Date: October 30, 2025

Introduction

HR&A Advisors, Inc. (HR&A) conducted an impact analysis for Quantum Maryland, LLC (Catellus) to assess the economic and fiscal impacts from the construction and operations of Quantum Frederick (the Project), a proposed data center master plan in Frederick County, Maryland.

HR&A analyzed the potential impact to Frederick County from the construction of the proposed vertical development program and accompanying infrastructure at full buildout, as well as the subsequent operations following stabilization.[1] HR&A defined full buildout based on the program description provided by Catellus, encompassing 17.4 million square feet (SF) of new data center space built in three phases over a period of 15 years.[2] The operational impacts account for anticipated on-site data center employment and projected on-site electricity consumption.[3] The impact estimates only pertain to the economic activity and revenue generated and do not account for the associated expenses. HR&A used the applicable tax rates for the latest fiscal year to estimate revenues and did not account for (separately or by modelling) any changes in tax regime. All monetary impact numbers, including impacts realized to date and estimated future impacts, are reported in present (2025) dollar value, while all job numbers are reported in full-time equivalent (FTE) employees.

This impact analysis is composed of two components:

1. **Economic impacts to Frederick County**, including jobs, compensation, and economic output (see Appendix A), generated over a phased construction and subsequent operations of the maximum proposed data center buildout.
2. **Fiscal impacts to Frederick County**, including but not limited to those likely to be generated from property taxes from newly constructed data centers, transaction and recordation taxes from land proceeds and debt service, businesses taxes paid by tenants, utility taxes from electricity use, and personal income and sales & use taxes from activities by employees working at the data centers.

[1] When the data centers' occupancy and operations have reached a stable year post construction.

[2] The site is entitled for some office and commercial use, but these are not considered as a part of this analysis.

[3] The anticipated on-site data center employment is based on traffic study done by Wells & Associates for the Project, and on-site electricity demand is informed by projections by Catellus.

Summary of Findings

This analysis estimates the economic and fiscal impacts from construction and operations of data center facilities at Quantum Frederick. The study area of HR&A's analysis is Frederick County. All monetary impacts are reported in 2025-dollar value, and all job numbers are reported in FTE employees.

Economic Impacts Summary

One-Time Construction Economic Impacts (2021-2035):

- Job-Years/Jobs – Quantum Frederick is estimated to yield 122,800 total job-years (or 8,100 average annual jobs[4]) in Frederick County (including multiplier jobs[5], see Appendix A) during the construction period.
- Labor Income – Quantum Frederick is estimated to generate $8.84 billion in total labor income in Frederick County during the construction period.
    - Average annual income per worker during the construction period is estimated to be $72,000 in Frederick County.
- Economic Output – Quantum Frederick is estimated to generate $24.5 billion in total economic output in Frederick County during the construction period.

Table 1: One-Time Construction Economic Impacts – Cumulative, 2021-2035 (FTE/2025$)

Category	Frederick County, MD
Job-Years	
Direct Impact	92,200
Multiplier Impact	30,600
Total Job-Years Supported (FTE)	**122,800**
Average Annual Jobs	
Direct Impact	6,100
Multiplier Impact	2,000
Total Average Annual Jobs (FTE)	**8,100**
Labor Income	
Direct Impact	$6,940,000,000
Multiplier Impact	$1,900,000,000
Total Labor Income	**$8,840,000,000**
Economic Output	
Direct Impact	$18,400,000,000
Multiplier Impact	$6,110,000,000
Total Economic Output	**$24,510,000,000**

Source: HR&A Analysis using IMPLAN.

[4] Since the construction intensity varies by phase, this refers to average number of jobs on an annualized basis over the entire construction period.

[5] Every direct construction job creates an additional 0.33 jobs in Frederick County (i.e. a net multiplier of 1.33).

Annual Ongoing Operational Economic Impacts (following full build out[6]):

- Jobs – Quantum Frederick is estimated to directly create 4,200 jobs[7], which together with multiplier jobs yields 9,800 total jobs in Frederick County during stabilized operations following full buildout.
- Labor income – Quantum Frederick is estimated to generate $1.09 billion in total labor income in Frederick County during stabilized operations following full buildout.
    - Average annual income per worker during stabilized operations is estimated to be $111,000 in Frederick County.
- Economic Output – Quantum Frederick is estimated to generate $5.00 billion in total annual economic output in Frederick County during stabilized operations following full buildout.

