MARYLAND
Chamber of Commerce

LEGISLATIVE POSITION:
Favorable
House Bill 1339: Sales and Use Tax and Personal Property Tax-Exemptions- Data Centers
House Ways & Means Committee

Friday, March 6, 2020

Dear Chairwoman Kaiser and Members of the Committee:

Founded in 1968, the Maryland Chamber of Commerce is the leading voice for business in Maryland. We are a statewide coalition of more than 4,500 members and federated partners, and we work to develop and promote strong public policy that ensures sustained economic growth for Maryland businesses, employees and families.

Data centers are secure facilities that house the computer and network equipment that store, process and distribute large amounts of data. They are considered the foundation of today's digital economy and the backbone of the rapidly growing technology sector.

The economic impact—both direct and indirect—of data centers is substantial. According to a report by the U.S. Chamber of Commerce Technology Engagement Center, during construction, a typical data center employs roughly 1,700 workers, provides $77.7 million in wages for those workers, produces $243.5 million in output along the local economy's supply chain and generates $9.9 million in revenue for state and local governments. Every year thereafter, the same data center supports roughly 160 local jobs, paying $7.8 million in wages, injecting $32.5 million into the local economy and generating $1.1 million in state and local revenue.[1]

However, the positive economic impact of data centers does not stop there. The incremental local taxes paid by data centers directly and indirectly support schools and law enforcement, as well as improving local public infrastructure including the expansion of broadband.

House Bill 1339 would provide a sales-and-use tax exemption for the sale of qualified computer technology—including computer equipment, software, servers, routers, connections, and other enabling hardware—for use at a qualified data center. Today, thirty-five states provide data centers with some sort of sales-and-use tax exemptions for the purchases of required equipment. In 2019, Illinois, Indiana, and Alabama passed significant legislation helping to attract data centers to come to their states. Locally, Pennsylvania has also introduced key legislation to expand existing incentives. As well, within the last 5 years, no large-scale

[1] Tim Day and Nam D. Pham, "Data Centers: Jobs and Opportunities in Communities Nationwide," U.S. Chamber of Commerce Technology Engagement Center, 2017, *https://www.uschamber.com/sites/default/files/ctec_datacenterrpt_lowres.pdf*

enterprise data center has located in a state that imposes its full sales tax burden on data center equipment which underlines the importance of this legislation to states seeking to share in the benefits of the digital economy

According to a study conducted by Mangum Economics on behalf of the Maryland Chamber Foundation, the potential economic and fiscal impact of data centers in Maryland is immensely positive. The study analyzed four Maryland counties for economic and fiscal impact of just one large data center locating in their jurisdictions. In their preliminary findings, analysts determined that *a large data center would provide a very high benefit to cost ratio for these counties in terms of the tax revenue it would generate relative to the government services that it and its employees would require*. They estimated the total local benefit to cost ratio as follows:[2]

Table 1: Estimated Benefit/Cost Ratio Associated with a Hypothetical Large Data Center for Select Maryland Counties

Locality	Estimated Annual Tax Revenue Benefit	Estimated Annual Budgetary Cost	Benefit/Cost Ratio
Baltimore County	$5,628,000	$193,000	32.9
Howard County	$4,715,000	$223,000	21.2
Kent County	$2,197,000	$165,000	13.3
Prince George's County	$5,587,000	$193,000	29.0

Further, in their preliminary findings, Mangum Economics determined that a large data center would have a significant annual economic and fiscal impact on these counties during its on-going operational phase:

Table 3: Summary of Annual Economic and Fiscal Impacts from the On-going Operation of a Hypothetical Large Data Center in Select Maryland Counties

Impact	Baltimore	Howard	Kent	Prince George's
Jobs	121	103	105	107
Pay & Benefits	$8,000,000	$7,500,000	$6,100,000	$6,200,000
Economic Output	$38,500,000	$33,900,000	$32,300,000	$32,700,000
County Tax Revenue*	$5,628,000	$4,715,000	$2,197,000	$5,587,000

* Tax revenue estimates include only real and personal property tax, and energy tax revenue paid directly by the data center.

[2] Fletcher Mangum, "Potential Economic Impact of Large Data Center Development in Maryland," Mangum Economics on behalf of the Maryland Chamber Foundation, 2020

A preliminary version of the report, *Potential Impact of Large Data Center Development in Maryland,* is attached to this document. A final report is expected in the coming weeks.

