

bae urban economics

DRAFT 2020 Comprehensive Plan Fiscal Impact Analysis  
*For the City of Annapolis, Maryland*

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# EXECUTIVE SUMMARY

As part of the Annapolis Comprehensive Plan update, BAE Urban Economics has prepared a fiscal impact analysis of new growth in Annapolis between 2020 and 2040. Among the key features of the Comprehensive Plan are the development and growth projections that serve as the basis for the policies and strategies set forth in it. A fiscal impact analysis is a powerful tool to assess whether the new growth assumed in the plan will strain government services or generate net revenues that allow the government to improve and expand services and invest in economic growth. By 2040, Annapolis is projected to grow by 583 new households and 4,347 new residents. The service population is projected to grow by 4,388. Growth projections are based on population, jobs, and household projections from the Baltimore Metropolitan Council (BMC), Round 9 projections, published in 2016.

## Methodology Overview

This fiscal impact analysis evaluates operating costs and revenues in the General Fund. The analysis uses the Fiscal Year 2020 (FY20) Adopted Budget as a baseline to estimate the current level of service provided by the city government in terms of operating costs. Operating cost projections are based on the growth in either the residential population demand base or the service population demand base, which is the residential population plus 50 percent of jobs. Revenues other than real property tax and income tax revenue were projected similarly, based on an average revenue per chosen demand base. Real property tax and income tax revenue were calculated based on the development assumptions in the Comprehensive Plan. The Annapolis property tax rate is applied to the assumed assessed values of new development. Income tax revenue is based on the property values of new residential development and calculating a minimum income required to purchase or rent a given unit.

An estimate of capital costs is provided, but it is not incorporated into the fiscal impact analysis, as the assumptions behind the calculations are more tenuous and less reliable than the evaluation of operating costs and revenues. However, to the extent that growth will generate capital costs, these are expected to be minimal as Annapolis will not require new, additional major capital infrastructure.

Given the recent COVID-19 outbreak and its potential effects on the economy, various property tax revenue scenarios are tested for impact on the overall growth-related revenue estimate. Although the crisis may impact the fiscal resiliency of the City, it is important to note the fiscal impact is calculated for the next 20 years.

## Summary of Findings

This analysis finds that the growth projected in the Comprehensive Plan update will have an estimated net fiscal impact totaling \$776,000 to the City of Annapolis General Fund by 2040, which is calculated by adding approximately \$3.3 million in new revenues and subtracting

\$2.5 million in new operating costs. Capital costs are estimated to be \$553,600. This is a marginally positive fiscal impact and a sensitivity analysis suggests the fiscal impact could reasonably turn out negative, although this would also be marginal relative to the size of the FY20 adopted budget. This result is explained by the heavily residential development program assumed in the model, which serves as the basis for the fiscal impact.

# INTRODUCTION

This report presents an analysis of the projected net fiscal impact that the population and employment growth envisioned in the City of Annapolis Comprehensive Plan update will have on the City of Annapolis General Fund between 2020 and 2040. Fiscal impact analysis is a powerful tool to assess the revenues and costs associated with new development within a jurisdiction. New homeowners and businesses generate revenues to local governments by paying taxes, fees, and fines. They also bring about new costs for a jurisdiction in the form of new or improved roads, more schools and parks, and increased investment in public safety. These costs are comprised of both operating and capital components; growth can require both new infrastructure and an increase in operating capacity to maintain a given level of service. Fiscal impact analysis allows a jurisdiction to compare the revenues and costs from new growth, which can inform decisions ranging from assessing the feasibility of a new development to updating tax rates and reevaluating existing services.

Fiscal impacts are calculated in terms of impact on the annual budget. In general, the formula for calculating the fiscal impact per land use (i.e. low-density residential, mixed use, etc.) or development type (single-family detached, multi-family, office, etc.) is:

$$\begin{array}{rcccl} \text{Annual Fiscal} & & & & \\ \text{Impact} & = & \text{Revenues} & - & \text{Operating Costs} & - & \text{Capital Costs} \\ \text{(of new growth)} & & \text{(of new growth)} & & \text{(of new growth)} & & \text{(of new growth)} \end{array}$$

A fiscal impact analysis of a comprehensive plan allows jurisdictions to assess the feasibility of the new growth projected in the plan. In coordination with the city and the comprehensive planning team, BAE Urban Economics conducted a thorough fiscal impact analysis for the City of Annapolis to estimate the revenues and costs associated with new growth based on the FY20 adopted budget, the Capital Improvement Program (CIP), and detailed discussions with city department heads and staff. Discussions with city staff focused on how department operations would change in response to new growth, as measured in the revenues and expenditures of each department. These discussions were the basis of deciding how to model revenues and costs with respect to the growth in the Comprehensive Plan.

Critically, a fiscal impact analysis does not account for the economic impacts of the Comprehensive Plan. Most components of the plan are intended to improve the Annapolis economy, whether directly or indirectly. Whether it is through improved environmental and social outcomes or directly through economic development policies, the Comprehensive Plan seeks to make Annapolis a desirably place to live. The economic impacts of the Comprehensive Plan will ultimately be based on more specific notions of, for example, the kinds of new jobs and incomes that come to Annapolis as a result of the plan, and the impact the plan has on resident's incomes, property values and overall standing. The plan details

how the city plans to become more efficient and sustainable, which will also deliver economic benefits. Indeed, there are analyses that model these impacts and are useful to conduct as they would give an indication of future fiscal standing. However, a fiscal impact analysis specifically avoids considering the dynamic impact of the Plan on the economy. Instead, it seeks to determine whether the City is projected to accommodate the plan's assumed level of new growth at the level of service the government currently extends through its operations, staff, and capital infrastructure without raising taxes or other sources of revenue.

Therefore, the dollar value of the fiscal impact is less important than whether the impact is positive or negative, and what the magnitude of the impact is. The fiscal impact is not a prediction of the annual budget levels in FY2040 but rather, an indication of risks or opportunities presented by the deficit or surplus generated by new growth.

# METHODOLOGY

A variety of methodologies were used to project growth-related impacts to different sources of revenue and for the different departments within the City. In general, through meetings and consultations with city staff, components of the FY20 adopted budget were designated as ‘fixed’ or ‘variable’; that is, determinations were made regarding which revenues and costs would be impacted by growth. Ultimately, only revenues and expenditures from the General Fund were analyzed as Enterprise Funds<sup>1</sup> are not impacted by growth, and Internal Service Funds<sup>2</sup> are accounted for in the operating costs of departmental budgets in the General Fund.

Operating cost projections are based on the growth in either the residential population demand base or the service population demand base, which is the residential population plus 50 percent of jobs. Revenues other than real property tax and income tax revenue were projected similarly, based on an average revenue per chosen demand base. Real property tax and income tax revenue were calculated based on the development assumptions in the Comprehensive Plan. The Annapolis property tax rate is applied to the assumed assessed values of new development. Income tax revenue is based on the property values of new residential development and calculating a minimum income required to purchase or rent a given unit.

