfacing
Intersection Improvements*	Safety/Capacity Improvements
Moores Mill Road – US 1 Business to MD 924 (Phase 3)	Upgrade
Tollgate Road West Ring Factory Road to Plumtree Road	Upgrade

*Note: These are ongoing county-wide project activities that include repairs, upgrades, and resurfacing of roads and bridges selected each spring dependent upon severity of roadway problems and cost for repairs.

Table 26D
List of State Consolidated Transportation Program Funded for Construction in Fiscal Year 2020

Project Name	Project Type
US 1 Business Main Street to Hickory Ave.	Resurface/Rehabilitate
MD 924 Plumtree to Ring Factory	Resurface/Rehabilitate
US 40 at MD 7 / MD 159 in Aberdeen (Phase2)	Construction Underway
MD 32 from MD 462 to US 40	Resurface/Rehabilitate
MD 7; MD 24 to Abingdon Road	Safety/Resurfacing Completed
MD 24, Rocks Road	Safety/Resurfacing
MD 23; At Grafton Shop Road Intersection	Safety Improvement Completed
MD 147: At Connolly Road	Widening / Resurfacing Completed

APPENDIX E

2020 RESIDENTIAL PRELIMINARY PLANS

PLAN ID	PLAN NAME	ACREAGE	LOT ACREAGE	TAX MAP 1	PARCEL 1	TOTAL UNITS	SF UNITS	TH UNITS	APT UNITS	ENVELOPE	COMMENTS	PLAT 1	ZONING 1	ZONING 2	TYPE OF USE	DATE APPROVED
457/2019	CHURCH OF RECONCILIATION, THE (LOTS 6-8)	43.63	43.63	0040	0018	3	3	0	0	NO	SUBDIVIDE EXISTING PARCEL 2 TO CREATE THREE (3) LOTS	210/40	AG		RESIDENTIAL	3/3/2020
79/2020	EXETER GREEN LOT 41	5.452	2	0055	0838	1	1	0	0	NO	SUBDIVIDE LOT 39 TO CREATE LOT 41	210/33	RR		RESIDENTIAL	4/20/2020
208/2019	HOOPES, LDS OF (LOTS 4 & 5)	26.862	26.862	0034	0403	2	2	0	0	NO	CREATE (2) SINGLE FAMILY RESIDENTIAL LOTS BY SUBDIVIDING EXISTING LOT 1		AG		RESIDENTIAL	1/9/2020
247/2019	JAMES RUN	111.11	0	0057	0356	577	0	273	304	NO	CREATE 282 LOTS AS A PART OF A MIXED OFFICE PROJECT (HOTEL; 304 MIDRISE APARTMENTS; NURSING HOME/ASSISTED LIVING; 273 TOWNHOMES AND AN EMS FACILITY) 273 TOWNHOUSE LOTS + 9 LOTS=282 TOTAL LOTS		MO		RESIDENTIAL/NON RESIDENTIAL	1/24/2020
	McELWAIN, LDS OF CYNTHIA - LOT 1	76.5	20.5	0002	0007	1	1	0	0	NO	CREATE (1) SINGLE FAMILY RESIDENTIAL LOT FROM AN EXISTING PARCEL		AG		RESIDENTIAL	4/16/2020
279/2020	MCNUTT, LANDS OF TONY & THERESA -LOT 2	2	2	0026	0029	1	1	0	0	NO	CREATE ONE SINGLE FAMILY RESIDENTIAL LOT	211/28	AG		RESIDENTIAL	9/12/2020
244/2020	MILLER, LAND OF VIRGINIA - LOT 2	8.403	4.106	0023	0210	1	1	0	0	NO	REVISE LOT 1 AND CREATE ONE ADDITIONAL SINGLE FAMILY RESIDENTIAL LOT		AG		RESIDENTIAL	9/22/2020
192/2020	MILLER, LANDS OF EDITH - LOT 2	33.68	7.611	0055	0237	1	1	0	0	NO	CREATE ONE LOT FROM AN EXISTING PARCEL		AG		RESIDENTIAL	9/28/2020
381/2019	ROLLING VIEW FARMS - LOT 13	6.563	6.563	0010	0012	1	1	0	0	NO	SUBDIVIDE EXISTING LOT 4 TO CREATE LOT 13	209/81	AG		RESIDENTIAL	1/3/2020
29/2020	SCHWARTZ, LANDS OF CARRIE E. - LOT 5	73.96	27.474	0010	0021	1	1	0	0	NO	SUBDIVIDE EXISTING LOT 2 TO CREATE LOT 5 AND COMBINE 13.585 AC OF LOT 2 WITH A PART OF PARCEL 21		AG		RESIDENTIAL	8/28/2020
502/2020	SHARON STATION OVERLOOK - LOT 1	30.2	2.187	0033	0245	1	1	0	0	NO	CREATE ONE FAMILY CONVEYANCE LOT FROM AN EXISTING PARCEL	211/35	AG		RESIDENTIAL	12/15/2020
367/2019	STARR'S ADDITION TO FALLSTON GLEN - LOTS 4 & 5 / ELBOW BROOK (LOTS 6-11)	90.739	90.739	0048	0063	8	8	0	0	NO	CREATE (8) SINGLE FAMILY RESIDENTIAL LOTS	211/09	AG		RESIDENTIAL	2/13/2020
319/2019	BEL AIR OVERLOOK	43.798	43.798	0048	0116	201	0	131	70	YES	COMBINE MULTIPLE PARCELS AND RE-SUBDIVIDEINTO 4 COMMERCIAL LOTS AND CREATE A HOUSING FOR THE ELDERLY DEVELOPMENT		B3	R1	RESIDENTIAL/NON RESIDENTIAL	9/21/2020
193/2020	GOLDNER, LANDS OF DANIELLE LEE - LOTS 1 & 2	1.94	1.94	0064	0112	2	2	0	0	YES	CREATE TWO SINGLE FAMILY RESIDENTIAL LOTS FROM AN EXISTING PARCEL		R1		RESIDENTIAL	8/7/2020
38/2020	MONTGOMERY WOODS	5.95	0	0064	0139	5	5	0	0	YES	SUBDIVIDE AN EXISTING PARCEL INTO 5 SINGLE FAMILY RESIDENTIAL LOTS		R1		RESIDENTIAL	7/8/2020
521/2019	RIDGELY'S RESERVE	199.85	0	0065	0320	388	200	188	0	YES	CREATE 200 SINGLE FAMILY AND 188 TOWNHOUSE LOTS		R1		RESIDENTIAL	4/28/2020
		760.637	**279.41**			**1194**	**228**	**592**	**374**							

2020 NON RESIDENTIAL PRELIMINARY PLANS

PLAN ID	PLAN NAME	ACREAGE	LOT ACREAGE	TAX MAP 1	PARCEL 1	TOTAL UNITS	SF UNITS	TH UNITS	APT UNITS	ENVELOPE	COMMENTS	PLAT 1	ZONING 1	ZONING 2	TYPE OF USE	DATE APPROVED
56/2019	ABINGDON BUSINESS PARK	326.47	326.47	0061	0158	0	0	0	0	YES	CONSOLIDATE EXISTING PARCELS AND CREATE A PUBLIC ROAD AND NINE LOTS		CI		NON RESIDENTIAL	1/17/2020
418/2019	LAKESIDE BUSINESS PARK - LOT 8	14.57	14.57	0061	0649	0	0	0	0	YES	CONSOLIDATE (3) EXISTING RECORDED LOTS INTO (1) COMMERCIAL LOT	210/21	LI		NON RESIDENTIAL	1/20/2020
		341.04	**341.04**													