House Bill 1339 would level the playing field and attract data center business to Maryland, supporting the State's mission of being a leader in innovation and investment in cyber and information technology. Further, passage of this legislation would support localities in their efforts to raise the funds necessary for any number of priorities, including meeting their obligations for increased education spending.

For these reasons, the Maryland Chamber of Commerce respectfully requests a **Favorable Report** on HB 1339.

MARCH 2020

MARYLAND Chamber FOUNDATION

POTENTIAL IMPACT OF LARGE DATA CENTER DEVELOPMENT IN MARYLAND

MANGUM economics

4201 DOMINION BOULEVARD, SUITE 114
GLEN ALLEN, VIRGINIA 23060
804-346-8446
MANGUMECONOMICS.COM

Table of Contents

About Mangum Economic Consulting, LLC

Mangum Economics, LLC is a Richmond, Virginia based firm that specializes in producing objective economic, quantitative, and qualitative analysis in support of strategic decision making. Much of our recent work relates to IT & Telecom Infrastructure (data centers, terrestrial and subsea fiber), Renewable Energy, Economic Development, and Tax and Regulatory Policy. Examples of typical studies include

- *The Potential Impact of a Data Center Incentive in Illinois*, 2018;
- *The Impact of Data Centers on the State and Local Economies of Virginia*, 2016, 2018, and 2020;
- *The Economic and Fiscal Contribution that Data Centers Make to Virginia: Spotlight on Prince William County*, 2018;
- *Opportunities for Southside Virginia to Participate in the Cloud Economy*, 2019; and
- *The Economic Development Potential of the MAREA and BRUSA Undersea Fiber Optic Cables*, 2017.

POLICY ANALYSIS

Identify the intended and, more importantly, unintended consequences of proposed legislation and other policy initiatives.

ECONOMIC IMPACT ASSESSMENTS AND RETURN ON INVESTMENT ANALYSES

Measure the economic contribution that business, education, or other enterprises make to their localities.

CLUSTER ANALYSIS

Use occupation and industry clusters to illuminate regional workforce and industry strengths and identify connections between the two.

The Project Team

A. Fletcher Mangum, Ph.D.
Founder and CEO

David Zorn, Ph.D.
Economist

Martina Arel, M.B.A.
Researcher and Economic Development Specialist

Executive Summary

In this report, we assess the economic and fiscal impact potential if just one large new data center were to locate in Maryland. For illustrative purposes, our analysis focuses on four Maryland Counties – Baltimore, Howard, Kent, and Prince George's. The primary findings from that assessment are:

1) A large data center would provide a very high benefit to cost ratio for these counties in terms of the tax revenue it would generate relative to the government services that it and its employees would require. We estimate that the local benefit to cost ratio would be approximately:

Table 1: Estimated Benefit/Cost Ratio Associated with a Hypothetical Large Data Center for Select Maryland Counties

Locality	Estimated Annual Tax Revenue Benefit	Estimated Annual Budgetary Cost	Benefit/Cost Ratio
Baltimore County	$5,628,000	$193,000	32.9
Howard County	$4,715,000	$223,000	21.2
Kent County	$2,197,000	$165,000	13.3
Prince George's County	$5,587,000	$193,000	29.0

2) A large data center would have a significant one-time economic and fiscal impact on these counties during its construction phase.

Table 2: Summary of One-Time Economic and Fiscal Impacts from Construction of a Hypothetical Large Data Center in Select Maryland Counties

Impact	Baltimore	Howard	Kent	Prince George's
Jobs	1,359	1,210	1,432	1,330
Pay & Benefits	$102,200,000	$111,000,000	$93,300,000	$97,300,000
Economic Output	$227,900,000	$229,400,000	$218,400,000	$218,800,000
County Tax Revenue*	$3,200,000	$3,600,000	$3,500,000	$3,000,000

* Tax revenue estimates exclude sales tax revenue

3) A large data center would have a significant annual economic and fiscal impact on these counties during its on-going operational phase.

Table 3: Summary of Annual Economic and Fiscal Impacts from the On-going Operation of a Hypothetical Large Data Center in Select Maryland Counties

Impact	Baltimore	Howard	Kent	Prince George's
Jobs	121	103	105	107
Pay & Benefits	$8,000,000	$7,500,000	$6,100,000	$6,200,000
Economic Output	$38,500,000	$33,900,000	$32,300,000	$32,700,000
County Tax Revenue*	$5,628,000	$4,715,000	$2,197,000	$5,587,000

* Tax revenue estimates include only real and personal property tax, and energy tax revenue paid directly by the data center.