An estimate of growth-related capital costs and school costs is also provided, but these costs are not incorporated into the fiscal impact analysis itself. The city of Annapolis does not bear any schools costs, as schools are provided by Anne Arundel County. Moreover, as the city is built out, there will be limited new capital costs in terms of major infrastructure, which include roads classified as arterials or higher, and new sewer and water line (not including connections). Sidewalks, road connections to entrances and other site related infrastructure are not typically included in the fiscal impact analysis of a comprehensive plan, where the goal is to establish an order of magnitude for the fiscal impact, and the cost of smaller infrastructure can vary considerably.

The costs of smaller infrastructure, to the extent there are any, depend largely on assumptions about development types and potential sites, which is more information than established currently in the Comprehensive Planning process. It is certainly useful to conduct a fiscal impact analysis with more specific assumptions that are informed by proposed development

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<sup>1</sup> “The Enterprise Funds are used to account for those activities of the City that are financed and operated in a manner similar to private business enterprises where costs and expenses, including depreciation, are recovered principally through user charges. Individual operations that the City has designated as enterprise funds include Water, Sewer, Parking, Transportation, Watershed Restoration, and Refuse funds.”

<sup>2</sup> Internal Services Funds, including Health Insurance, Self-Insurance, Fleet Operations, and Fleet Replacement activities, provide service to the City government, and are paid for primarily through departmental budgets. As a result, increases in operating costs to departmental budgets will account for transfers from those departments to the Internal Service Funds.

types on a given site or in a given area, but it can only be done when there are proposed or finalized land use changes. In fact, fiscal impact analyses are often used to evaluate individual development projects. For the purposes of the current Comprehensive Plan, a fiscal analysis will be ultimately conducted for specific potential development sites to study the impact of potential zoning changes. Nonetheless, a rough estimate of capital costs is provided in this report based on the average spending in the Capital Improvement Plan for FY20 through FY25. As the estimate is less rigorously conceived than the estimates of revenues and operating costs, it is not included in the fiscal impact result.

As shown in the fiscal impact analysis presented in this report, 87.2 percent of the \$80.8 million in City FY20 General Fund revenues are held variable, meaning that these revenues will generally increase in relation to the City’s population and employment growth through 2040. Notably, projecting growth-related real property tax revenues accounts for over 64 percent of potential General Fund revenues based on FY20 levels.

**Table 1: FY20 General Fund Revenues Held Variable**

Source of Revenue	FY20 Revenue Held Variable	FY20 Adopted Budget	% Variable
Taxes (a)	\$ 54,834,000	\$ 54,983,800	99.7%
Licenses & Permits	\$ 3,256,300	\$ 3,256,300	100.0%
Fines & Forfeitures	\$ 435,000	\$ 435,000	100.0%
Interest, Rent, Other	\$ -	\$ 1,549,000	0.0%
Intergovernmental (b)	\$ 6,343,000	\$ 11,565,000	54.8%
Charges for Service	\$ 5,626,500	\$ 5,626,500	100.0%
Other	\$ -	\$ 3,423,500	0.0%
<b>Total</b>	<b>\$ 70,494,800</b>	<b>\$ 80,839,100</b>	<b>87.2%</b>

Notes:

(a) Taxes include real and personal property taxes, and penalties and interest.

(b) Of intergovernmental sources of revenue, only the income tax is projected.

The fiscal impact analysis presented in this report estimates that 53.4 percent of the approximately \$83.0 million in General Fund operating expenses in the FY20 adopted budget are variable, while the remaining expenditures were determined to be unaffected by new growth. Non-staff operating expenditures and staffing costs were analyzed separately. Operating expenditure line items were held fixed or variable depending on if they were determined to be affected by growth.

Similarly, operating costs related to staff salaries, wages, and benefits were projected based on the need for new staff, which was based on the level of employed staff per department in FY20. Certain positions in each department, such as chiefs and directors, were held fixed

while lower level staff were held variable. The percentages of FY20 General Fund expenditures held variable are summarized in Table 2.

**Table 2: FY20 General Fund Expenditures Held Variable**

<b>Department</b>	<b>Variable Expenditures</b>	<b>Variable Staff Costs</b>	<b>FY20 Adopted Budget</b>	<b>% Variable</b>
General Government (a)	\$ 1,363,650	\$ 5,359,113	\$ 30,581,430	22.0%
Police	\$ 2,458,830	\$ 13,336,939	\$ 19,620,830	80.5%
Fire	\$ 1,380,370	\$ 11,894,367	\$ 19,286,270	68.8%
Emergency Management (b)	\$ -	\$ -	\$ 417,520	0.0%
Public Works	\$ 2,386,250	\$ 3,337,587	\$ 7,885,250	72.6%
Parks	\$ 1,597,850	\$ 1,155,655	\$ 5,176,700	53.2%
<b>Total</b>	<b>\$ 9,186,950</b>	<b>\$ 35,083,661</b>	<b>\$ 82,968,000</b>	<b>53.4%</b>

Notes:

(a) General government includes: City Council and the Office of the Mayor, Human Resources, Management Information Technology, Finance, Planning & Zoning, and the Office of Environmental Policy.

(b) Emergency management expenditures were determined to be fixed as they all growth-related needs over the next 20 years will come from non-local allocations.

Operating costs were projected linearly; for each variable line item and staffer within each department, projections of the increased costs generated by new growth were based on the rates of growth in either service population or residential population. The service population, which is defined as the residential population plus 50 percent of jobs, is projected to grow faster over the next 20 years than the growth in the residential population and is a useful proxy to measure the growth-related costs of services provided to residents and workers. For example, public works costs are likely to increase alongside the growth in the service population, as both workers and residents demand public works services. Parks costs, on the other hand, would not be impacted by an increase in workers, and are more appropriately projected by population growth.

A level of service was determined for the non-staff operating expenditures by dividing the amount budgeted for a given variable line item in FY20 by the size of the base year service or residential population. For example, based on the \$320,050 appropriated for supplies<sup>3</sup> in the Planning & Zoning Department, an average \$3.18 is spent per member of the service population (55,763 in 2020). The level of service is multiplied by the growth in the given demand base. Growth projections used in this fiscal impact analysis are discussed in the next section.

Similarly, a level of service for staffing is based on dividing the number of employed staff by the appropriate base year population. For example, based on the 14 'Equipment Operator' positions in the Department of Public Works, there are 0.00025 of them per member of the service population in 2020. This is multiplied by the change in service population to

<sup>3</sup> This budget refers to the line item for "Supplies and Other" within the Department budget for Planning & Zoning. Expenditures within this line item include office supplies, training for staff and memberships.

determine how many new Equipment Operators are needed, which is then multiplied by the total salary and benefits received by each Equipment Operator to determine a cost. Based on an analysis of salaries, it was found that, on average, city staff across all departments receive benefits (i.e. health insurance) valued at 35 percent of their salary. This cost increase is incorporated into salary levels of staff when calculating the costs of growth-related staff needs.