Table 2: Ongoing Operational Economic Impacts – Annual, 2036 onwards (FTE/2025$)

Category	Frederick County, MD
Jobs	
Direct Impact	4,200
Multiplier Impact	5,600
Annual Jobs Supported (FTE)	**9,800**
Labor Income	
Direct Impact	$655,000,000
Multiplier Impact	$440,000,000
Annual Labor Income	**$1,095,000,000**
Economic Output	
Direct Impact	$3,270,000,000
Multiplier Impact	$1,730,000,000
Annual Economic Output	**$5,000,000,000**

Source: HR&A Analysis using IMPLAN.

Fiscal Impacts Summary

Fiscal Impacts to Date (2021-2025 year-to-date (YTD)):

- To date, Quantum Frederick has generated about $55.2 million in fiscal revenue for Frederick County through real property tax and taxes on land purchases and past sales. This includes:
    - $1.40 million to Frederick County in recordation taxes on the purchase of Eastalco site in 2021.
    - $2.24 million to Frederick County in total real property tax on land.
    - $6.67 million to Frederick County in recordation taxes on past sales to data center tenants.
    - $44.9 million to Frederick County in recordation taxes on debt service secured by data center tenants to finance their construction.

[6] These economic impacts start materializing after completion of the first construction phase and gradually increase as subsequent data centers come online. The numbers reported here are for stabilization following full buildout.
[7] This includes on-site data center jobs in Quantum Frederick, as well as jobs created for supplying electricity to the site.

Table 3: Fiscal Impacts to Date, 2021 – 2025 YTD (2025$)

Category	Frederick County, MD
Recordation Tax on Purchase of Eastalco Site	$ 1,400,000
Real Property Tax on Land	$ 2,240,000
Recordation Tax on Past Sales (to data center tenants)	$ 6,670,000
Recordation Tax on Debt Service (by data center tenants)	$ 44,900,000
Total Fiscal Impact to Date	**$ 55,210,000**

Source: HR&A Analysis (see Appendix A and B).

One-Time Fiscal Impacts from Construction (2025 YTD-2035):

- In total, Quantum Frederick is projected to generate $139 million in fiscal revenue for Frederick County during the remaining construction period:
  - $28.9 million to Frederick County in recordation taxes on future sales to data center operators.
  - $110 million to Frederick County in recordation taxes on debt service for future construction of data centers.

Table 4: One-Time Construction Fiscal Impacts, 2025 YTD – 2035 (2025$)

Category	Frederick County, MD
Recordation Tax on Real Property (future sales)	$28,900,000
Recordation Tax on Debt Service (future construction)	$110,000,000
Total One-Time Fiscal Impact	**$138,900,000**

Source: HR&A Analysis (see Appendix A and B).

Annual Ongoing Fiscal Impacts during Operations (following full build out[8]):

- In total, Quantum Frederick is estimated to generate $215 million in fiscal revenue for Frederick County on an annual basis following full buildout. This includes:
  - $195 million to Frederick County in real property taxes on improvements.
  - $13.2 million to Frederick County in real property taxes on land.
  - $4.74 million to Frederick County in personal income taxes by on-site employees living in the county.
  - $2.04 million to Frederick County in stormwater management utility fee.

Table 5: Annual Ongoing Fiscal Impacts during Operations, 2036 onwards (2025$)

Category	Frederick County, MD
Real Property Tax on Improvements	$195,000,000
Real Property Tax on Land	$13,200,000
Personal Income Tax (by employees)	$4,740,000
Stormwater Management Utility Fee	$2,040,000
Total Annual Ongoing Fiscal Impact	**$214,980,000**

Source: HR&A Analysis (see Appendix A and B).

[8] As with annual operational impacts, these fiscal impacts start materializing after completion of the first construction phase and gradually increase as subsequent data centers come online. The numbers reported here are for stabilization following full buildout.

About Quantum Frederick

Quantum Frederick is an upcoming master-planned data center campus located in Frederick County, Maryland. Being developed on the site of the former Alcoa Eastalco Works smelting plant, the 2,100-acre project is designed to support hyperscale and AI data center infrastructure. Planned and under construction data centers to be included as part of Quantum Frederick include:

- Rowan – Rowan Digital Infrastructure is currently constructing Bauxite I – a 777,150 SF hyperscale facility across four single-story buildings to be completed by end of 2025. Future developments include Bauxite II and Bauxite III spanning 822,620 SF and 591,913 SF, respectively.
- Aligned – Aligned Data Centers is developing a four-building campus totaling 1.6 million SF. Aligned broke ground on its first building in February 2025.