Introduction

In this report, we illustrate the economic and fiscal impact potential if just one large new data center were to locate in Maryland. We describe a hypothetical large data center that is typical of one that might be constructed in Maryland, if Maryland offered incentives for data centers to locate there. We then illustrate the impact of constructing and operating such a data center in four counties in Maryland – Baltimore, Howard, Kent, and Prince George's.

We use the IMPLAN economic impact simulation model to estimate the economic and a portion of the fiscal impacts of the project. The impact of constructing and operating the same facility in different counties varies because different areas are home to different industries that will indirectly benefit from the new development. The more populated and more economically diverse a county economy is, the more dollars stay in the county, and the larger is the economic impact on the county. In addition, different local tax rates also affect the relative magnitude of the fiscal impact.

Hypothetical Large Data Center

The hypothetical large data center that we use in this analysis would require about 20 MW of electrical power capacity and a $215 million investment in construction, exclusive of the cost of the server computing equipment. We assume that $13.4 million is spent on land acquisition, $45.0 million on the construction of the shell of the building, and $156.3 million would be spent for interior construction, cooling and control equipment, and for installation, customization, and calibration of the equipment. Construction of a data center of this scale would typically take 18 to 24 months.

After construction and preparation are completed, the computer equipment can be installed and operations can begin. For purposes of our analysis, we assume that the data center would operate at 50 percent of server capacity and that would imply an investment of $250 million in server computing equipment. We also assume that the data center would hire 25 direct full-time-equivalent employees, not counting contractors that provide services such as security and maintenance, and would purchase $7.4 million of electricity annually for about 97 million kWh of power.

Our assumptions and calculations are based on actual large data center projects in the Mid-Atlantic and elsewhere and on information about expenditures from data center industry sources. Our calculations are consistent with those of the U.S. Chamber of Commerce report on the impact of data center construction in communities nationwide.

Potential Economic and Fiscal Impact in Baltimore County, Maryland

Baltimore County, Maryland is part of the Baltimore–Columbia–Towson metropolitan statistical area. Operational workforce, connectivity, accessibility, and power would be sufficient to support a large data center in the county.

CONSTRUCTION PHASE

By feeding the assumptions detailed in the "Hypothetical Large Data Center" section into the IMPLAN model, we obtain the following estimates of one-time impact from construction. As shown in Table 4, construction of a hypothetical large data center would directly provide a one-time pulse of approximately: 1) 984 jobs, 2) $79.5 million in pay and benefits, and 3) $162.9 million in economic output to Baltimore County.

Taking into account the economic ripple effects that direct impact would generate, we estimate that the one-time impact on Baltimore County would be a total of: 1) 1,359 jobs, 2) $102.2 million in pay and benefits, 3) $227.9 million in economic output, and 4) $3.2 million in local fiscal impact (excluding sales tax revenue).

Table 4: Estimated One-Time Economic and Fiscal Impact on Baltimore County from Construction of a Hypothetical Large Data Center (2020 dollars)

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	984	$79,500,000	$162,900,000
2nd Round Indirect and Induced Economic Activity	375	$22,700,000	$65,000,000
Total Economic Activity	**1,359**	**$102,200,000**	**$227,900,000**
Fiscal Impact			
Local Tax Revenue			**$3,200,000**

OPERATIONS PHASE

Economic Impact

By again feeding the previously detailed assumptions into the IMPLAN model, we obtain the following estimates of the annual impact once the hypothetical large data center is fully operational. As shown in Table 5, we estimate that on-going operation of the facility would provide a direct annual impact of approximately: 1) 25 full-time-equivalent jobs, 2) $2.8 million in pay and benefits, and 3) $18.5 million in economic output to Baltimore County.

Taking into account the economic ripple effects that direct impact would generate, we estimate that the annual impact on Baltimore County would be a total of: 1) 121 jobs, 2) $8.0 million in pay and benefits, and 3) $38.5 million in economic output.

Table 5: Estimated Annual Economic Impact on Baltimore County from the on-going Operation of a Hypothetical Large Data Center (2020 dollars)

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	25	$2,800,000	$18,500,000
2nd Round Indirect and Induced Economic Activity	96	$5,200,000	$20,000,000
Total Economic Activity	**121**	**$8,000,000**	**$38,500,000**

Fiscal Impact

For purposes of our analysis, we assume that the hypothetical large data center would be located in Baltimore County, but outside of any town or other additional taxing jurisdiction within the county. As a result, only county tax rates apply.