Capital costs are also estimated, although not incorporated into the fiscal impact as the assumptions about growth-related capital needs are less rigorously evaluated than the analysis of operating costs and revenues. While it is very unlikely that the city will require new, additional major capital infrastructure to service growth, there may be increased costs due to additional wear and tear on existing infrastructure. Using the average spending in the CIP between FY20 and FY25 per service population, we estimate how much additional spending in the CIP would be required by the growth in the service population by 2040. It is important to note that more detailed analysis of specific capital costs that are sensitive to development type and land use can be conducted once there are reliable assumptions that can be made. There is no reason, however, to expect that more detailed fiscal impact analyses that are land use- and site-specific will lead to an increase in the estimate of capital costs provided in this report, as it is simply unknown what, if anything, the city would be responsible for in a given development project.

In terms of revenues, real property taxes are calculated directly based on the number of new residential units and nonresidential square footage contained within the comprehensive plan, and their respective market values, which are used as proxies for estimating assessed values. Furthermore, income tax revenue is based on calculating the household incomes needed to purchase or rent the new residential units, and then applying Annapolis' share of Anne Arundel County's income tax rate. All other costs and revenues, such as fines and fees, are projected based on the existing average levels of revenues per service population today.

All calculations presented for costs, revenues and impacts are rounded to the nearest \$1,000.

# PROJECTIONS

Projections of the residential population, jobs, and households are based on growth rates developed by the Baltimore Metropolitan Council (BMC). As shown in Table 3, the residential population of Annapolis is expected to grow by 4,347 between 2020 and 2040, while jobs are projected to grow by 82 in total. Therefore, the service population, which is defined as the residential population plus 50 percent of jobs, is anticipated to grow by 4,388. It is important to note that household growth is projected to increase at a lower rate than population growth, meaning that existing Annapolis households in 2020 will become larger. Using the average household sizes, new households can account for up to 1,478 of the 4,347 new residents, or only one-third of new growth. Therefore, the estimate of income tax revenues in this fiscal impact analysis is conservative as only the incomes of residents in new households are calculated. All projections used in this fiscal impact analysis are based directly on projections within the 2020 Comprehensive Plan.

**Table 3: Summary of Demographic Projections**

Annapolis	Base					Overall Change 2020-2040	% Change 2020-2040
	2020	2025	2030	2035	2040		
Population (a) (b)	40,262	40,765	40,918	43,852	44,609	4,347	10.8%
Households (a) (c)	16,426	16,527	16,868	16,929	16,989	563	3.4%
Avg. Household Size	2.45	2.47	2.43	2.59	2.63	0.17	7.1%
Jobs (d)	31,001	31,026	31,041	31,060	31,083	82	0.3%
Service Population (e)	55,763	56,278	56,438	59,382	60,151	4,388	7.9%

Notes:

- (a) Projections for population and households follow trends published in Round 9 of the BMC forecasts.
- (b) Base year data reflects 2018 estimates from Esri, scaled by the BMC Round 9 annual growth rate from 2015-2020 (0.06%)
- (c) Household projections account for 132 residential units currently in the construction pipeline as of April 1, 2020. Projections based on the BMC trend and Esri base year estimate include an additional 6.65 units (132/20) each year.
- (d) Base year estimate and trends are based on BMC Round 9 estimates, with no adjustments.
- (e) Service population is defined as the residential population plus 50% of jobs.

Source: Baltimore Metropolitan Council, Round 9; Department of Planning & Zoning; Esri; BAE, 2020.

# OPERATING COSTS IMPACT

The impact of new growth on operating costs from 2020 to 2040 is based on expenditures in the General Fund. Expenditures were analyzed by department and summarized in categories including General Government, Police, Fire, Public Works, and Recreation and Parks.

Among General Government expenditures, budget items for Management Information Technology (MIT), Finance, and Planning and Zoning were held variable as the needs for these departments are likely to increase as the city grows, based on discussions with city staff. Projected increases in expenditures in the General Government category were based on the projected growth in service population, as these departments are affected by both residential growth and the presence of jobs and businesses. Providing the same level of service over the

next 20 years to new growth, as represented by the variable non-staff operating expenditures in these departments, will generate approximately an additional \$107,000 in operating costs at plan buildout in 2040. Staffing is also only projected to increase in these departments. Based on the growth in the service population, General Government will need to hire four or five new staffers to maintain the ratio of these staffers to the service population in 2020. The weighted average salary of these positions is \$64,000, for a total cost of approximately \$396,000, including accounting for an additional 35 percent in benefits.

Police operating expenditures are projected based on the growth in households, and no operating expenditures were held fixed. Household growth is chosen as the demand base because public safety costs can reasonably be expected to increase alongside development, as indicated by the Chief of Police. However, the growth-related impact on police costs realistically lies between the development growth and population growth. As a result, growth-related impacts of public safety costs are adjusted in a sensitivity analysis of overall findings later in this report.

Staff needs were projected for all administrative positions, while only the Police Chief, Major, and Captain positions were held fixed in terms of uniformed officers. From 2020 to 2040, police operating expenditures will cost approximately \$84,000. Administrative staff will need to increase by one staffer to maintain the existing level of service, while the number of uniformed officers will need to increase by four or five. In total, including 35 percent for benefits, staffing costs between 2020 and 2040 will be \$457,000.

Growth-related operating costs for the Fire Department by 2040 are slightly below the growth-related operating costs for police. Based on the growth in the service population, Annapolis will need to spend \$81,000 for operations and \$408,000 in staff costs. This includes adding four or five firefighters below the rank of Fire Captain.

The FY20 Department of Public Works budget is subdivided into six categories including Administration, Engineering and Construction, Streets, Traffic Control and Maintenance, Snow, and Facilities. All operating expenditures were projected based on the increase in service population between 2020 and 2040 and maintaining the existing level of service. The projected cumulative operating expenditures over the next twenty years would cost approximately \$188,000. Leadership and management positions within the various departments within Public Works were held fixed, while the rest were projected based on the growth in service population as well. Between 2020 and 2040, this analysis estimates that growth-related Public Works staff costs will be approximately \$444,000, including benefits. This represents hiring approximately five new staff.