During its ongoing operational phase, the hypothetical data center would provide Baltimore County with tax revenue from one primary revenue source – real estate taxes. Based on the previously detailed assumptions and published tax rates, as shown in Table 6 we estimate that the proposed facility would generate $5.6 million in new annual revenue for Baltimore County.

Table 6: Estimated Annual Fiscal Impact on Baltimore County from the on-going Operation of a Hypothetical Large Data Center (2020 dollars)

Revenue Source	Tax Base	Assessment	Tax Rate	Annual Revenue
Real Estate	$215,000,000	100%[1]	$1.10 per $100[2]	$2,365,000
Personal Property	$250,000,000	40%[3]	$2.75 per $100[4]	$2,750,000
Energy	96,732,000 kWh[5]		$0.00530	$513,000
Total Annual Revenue				**$5,628,000**

[1] Data Source: Maryland Department of Assessments and Taxation.

[2] Data Source: Maryland Department of Assessments and Taxation.

[3] Data Source: Maryland Department of Assessments and Taxation. Assumes that personal property would be at the mid-point (*i.e.*, year two) of its depreciation schedule.

[4] Data Source: Maryland Department of Assessments and Taxation.

[5] Calculated as $7.4 million in annual expenditures for electricity divided by $0.0765/KWh (the average industrial electricity rate reported for Maryland by the U.S. Energy Information Agency).

Potential Economic and Fiscal Impact in Howard County, Maryland

Howard County, Maryland is part of the Baltimore–Columbia–Towson metropolitan statistical area. Operational workforce, connectivity, accessibility, and power would be sufficient to support a large data center in the county.

CONSTRUCTION PHASE

By feeding the assumptions detailed in the "Hypothetical Large Data Center" section into the IMPLAN model, we obtain the following estimates of one-time impact from construction. As shown in Table 7, construction of a hypothetical large data center would directly provide a one-time pulse of approximately: 1) 870 jobs, 2) $88.2 million in pay and benefits, and 3) $162.9 million in economic output to Howard County.

Taking into account the economic ripple effects that direct impact would generate, we estimate that the one-time impact on Howard County would be a total of: 1) 1,210 jobs, 2) $111.0 million in pay and benefits, 3) $229.4 million in economic output, and 4) $3.6 million in local fiscal impact (excluding sales tax revenue).

Table 7: Estimated One-Time Economic and Fiscal Impact on Howard County from Construction of a Hypothetical Large Data Center (2020 dollars)

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	870	$88,200,000	$162,900,00
2nd Round Indirect and Induced Economic Activity	340	$22,800,000	$66,500,000
Total Economic Activity	**1,210**	**$111,000,000**	**$229,400,000**
Fiscal Impact			
Local Tax Revenue			**$3,600,000**

OPERATIONS PHASE

Economic Impact

By again feeding the previously detailed assumptions into the IMPLAN model, we obtain the following estimates of the annual impact once the hypothetical large data center is fully operational. As shown in Table 8, we estimate that on-going operation of the facility would provide a direct annual impact of approximately: 1) 25 full-time-equivalent jobs, 2) $2.8 million in pay and benefits, and 3) $18.5 million in economic output to Howard County.

Taking into account the economic ripple effects that direct impact would generate, we estimate that the annual impact on Howard County would be a total of: 1) 103 jobs, 2) $7.5 million in pay and benefits, and 3) $33.9 million in economic output.

Table 8: Estimated Annual Economic Impact on Howard County from the on-going Operation of a Hypothetical Large Data Center (2020 dollars)

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	25	$2,800,000	$18,500,000
2nd Round Indirect and Induced Economic Activity	78	$4,700,000	$15,400,000
Total Economic Activity	**103**	**$7,500,000**	**$33,900,000**

Fiscal Impact

For purposes of our analysis, we assume that the hypothetical large data center would be located in Howard County, but outside of any town or other additional taxing jurisdiction within the county. As a result, only county tax rates apply.

During its ongoing operational phase, the hypothetical data center would provide Howard County with tax revenue from one primary revenue source – real estate taxes. Based on the previously detailed assumptions and published tax rates, as shown in Table 9 we estimate that the proposed facility would generate $4.7 million in new annual revenue for Howard County.

Table 9: Estimated Annual Fiscal Impact on Howard County from the on-going Operation of a Hypothetical Large Data Center (2020 dollars)

Revenue Source	Tax Base	Assessment	Tax Rate	Annual Revenue
Real Estate	$215,000,000	100%[6]	$1.01 per $100[7]	$2,180,000
Personal Property	$250,000,000	40%[8]	$2.54 per $100[9]	$2,535,000
Total Annual Revenue				**$4,715,000**

[6] Data Source: Maryland Department of Assessments and Taxation.
[7] Data Source: Maryland Department of Assessments and Taxation.
[8] Data Source: Maryland Department of Assessments and Taxation. Assumes that personal property would be at the mid-point (*i.e.*, year two) of its depreciation schedule.
[9] Data Source: Maryland Department of Assessments and Taxation.

Potential Economic and Fiscal Impact in Kent County, Maryland

Kent County, Maryland is located near the top of the Eastern Shore of Maryland. It is not part of any of the metropolitan statistical areas that cover other parts of the state. Because of its smaller population, a data center in Kent County would need to draw from surrounding areas for its operational workforce. It is also likely that upgrades would be needed for connectivity and power to support a large data center in the county. Although the economic and fiscal impact from a hypothetical large data center would likely spill over onto surrounding areas, our estimates only address the impact on Kent County specifically.

CONSTRUCTION PHASE

By feeding the assumptions detailed in the "Hypothetical Large Data Center" section into the IMPLAN model, we obtain the following estimates of one-time impact from construction. As shown in Table 10, construction of a hypothetical large data center would directly provide a one-time pulse of approximately: 1) 1,070 jobs, 2) $76.2 million in pay and benefits, and 3) $162.9 million in economic output to Kent County.

Taking into account the economic ripple effects that direct impact would generate, we estimate that the one-time impact on Kent County would be a total of: 1) 1,432 jobs, 2) $93.3 million in pay and benefits, 3) $218.4 million in economic output, and 4) $3.5 million in local fiscal impact.

Table 10: Estimated One-Time Economic and Fiscal Impact on Kent County from Construction of a Hypothetical Large Data Center (2020 dollars)

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	1,070	$76,200,000	$162,900,000
2nd Round Indirect and Induced Economic Activity	362	$17,100,000	$55,500,000
Total Economic Activity	**1,432**	**$93,300,000**	**$218,400,000**
Fiscal Impact			
Local Tax Revenue			**$3,500,000**

OPERATIONS PHASE

Economic Impact

By again feeding the previously detailed assumptions into the IMPLAN model, we obtain the following estimates of the annual impact once the hypothetical large data center is fully operational. As shown in Table 11, we estimate that on-going operation of the facility would provide a direct annual impact of approximately: 1) 25 full-time-equivalent jobs, 2) $2.8 million in pay and benefits, and 3) $18.5 million in economic output to Kent County.

Taking into account the economic ripple effects that direct impact would generate, we estimate that the annual impact on Kent County would be a total of: 1) 105 jobs, 2) $6.1 million in pay and benefits, and 3) $32.3 million in economic output.

Table 11: Estimated Annual Economic Impact on Kent County from the on-going Operation of a Hypothetical Large Data Center (2020 dollars)

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	25	$2,800,000	$18,500,000
2nd Round Indirect and Induced Economic Activity	80	$3,300,000	$13,800,000
Total Economic Activity	**105**	**$6,100,000**	**$32,300,000**

Fiscal Impact

For purposes of our analysis, we assume that the hypothetical large data center would be located in Kent County, but outside of any town or other additional taxing jurisdiction within the county. As a result, only county tax rates apply.

During its ongoing operational phase, the hypothetical data center would provide Kent County with tax revenue from one primary revenue source – real estate taxes. Based on the previously detailed assumptions and published tax rates, as shown in Table 12 we estimate that the proposed facility would generate $2.2 million in new annual revenue for Kent County.

Table 12: Estimated Annual Fiscal Impact on Kent County from the on-going Operation of a Hypothetical Large Data Center (2020 dollars)

Revenue Source	Tax Base	Assessment	Tax Rate	Annual Revenue
Real Estate	$215,000,000	100%[10]	$1.022 per $100[11]	$2,197,300
Total Annual Revenue				**$2,197,300**

[10] Data Source: Maryland Department of Assessments and Taxation.