Recreation and Parks costs round out the General Fund expenditures. Of the 11 subcategories within the Recreation and Parks budget, only costs for Arts in Public Places are held fixed. Recreation and Parks costs are projected based on the growth in the residential

population as growth in nonresident workers will not generate an additional need. Operating expenditures between 2020 and 2040 are estimated to be \$212,000. Non-management level employees at the Pip Moyer Recreation Center are projected to increase, as well as custodial and administrative parks workers and harbormaster staff costs. In total, including 35 percent benefits, staff costs for Recreation and Parks will cost in total \$125,000 by 2040, representing one to two additional staff. Notably, there are several contractual workers identified in the Recreation and Parks budget, although these staff are accounted for in the projection of contractual services within the operating expenditures, not staff costs.

In total, the cumulative growth-related impact to the General Fund expenditures between 2020 and 2040 is approximately \$2.5 million, as shown in Table 4. This includes \$672,000 in new operating expenditures and \$1.8 million in staff costs. Total projected operating and staffing costs represent a 3.0 percent increase over the FY20 adopted budget levels. The Police and Fire departments represent 59.7 percent of the growth-related operating costs, followed by Public Works (16.5 percent), General Government (15 percent), and Recreation and Parks (8.8 percent).

**Table 4: Growth-Related Operating Costs, 2020-2040**

<b>Department</b>	<b>2020 Adopted Budget</b>	<b>Operating Expenditure Impact, by 2040</b>	<b>Staff Costs Impact, by 2040</b>	<b>Total Impact, by 2040</b>	<b>% Total Impact, by 2040</b>	<b>% Increase since 2020</b>
General Government (a)	\$ 30,581,000	\$ 107,000	\$ 396,000	\$ 503,000	20.1%	1.6%
Police	\$ 19,621,000	\$ 84,000	\$ 457,000	\$ 541,000	21.6%	2.8%
Fire	\$ 19,286,000	\$ 81,000	\$ 408,000	\$ 489,000	19.5%	2.5%
Public Works	\$ 7,885,000	\$ 188,000	\$ 444,000	\$ 632,000	25.3%	8.0%
Recreation and Parks	\$ 5,217,000	\$ 212,000	\$ 125,000	\$ 337,000	13.5%	6.5%
<b>Total</b>	<b>\$ 82,590,000</b>	<b>\$ 672,000</b>	<b>\$ 1,830,000</b>	<b>\$ 2,502,000</b>	<b>100.0%</b>	<b>3.0%</b>

Notes:

(a) General Government includes: City Council and the Office of the Mayor, Human Resources, Management Information Technology, Finance, Planning & Zoning, and the Office of Environmental Policy.

Sources: City of Annapolis, FY 2020 Adopted Budget; BAE, 2020.

# REVENUE IMPACT

The impact of growth on Annapolis General Fund revenues will come primarily from real property taxes, which account for 64 percent of FY20 revenues. The other major source of revenue is intergovernmental transfers, which account for 14.3 percent of FY20 revenues. While some intergovernmental transfers, such as the utility tax or highway tax, are likely to increase over the next 20 years, these are State-based transfers for which analysis is beyond this report. However, income tax revenue is projected, which accounts for nearly 55 percent of intergovernmental transfers.

Real property tax revenue is calculated directly based on an assumption of the future development in Annapolis by 2040 and associated property values. Importantly, proposed land use changes and development types have not yet been finalized in the Comprehensive Plan at the time of the writing of this report, and the assumptions here are subject to change. Iterations of the fiscal impact model can be performed as the planning process advances, of after it is complete.

Income tax is based on the incomes of the households that occupy the new projected development. As a result, income tax revenue projections in this fiscal impact analysis are potentially underestimated as new households do not account for all the population growth Annapolis is projected to experience between 2020 and 2040. The BMC Round 9 projections of population for Annapolis assume an increase in the household size of existing households, which will likely result in an increase in income tax revenue from additional residents in existing households. However, this analysis does not estimate this additional income tax revenue associated with additional residents in existing households due to a lack of information in the projections related to the age, employment, and income of these residents. The income tax revenue calculations shown in this analysis therefore represent a somewhat conservative estimate of income tax revenues attributable to the projected growth. All other revenues to the General Fund are either held fixed or projected by either growth in the service population, residential population, or jobs.

## **Property Tax Revenue Impact of New Growth, 2020-2040**

Property tax revenues are calculated directly based on a preliminary assumption of the development projections in the Annapolis Comprehensive Plan. The Annapolis property tax is applied to the estimated market value of the new development in 2040, which is calculated based on assumptions of rents, sale prices, and vacancy rates. The property tax revenue at buildout in 2040 is shown in order to compare the impact of growth-related operating costs. However, the assessed property values assumed throughout the development period are the market values assumed, which are based on market conditions in FY19 and do not include

inflation. A sensitivity analysis accounting for potential recession-level effects of the Covid-19 crisis on property values is also provided later in this report.

Assumptions for determining the market value of new residential development are shown in Table 5. There will be a total of 600 new homes built. The market value of the for-sale units is based on the market values for new construction from FY19, as reported in the market study for the Annapolis Comprehensive Plan. The market rate values for new construction are higher than the median sale price. The total market value of for-sale units, which is simply the number of units multiplied by the respective sale price by unit type, is \$317.6 million.

The market value of for-rent multifamily units is also based on the rents reported in the market study, and in addition, assumes a five percent vacancy rate and average annual expenses based on the National Apartment Association's '2019 NAA Survey of Operating Income & Expenses in Rental Apartment Communities.' Using a cap rate of 4.75 percent, the estimated

market value of the for-rent multifamily properties is determined. The market value of the all for-rent units, including affordable units, is \$22.0 million.

**Table 5: Assessed Value Assumption for New Residential Units, 2020-2040**

<b>Total New Residential Units *</b>	<b>600</b>
<b>Market-Rate Residential</b>	
<b>For Rent</b>	
Number of New Units	109
Average Monthly Rent (a)	\$1,600
Vacancy Rate	5%
Average Annual Expense per Unit (b)	\$ 8,661
NOI (per unit)	\$ 9,579
<b>For Sale</b>	
New Single Family Homes	69
Sale Price (c)	\$ 700,000
New For-Sale Townhomes	322
Sale Price	\$ 650,000
New Condos	100
Sale Price	\$ 600,000
<b>Summary</b>	
For-Rent Residential NOI	\$ 1,044,111
Residential Capitalization Rate	4.75%
Estimated Market Value	\$ 21,981,000
For-Sale Total Value	\$ 317,599,000

Notes:

- (a) Based on the Q3 2019 Asking rents from the 'Demographic and Economic Profile and Real Estate Market Analysis.'
- (b) Based on the estimated operating costs for mid & hi-rise rental properties from the National Apartment Association's '2019 NAA Survey of Operating Income & Expenses in Rental Apartment Communities.'
- (c) Based on new construction sale price from the 'Demographic and Economic Profile and Real Estate Market Analysis.'

Sources: City of Annapolis; National Apartment Association; BAE, 2020.