[11] Data Source: Maryland Department of Assessments and Taxation.

Potential Economic and Fiscal Impact in Prince George's County, MD

Prince George's County, Maryland borders the eastern side of the District of Columbia and is part of the Washington-Arlington-Alexandria, DC-VA-MD-WV metropolitan statistical area. Operational workforce, connectivity, accessibility, and power would be sufficient to support a large data center in the county.

CONSTRUCTION PHASE

By feeding the assumptions detailed in the "Hypothetical Large Data Center" section into the IMPLAN model, we obtain the following estimates of one-time impact from construction. As shown in Table 13, construction of a hypothetical large data center would directly provide a one-time pulse of approximately: 1) 990 jobs, 2) $79.7 million in pay and benefits, and 3) $162.9 million in economic output to Prince George's County.

Taking into account the economic ripple effects that direct impact would generate, we estimate that the one-time impact on Prince George's County would be a total of: 1) 1,330 jobs, 2) $97.3 million in pay and benefits, 3) $218.8 million in economic output, and 4) $3.0 million in local fiscal impact.

Table 13: Estimated One-Time Economic and Fiscal Impact on Prince George's County from Construction of a Hypothetical Large Data Center (2020 dollars)

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	990	$79,700,000	$162,900,000
2nd Round Indirect and Induced Economic Activity	350	$17,600,000	$55,900,000
Total Economic Activity	**1,330**	**$97,300,000**	**$218,800,000**
Fiscal Impact			
Local Tax Revenue			**$3,000,000**

OPERATIONS PHASE

Economic Impact

By again feeding the previously detailed assumptions into the IMPLAN model, we obtain the following estimates of the annual impact once the hypothetical large data center is fully operational. As shown in Table 14, we estimate that on-going operation of the facility would provide a direct annual impact of approximately: 1) 25 full-time-equivalent jobs, 2) $2.8 million in pay and benefits, and 3) $18.5 million in economic output to Prince George's County.

Taking into account the economic ripple effects that direct impact would generate, we estimate that the annual impact on Prince George's County would be a total of: 1) 107 jobs, 2) $6.2 million in pay and benefits, and 3) $32.7 million in economic output.

Table 14: Estimated Annual Economic Impact on Prince George's County from the on-going Operation of a Hypothetical Large Data Center (2020 dollars)

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	25	$2,800,000	$18,500,000
2nd Round Indirect and Induced Economic Activity	82	$3,400,000	$14,200,000
Total Economic Activity	**107**	**$6,200,000**	**$32,700,000**

Fiscal Impact

For purposes of our analysis, we assume that the hypothetical large data center would be located in Prince George's County, but outside of any town or other additional taxing jurisdiction within the county. As a result, only county tax rates apply.

During its ongoing operational phase, the hypothetical data center would provide Prince George's County with tax revenue from three primary revenue sources – real estate tax, personal property tax, and an energy tax on electricity consumption. Based on the previously detailed assumptions and published tax rates, as shown in Table 15 we estimate that the proposed facility would generate $5.6 million in new annual revenue for Prince George's County.

Table 15: Estimated Annual Fiscal Impact on Prince George's County from the on-going Operation of a Hypothetical Large Data Center (2020 dollars)

Revenue Source	Tax Base	Assessment	Tax Rate	Annual Revenue
Real Estate	$215,000,000	100%[12]	$1.00 per $100[13]	$2,150,000
Personal Property	$250,000,000	40%[14]	$2.50 per $100[15]	$2,500,000
Energy	96,732,000 kWh[16]		$0.00969	$937,000
Total Annual Revenue				**$5,587,000**

[12] Data Source: Maryland Department of Assessments and Taxation.

[13] Data Source: Maryland Department of Assessments and Taxation.

[14] Data Source: Maryland Department of Assessments and Taxation. Assumes that personal property would be at the mid-point (*i.e.*, year two) of its depreciation schedule.

[15] Data Source: Maryland Department of Assessments and Taxation.

[16] Calculated as $7.4 million in annual expenditures for electricity divided by $0.0765/KWh (the average industrial electricity rate reported for Maryland by the U.S. Energy Information Agency).

Local Benefit to Cost Ratio

Typically, the largest source of local revenue for a county is property taxes, while the largest source of local expenditures is education. As a result, because the data centers need more equipment than they need employees, they provide a high benefit to cost ratio to localities in terms of the tax revenue they generate relative to the government services that they and their employees require. In this section, we quantify what the benefit to cost ratio would be for Baltimore, Howard, Kent, and Prince George's Counties from a hypothetical large data center.

To quantify the budgetary cost that a hypothetical large data center would impose on these counties, we use data from the Maryland Department of Legislative Services on local government finances, in combination with data from the Maryland Department of Education, U.S. Census Bureau, and U.S. Bureau of Labor Statistics to compute the per-employee cost of educational and non-educational county services for data center employees. This approach focuses on the largest costs that any business imposes on a local government – the costs associated with providing primary and secondary education, and other county services, to the employees of that business.

Table 16 details the calculations used to estimate the annual budgetary cost that a hypothetical large data center would impose on each of these four counties. As shown, we estimate those costs to be approximately $171,000 in Baltimore County, $223,000 in Howard County, $165,000 in Kent County, and $193,000 in Prince George's County.

Table 16: Estimated Annual County Service Costs Imposed by Hypothetical Large Data Center Employees

	Baltimore County	Howard County	Kent County	Prince George's County
Direct Data Center Employment	25	25	25	25
Students per Employee[17]	0.29	0.33	0.23	0.40
Per Student County Contribution to K-12 Education Expenditures[18]	$8,698	$11,115	$9,760	$6,434
Total Education Costs[19]	**$62,807**	**$91,247**	**$54,947**	**$64,013**
County Residents per Employee[20]	2.18	1.88	2.42	2.84
Per Resident Non-Education County Expenditures[21]	$1,985	$2,807	$1,823	$1,812
Total Non-Education Costs[22]	**$108,044**	**$131,639**	**$110,492**	**$128,578**
TOTAL COSTS	**$170,851**	**$222,886**	**$165,439**	**$192,592**

As shown in Table 17, combining the estimates of budgetary cost from Table 16 with data from Tables 6, 9, 12, and 15 on the estimated local revenue that would be generated by a hypothetical large data center shows that the local benefit to cost ratio would be:

- 32.9 in Baltimore County. This means that for every $1.00 in county expenditures that the hypothetical large data center was responsible for generating, it would provide approximately $32.90 in tax revenue.
- 21.2 in Howard County. This means that for every $1.00 in county expenditures that the hypothetical large data center was responsible for generating, it would provide approximately $21.20 in tax revenue.

[17] Data Source: Maryland Department of Education and U.S. Bureau of Labor Statistics. Derived by dividing total county K-12 school enrollment in 2018 by total county employment in 2018.

[18] Data Source: Maryland Department of Legislative Services, "Local Government Finances in Maryland," 2019, and Maryland Department of Education. Derived by dividing total county contribution to K-12 educational expenditures in 2018 by total county K-12 school enrollment in 2018.

[19] Calculated as data center employment, times students per employee, times per student local contribution to K-12 education expenditures.

[20] Data Source: U.S. Census Bureau and U.S. Bureau of Labor Statistics. Calculated by dividing total county population in 2018 by total county employment in 2018.

[21] Data Source: Maryland Department of Legislative Services, "Local Government Finances in Maryland," 2019, and U.S. Census Bureau. Derived by dividing total county non-educational expenditures in 2018 by total county population in 2018.

[22] Calculated as data center employment, times county residents per employee, times per resident non-education expenditures.

- 13.3 in Kent County. This means that for every $1.00 in county expenditures that the hypothetical large data center was responsible for generating, it would provide approximately $13.30 in tax revenue.
- 29.0 in Prince George's County. This means that for every $1.00 in county expenditures that the hypothetical large data center was responsible for generating, it would provide approximately $29.00 in tax revenue.

Table 17: Estimated Benefit/Cost Ratio Associated with a Hypothetical Large Data Center

Locality	Estimated Tax Revenue Benefit	Estimated Budgetary Cost	Benefit/Cost Ratio
Baltimore County	$5,628,000	$171,000	32.9
Howard County	$4,715,000	$223,000	21.2
Kent County	$2,197,000	$165,000	13.3
Prince George's County	$5,587,000	$193,000	29.0

Conclusion

Data centers generate millions of dollars in local tax revenue on an annual basis while imposing few costs on local services. Local fiscal benefit-cost ratios for data centers in the four counties considered in this report range from 13-to-1 to almost 33-to-1. Additionally, the construction of a large data center in Maryland would provide work for over a thousand construction workers, while its subsequent operation would support over 100 jobs and provide millions of dollars in local pay and benefits.