The estimated market value of new nonresidential development is based on assumptions of NNN rent (per square foot) from the market study and a 5.0 percent vacancy rate that are used to determine a net operating income (NOI) per square foot. A 6.25 cap rate is applied to the NOI multiplied by the projected increase in nonresidential development. The only nonresidential development projected in the Comprehensive Plan is a net 20,000 square feet increase in the retail inventory and a net 20,000 square feet increase in the office inventory. As shown in Table 6, the estimated market value of new retail development by 2040 is \$8.5 million, and the estimated market value of new office development is \$8.2 million.

**Table 6: Assessed Value Assumptions for New Nonresidential Units, 2020-2040**

<b>Nonresidential</b>	
<b>Retail</b>	
NNN Rent (per sq. ft. per year)	\$ 28.00
Vacancy Rate	5%
NOI (per sq. ft.)	\$ 26.60
Net New Retail (SF)	20,000
<b>Office</b>	
NNN Rent (per sq. ft. per year)	\$ 27.00
Vacancy Rate	5%
NOI (per sq. ft.)	\$ 25.65
Net New Retail (SF)	20,000
<b>Summary</b>	
Retail NOI (a)	\$ 532,000
Nonresidential Capitalization Rate	6.25%
Estimated Market Value	\$ 8,512,000
Office NOI (b)	\$ 513,000
Nonresidential Capitalization Rate	6.25%
Estimated Market Value	\$ 8,208,000

In total, at plan buildout in 2040, the market value of new development, which represents the assessed value for real property tax revenue purposes, is approximately \$356.3 million.

Applying the Annapolis real property tax rate of 0.7380 per \$100 of assessed value generates annual revenue at buildout of \$2.6 million. This is summarized in Table 7.

**Table 7: Annual Real Property Tax Revenue at Plan Buildout, 2040**

	<u>City of Annapolis</u>
Assessed Value of New Res. Development, 2020-2040	\$ 339,580,000
Assessed Value of New Non-Res. Development, 2020-2040	\$ 16,720,000
<b>Assessed Value of Total New Development, 2020-2040</b>	<b>\$ 356,300,000</b>
Property Tax (per \$100 of assessed value)	0.7380
<b>Annual Property Tax Revenue at Plan Buildout</b>	<b>\$ 2,629,000</b>

### Income Tax Revenue Impact of New Growth, 2020-2040

This analysis uses the home sale price and rent assumptions shown in Table 5 above to estimate household incomes among new households in Annapolis and applies Annapolis' share of Anne Arundel County's income tax rate, which is an effective tax rate of 0.7025 percent, to estimate income tax revenues from these households. Income assumptions for the new for-rent units are calculated by assuming a vacancy rate of 5.0 percent and a rent-to-income ratio of 25 percent, which would imply these renters are not cost-burdened. For the new for-sale units, the revenue calculations assume a 20 percent down payment on the median sale price, a fixed 30-year mortgage rate of 4.50 percent, and a monthly mortgage payment to gross monthly income ratio of 28 percent. The effective Annapolis income rate is applied to the incomes calculated using this method and multiplied by the number of new units. Applying this method to new single-family units with an assumed sale price, for example, of \$700,000 would require a household income of \$121,604, which is above the

2019 household median income in Annapolis (\$80,010). Assumptions for growth-related income tax revenue are shown in Table 8.

**Table 8: Growth-related Income Tax Revenue Calculation Assumptions**

<b>Market-Rate Residential</b>	
<b>For Rent</b>	
New For-Rent Units	109
Average Monthly Rent (a)	\$ 1,600
Vacancy Rate	5%
Annual Household Income (b)	\$ 76,800
<b>New Income Tax Revenue (c)</b>	<b>\$ 38,000</b>
<b>For Sale</b>	
<b>New Single Family Homes</b>	
	69
Sale Price (d)	\$ 700,000
Loan Amount (e)	\$ 560,000
Mortgage Rate (f)	4.50%
Loan Term (months)	360
Monthly Payment	\$ 2,837
Annual Income (f)	\$ 121,604
<b>New Income Tax Revenue (g)</b>	<b>\$ 40,000</b>
<b>New Townhomes</b>	
	322
Sale Price (d)	\$ 650,000
Loan Amount (e)	\$ 520,000
Mortgage Rate (f)	4.50%
Loan Term (months)	360
Monthly Payment	\$ 2,635
Annual Income (f)	\$ 112,918
<b>New Income Tax Revenue</b>	<b>\$ 174,000</b>
<b>New Condos</b>	
	100
Sale Price (d)	\$ 600,000
Loan Amount (e)	\$ 480,000
Mortgage Rate (f)	4.50%
Loan Term (months)	360
Monthly Payment	\$ 2,432
Annual Income (f)	\$ 104,232
<b>New Income Tax Revenue</b>	<b>\$ 50,000</b>

Notes:

- (a) Based on the Q3 2019 Asking rents from the 'Demographic and Economic Profile and Real Estate Market Analysis.'
- (b) Assumption of Rent-to-Income ratio: 25.00%
- (c) The Anne Arundel County income tax rate in FY20: 2.81%  
Annapolis' percentage of Anne Arundel County Income Tax: 17.00%
- (d) Based on median sale price from the 'Demographic and Economic Profile and Real Estate Market Analysis.'
- (e) Loan amount assumes 20% down payment.
- (f) Assumes Fixed-rate mortgage.
- (f) Assumption of monthly mortgage payment as percentage of gross monthly income: 28%  
(gross monthly income multiplied by 12 for annual income)

Source: BAE, 2020

As shown in Table 9, Combining the estimated new income tax revenue from new renter-occupied households (\$38,000) and the new income tax revenue from new owner-occupied households (\$264,000) generates a total new incomes tax revenue of \$302,000 between 2020 and 2040.

**Table 9: Growth-related Income Tax Revenue, 2020-2040**

	<b>City of Annapolis</b>
Income Tax Revenue from For-Rent Units	\$ 65,000
Income Tax Revenue from For-Sale Units	\$ 212,000
<b>New Income Tax Revenue</b>	<b>\$ 277,000</b>

Source: BAE, 2020

### **Overall Growth-related Impact to General Fund Revenues, 2020-2040**

Other revenues in the General Fund were also accounted for in the fiscal impact analysis based on dividing FY20 revenues by a given population and multiplying by the growth in that population. Personal property tax revenue between 2020 and 2040 were projected in terms of jobs growth, as personal property is assessed on businesses. Licenses and Permits and Charges for Services revenue were projected by the growth in residential population, while fines and forfeiture revenues were projected by the growth in service population. All other revenues were held fixed. The impact of growth on other revenues between 2020 and 2040 is approximately \$347,000.

Table 10 summarizes the growth-related impact to General Fund revenues. By 2040, new growth will generate an estimated \$3.3 million in revenue. Real property tax revenue

generates 80.2 percent of the total impact, which suggests that the fiscal impact relies heavily on the market value assumptions of new development.

**Table 10: Growth-related Impact to General Fund Revenues, 2020-2040**

Source of Revenue	2020 Adopted Budget (a)	Revenue Impact, by 2040	% Total Impact, by 2040
Real Property Tax (b)	\$ 51,884,000	\$ 2,629,000	80.2%
Personal Property Tax (c)	\$ 2,950,000	\$ 8,000	0.2%
Income Tax (d)	\$ 6,343,000	\$ 302,000	9.2%
License & Permits (e)	\$ 3,256,300	\$ 112,000	3.4%
Fines & Forfeitures (f)	\$ 435,000	\$ 34,000	1.0%
Charges for Service (g)	\$ 5,626,500	\$ 193,000	5.9%
<b>Total</b>	<b>\$ 70,494,800</b>	<b>\$ 3,278,000</b>	<b>100%</b>

Notes:

(a) Revenues shown are only for those revenue sources held variable, so total of FY20 adopted budget levels do not match FY20 General Fund revenues.

(b) Property taxes are calculated based on the projections of new residential development for the Comprehensive Plan. The assumed projected 'development program' in place currently is a placeholder.

(c) Projected based on base year personal property tax revenue per job.

(d) Revenue tax is based on the household revenues of new residential development. As a result, this is a low estimate as new residential development does not account for the entirety of the projected population growth by 2040.

(e) Projected based on base year licenses and permits revenue per resident.

(f) Projected based on base year fines and forfeitures revenue 'service person.'

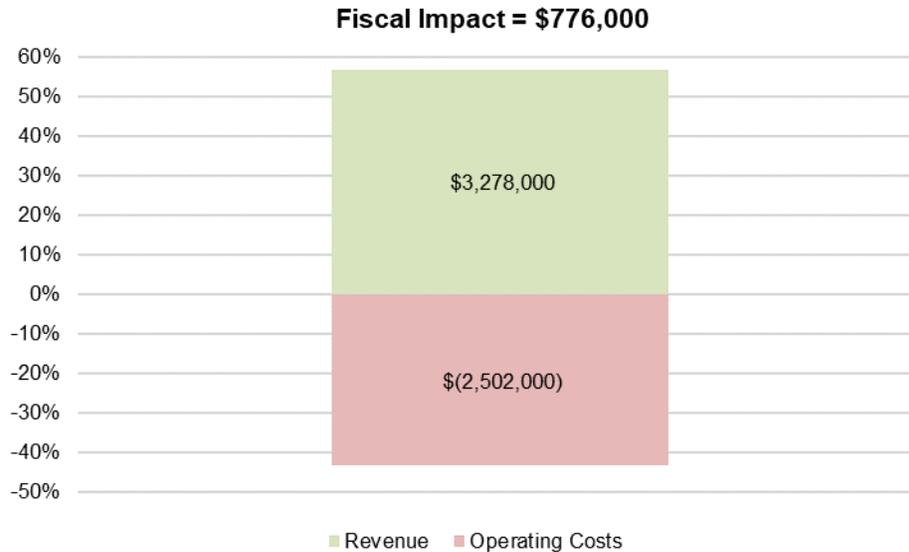
(g) Projected based on base year charges for service revenue per resident.

## FISCAL IMPACT ANALYSIS OF NEW GROWTH

Combining the growth-related impacts to operating costs, capital costs, and revenues determines the overall fiscal impact by 2040. As shown in Figure 1, the fiscal impact of new growth will be \$776,000 by 2040. If new growth generates this fiscal impact by 2040, the impact at plan buildout in 2040 would be a 0.94 percent increase to the FY20 adopted budget of \$82.6 million. While this represents a positive fiscal impact, the impact is marginally above

zero. As the sensitivity analysis will demonstrate, reasonable fluctuations in the operating costs impact and revenue impact can generate a negative fiscal impact.

**Figure 1: Fiscal Impact of New Growth, 2020-2040**



Source: BAE, 2020

This relatively marginal impact is owed to the largely residential development program assumed in the comprehensive plan. Job growth over the next 20 years is projected to be 82 in total, which is a small overall percentage of the increase in the service population, meaning that growth in residents is driving demand for services. Not only this, but also despite the relatively small increase in nonresidential development projected, this development accounts for 16 percent of the increase in property tax revenues. Therefore, residential development is about fiscally neutral, or potentially an overall cost to the City by 2040 based on the level of service provided in 2020, and new nonresidential development is critical to ensuring fiscal sustainability.

Given this finding about the importance of nonresidential development, it would be wise for the city to consider flexibility in zoning as well as assessing the fiscal impact of growth of significant new developments.

### **Sensitivity Analysis of Fiscal Impacts**

The analysis in this report suggests that Annapolis can expect to generate a fiscal impact of \$776,000 over the next 20 years. Given the assumptions in the methodology, there is some error inherent in it. However, we can test realistic limits for vulnerable assumptions to evaluate a range of potential fiscal impacts. As public safety costs may be underestimated, a range of growth rates is applied to operating costs held variable for Police and Fire to assess the impact on growth-related operating costs by 2040. Furthermore, given the recent COVID-19 outbreak

and its potential effects on the economy, various property tax revenue scenarios are tested for impact on the overall growth-related revenue estimate.

Public safety costs are unlikely to grow in relation to the growth in the service population and is more likely to be related to development. However, some of the population growth in Annapolis will come from existing development, so projecting public safety costs by household growth alone may be an underestimate if the public safety departments continues to provide the level of service assumed in this analysis. Thus, the current estimate of the percentage increase to Public Safety costs, which at 2.65 percent is lower than household growth rate, is almost certainly an underestimate. As a result, the sensitivity analysis shows the impact by scaling public safety costs from the current estimated increase of 2.65 percent to an increase of 10.8 percent, which is the population growth rate projected over the next 20 years. Realistically, public safety costs should increase from somewhere between the household growth rate (3.43 percent) and the service population growth rate (7.87 percent). If public safety costs increase by 4.64 percent, the fiscal impact will be exactly \$0. Table 11 shows the fiscal impact of new growth if the revenue estimate is fixed and costs are adjusted to account for variability in public safety costs.

**Table 11: Fiscal Impact Analysis with Public Safety Costs Adjustments**

	Non-Public Safety Growth-related Impact by 2040	Current Estimate - 2.65% Public Safety Costs Projected by HH Growth with Fixed Costs	Low Estimate - 3.43% Public Safety Costs Increase by HH Growth Rate	\$0 Estimate - 4.64% Public Safety Costs Increase by 4.64% (\$0 Fiscal Impact)	High Estimate - 10.8% Public Safety Costs Increase by Pop. Growth Rate
Revenue	\$ 3,278,000	\$ 3,278,000	\$ 3,278,000	\$ 3,278,000	\$ 3,278,000
Operating Costs	\$ (1,472,000)	\$ (2,502,000)	\$ (2,805,543)	\$ (3,278,000)	\$ (5,672,666)
<b>Total Fiscal Impact</b>	<b>\$ 1,806,000</b>	<b>\$ 776,000</b>	<b>\$ 472,457</b>	<b>\$ -</b>	<b>\$ (2,394,666)</b>

Source: BAE, 2020.

Alternatively, the fiscal impacts assuming the operating costs estimate is fixed accounts for adjustments to revenue estimate Table 12. The current COVID-19 public health emergency represents a significant threat to the economy. If the effects of COVID-19 on home values were to have the same effect that the 2008 recession had on home values and the operating costs estimate in this study is held fixed, the fiscal impact of new growth would range between \$107,000 and \$266,887. In Annapolis, based on data obtained from Zillow, the peak of home values was in June 2007, and reached its nadir in June 2012. During this period, home values fell by 25.4 percent. Between June 2007 and June 2009, home values fell by 19.4 percent in Annapolis before levelling off for a few months and declining again overall until June 2012. The revenue estimate in this fiscal impact analysis is adjusted by applying these

respective declines in home values to the real property tax revenue estimate of \$2.5 million by 2040.

**Table 12: Fiscal Impact Analysis with Revenue Adjustments**

<b>Fiscal Impact</b>	<b>Total Projected Growth-related Impact by 2040</b>	<b>Scenario: Market Value of New Growth Declines by 25.4% (a)</b>	<b>Scenario: Market Value of New Growth Declines by 19.4% (b)</b>
Revenue	\$ 3,278,000	\$ 2,609,353	\$ 2,768,887
Operating Costs	\$ (2,502,000)	\$ (2,502,000)	\$ (2,502,000)
<b>Total Fiscal Impact</b>	<b>\$ 776,000</b>	<b>\$ 107,353</b>	<b>\$ 266,887</b>

**% Increase over FY20 Adopted Budget -**

<b>\$</b>	<b>82,590,000</b>	0.9%	0.1%	0.3%
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Notes:

(a) In this scenario, the market value of new growth is adjusted by the decline in market value in Annapolis from the peak sale price in June 2007 to the lowest sale price in June 2012 (-25.43%). This reflects the decline in residential sale prices only, but will be applied to the overall market value of new development that includes new retail and office development.

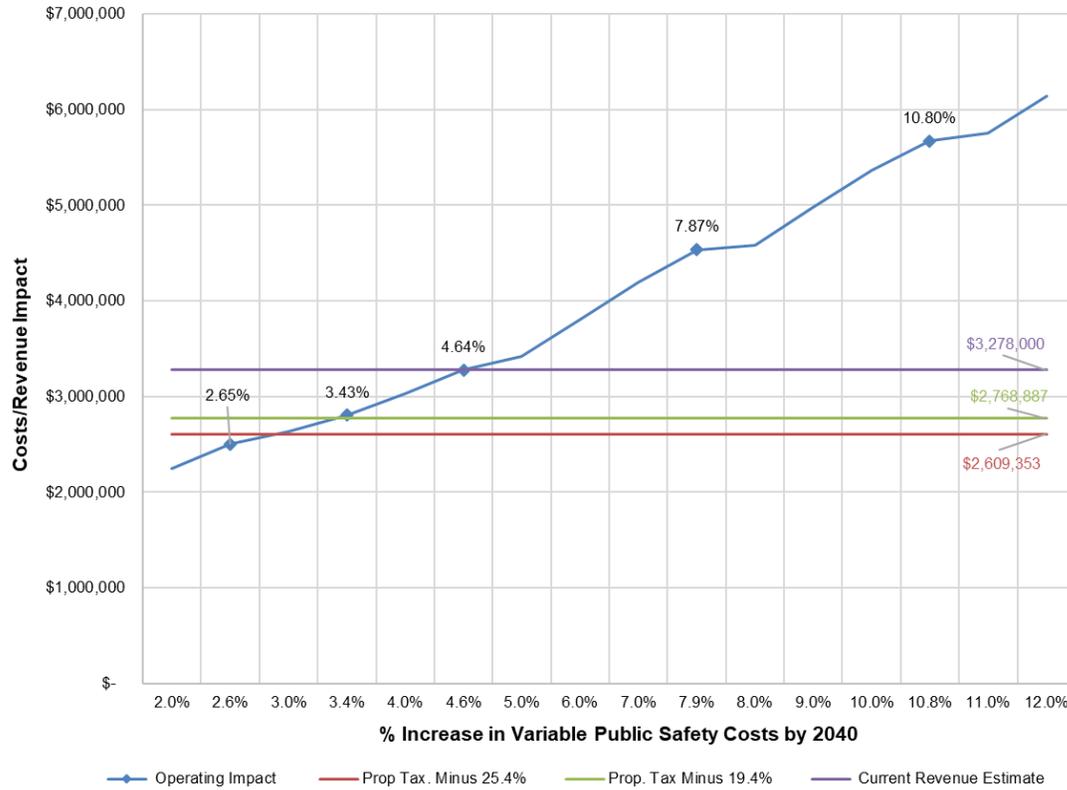
(b) In this scenario, the market value of new growth is adjusted by the decline in market value in Annapolis from the peak sale price in June 2007 to the sale price in June 2009, when prices stabilized briefly before falling again. This decline was - 19.37%. This reflects the decline in residential sale prices only but will be applied to the overall market value of new development that includes new retail and office development.

Source: Zillow; BAE, 2020.

In Figure 2, the sensitivity analysis of operating costs and revenues are combined to show the range of potential impacts. By showing the change in operating costs resulting from increasing growth-related public safety costs from the household growth as well as the three revenue estimates, the ranges of error that generate a fiscally neutral or fiscally positive impact are revealed. The lowest estimate (2.65 percent) of the increase in public safety costs and the low estimate of revenues that assumes peak recession declines in home values would generate essentially a fiscally neutral result. If new growth generates the revenues estimated in this analysis with no recession-related impacts, public safety costs can increase by up to 4.64 percent in order to generate a fiscally neutral result, which would be higher than the

growth in public safety costs currently assumed, but still below the rate of growth in both the service (7.9 percent) and residential population (10.8 percent).

**Figure 2: Sensitivity Analysis**



Source: BAE, 2020

Therefore, it is reasonable to expect that public safety could increase by enough to generate fiscally neutral, or potentially negative results as public safety costs are likely to be increase somewhere between the rates of growth in households and the residential population, and any increase in public safety costs over 4.64 percent would generate negative fiscal result. Indeed, if COVID-19 negatively affects property values, the margin by which public safety costs can increase relative to the household growth rates becomes slimmer. Based on the analysis of the effect the Great Recession had on Annapolis property values, public safety costs increasing at a rate greater than 3.4 percent would yield a negative fiscal result. Notably, the margins of fiscally negative results are still relatively small, and they do not vastly exceed to the magnitude of the marginally positive results that seem likely.

## OTHER COST CONSIDERATIONS

While excluded from the fiscal impact analysis, it was determined that identifying an order of magnitude for growth-related capital costs would be a useful metric for the city to consider, based on discussion with staff. There is no capital outlay in the General Fund, and growth is not expected to generate a need for new major capital infrastructure, such as new water and sewer systems of roads classified as arterial or above. Additionally, while public schools are provided by Anne Arundel County, a high-level cost estimate of students from new growth in Annapolis is provided.

### Capital Costs Impact

In a fiscal impact analysis of a comprehensive plan, capital costs considered are limited to major infrastructure. This includes new, additional roads classified as arterials or higher, as well as new water and sewer lines, pump stations, schools, and vehicles. The reason arterials are the smallest road-type to be considered is that these are the roads for which regular maintenance occurs and can trigger the need for additional staff. Smaller roads and road connections as required by any given development project may or may not accrue as one-time construction costs to the city, and these can be evaluated in more detail with specific assumptions about proposed development projects and their location within the city. Furthermore, the additional inventory of these kinds of transportation improvements do not trigger the need for new staff on their own. That is, projecting staffing costs based on the number of staff employed today is enough to keep up with additional maintenance costs generated by roads smaller than arterials.

In addition, based on discussion with the Department of Public Works, it was determined that the water and sewer systems have adequate capacity to manage the growth projected in this analysis. While new development requires connection to the system, the utilities charge connections fees and ultimately operate as enterprise funds that generated a net profit in FY20. Vehicles are managed through an internal revenue fund and thus growth-related vehicle needs are captured in the analysis of operating costs. As discussed in the next subsection, school-related capital costs are borne by Anne Arundel County Public Schools.

Nonetheless, there may be growth-related capital costs generated by the additional demand for existing infrastructure. Indeed, roads smaller than arterials can require some capital costs based on wear and tear, even if not as regularly as arterials. The FY20 Five-Year Capital Improvement Plan (CIP) provides a useful estimate of the capital costs associated with the existing service population. As shown in Table 13, the average size of the CIP between FY20 and FY25 is \$6.3 million. The average size of the service population served between 2020 and 2025 is 56,020. Dividing the average annual CIP by the average size of the population of the 5-year CIP yields an average capital cost per service population of \$113, which multiplied by the projected growth in the service population between 2020 and 2040 equals a growth-

related increase to the CIP of \$553,600. This is notably less than the net revenues estimated in this fiscal impact analysis (\$776,000), which implies that if the cost and revenue estimates in this analysis are considered accurate, including this estimate of capital costs would still yield a marginal, fiscally positive result.

**Table 13: Estimate of Growth-Related Capital Costs**

<b>Five-Year Capital Improvement Program</b>					
<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>
\$ 4,856,220	\$ 5,675,700	\$ 7,397,500	\$ 11,993,800	\$ 4,050,000	\$ 4,050,000
<b>Average CIP, FY20-FY25</b>		<b>Average Service Population, FY20-FY40</b>			
\$ 6,337,200		56,020			
<b>CIP Spending per Service Pop.</b>		<b>Growth in Service Pop., 2020-2040</b>			
\$ 113		4,894			
<b>Growth-related Increase to CIP</b>					
\$ 553,600					

### School Costs Impact

Anne Arundel County Public Schools (AACPS), which serves Annapolis residents, determines a yield rate for elementary, middle, and high school students based on development type. On average, for the Annapolis High School feeder system, each new household is assumed to generate 0.142 elementary school students, 0.054 middle school students and 0.063 high school students. Applying these rates to the projected 582 new households yields 151 new students. The AACPS budget is based on developing a cost-per-pupil and in FY20, the cost-per-pupil was \$14,473, based on guidelines recommended by the Maryland State Department of Education. The number in new students in Annapolis over the next 20 years will not generate the need for an additional school at any level, so there are no capital costs associated with new growth-related students in Annapolis, although the system overall may

add more schools. As shown in Table 14, multiplying the cost per pupil by the estimated yield from new growth generates an estimated cost of \$2.2 million.

**Table 14: Growth-Related Public School Costs**

<b>New Households, by 2040</b>	<b>582</b>
ES Student Yield (a)	83
MS Student Yield (b)	31
HS Student Yield (c)	37
<b>Total</b>	<b>151</b>
<b>Cost per Pupil (d)</b>	<b>\$ 14,473</b>
<b>Growth-Related Cost, by 2040</b>	<b>\$ 2,181,390</b>

Notes:

- (a) Average Elementary School Student Yield Rate for the Annapolis HS Feeder System: 0.142
- (b) Average Middle School Student Yield Rate for the Annapolis HS Feeder System: 0.054
- (c) Average High School Student Yield Rate for the Annapolis HS Feeder System: 0.063
- (d) The cost per pupil is obtained from the FY20 Anne Arundel Public Schools Operating & Capital Budgets. It is calculated following the guidelines recommended by the Maryland State Department of Education

Source: Student Yield Study for Anne Arundel County Public Schools, November 2019; FY2020 Anne Arundel County Public Schools Approved Operating & Capital Budgets; BAE, 2020

# CONCLUSION

Based on the methodology and assumptions in this fiscal impact analysis, Annapolis is projected to generate a marginally net positive fiscal impact based on the taxes received by new development and the costs it incurs. While the real property tax is large enough to generate most of the revenues needed to accommodate new growth, new growth incurs enough costs that the City will be unable to increase the level of service it provides. However, if there is more nonresidential development than currently projected, even more revenue will be generated without incurring the same level of costs, as nonresidential development demands fewer services from the City. Therefore, the City may be more fiscally resilient if it increases the amount of nonresidential development projected over the next 20 years, although the current residential program yields more or less fiscally neutral results. Critically, over 80.2 percent of the revenues estimated in the fiscal impact come from property taxes paid by new development, even though most of the growth in Annapolis over the next 20 years is explained by the increase to the size of the average Annapolis household.

Nonetheless, the overall marginal findings suggest that, as currently projected, new growth itself is neither a huge winner nor a huge loser for the City based on the current levels of service the City provides. With the skew towards residential development, development itself is not an opportunity for the City, although new growth will help to generate economic activity that will promote economic growth, which is ultimately unaccounted for in a fiscal analysis. Fiscal impact analysis does not consider the impact of growth on income levels, the number of jobs and other measures that reflect the state of the private sector economy, which if positively impacted by growth, would in turn have some effect on the fiscal impact. This dynamic relationship is difficult to model and as a result, fiscal impacts and economic impacts are typically evaluated independently.