Table 6 summarizes the development program for data centers, spread across three construction phases.

Table 6: Quantum Frederick Data Center Development Program, by Phase

Development Phase	Data Center Build Area
Phase 1 (2021 – 2025)	3,970,000 SF
Phase 2 (2026 – 2030)	9,490,000 SF
Phase 3 (2031 – 2035)	3,950,000 SF
Total Data Center Build	**17,400,000 SF**

Source: Quantum Frederick Adequate Public Facilities Letter of Understanding (APFD LOU, dated 12.15.2021)

Economic Impact Findings

HR&A reviewed the project entitlement document by Frederick County (APFD LOU, Table 6) and general construction costs for data centers to estimate the Project's construction economic impact – divided across three construction phases. For operational impacts, HR&A reviewed the on-site data center employment informed by traffic study done by Wells & Associates and the projected on-site electricity consumption provided by Catellus for the stabilized year, i.e., following one year of completion of construction for each phase. All economic impacts are reported at the geographic levels or study area of Frederick County. The resulting economic impacts are summarized in Tables 7–13 and reflect direct and multiplier (indirect and induced impacts, see Appendix A for details). For example, in Table 11, although Quantum Frederick employs 4,200 people directly, an additional 5,600 jobs are created in Frederick County through indirect and induced multiplier effects as measured by IMPLAN.

One-Time Construction Economic Impacts

HR&A used the estimated construction spending as an input in the IMPLAN model, assigned to the closest construction-related industry in IMPLAN, to calculate the economic output generated for Frederick County, as shown in Table 7. Upon completion, the Project will generate $24.5 billion in total construction related economic output in Frederick County.

Table 7: One-Time Construction Economic Output, by Phase (2025$)

Category	Frederick County, MD
Phase 1 Construction (2021 - 2025)	
Direct Impact	$4,190,000,000
Multiplier Impact	$1,390,000,000
Phase I Total	$5,580,000,000
Phase 2 Construction (2026 - 2030)	
Direct Impact	$10,000,000,000
Multiplier Impact	$3,330,000,000
Phase II Total	$13,330,000,000
Phase 3 Construction (2031 - 2035)	
Direct Impact	$4,170,000,000
Multiplier Impact	$1,390,000,000
Phase III Total	$5,560,000,000
Overall Construction Economic Output	
Direct Impact	$18,400,000,000
Multiplier Impact	$6,110,000,000
Total Economic Output	**$24,510,000,000**

Source: HR&A Analysis using IMPLAN.

HR&A estimated the number of job-years supported during the construction period by using IMPLAN multipliers in conjunction with the development cost and dividing the number of total job-years by the construction period to calculate the average construction jobs. As shown in Table 8, construction spending for Quantum Frederick generates multiplier jobs across the two study areas, resulting in total 8,100 average annual jobs in Frederick County.

Table 8: One-Time Job-Years from Construction, by Phase, and Average Annual Jobs (FTE)

Category	Frederick County, MD
Phase 1 Construction (2021 - 2025)	
Direct Impact	21,000
Multiplier Impact	7,000
Phase I Total	28,000
Phase 2 Construction (2026 - 2030)	
Direct Impact	50,300
Multiplier Impact	16,700
Phase II Total	67,000
Phase 3 Construction (2031 - 2035)	
Direct Impact	20,900
Multiplier Impact	6,900
Phase III Total	27,800
Overall Construction Job-Years Supported	
Direct Impact	92,200
Multiplier Impact	30,600
Total Job-Years	**122,800**
Overall Average Annual Jobs Supported	
Direct Impact	6,100
Multiplier Impact	2,000
Total Average Annual Jobs	**8,100**

Source: HR&A Analysis using IMPLAN.

Similar to job-years, HR&A estimated the total labor income generated from construction spending using IMPLAN multipliers, summarized in Table 9. The average annual income generated per worker during the construction period is estimated to be $72,000 in Frederick County.

Table 9: One-Time Construction Labor Income, by Phase (2025$)

Category	Frederick County, MD
Phase 1 Construction (2021 - 2025)	
Direct Impact	$1,580,000,000
Multiplier Impact	$433,000,000
Phase I Total	$2,013,000,000
Phase 2 Construction (2026 - 2030)	
Direct Impact	$3,780,000,000
Multiplier Impact	$1,040,000,000
Phase II Total	$4,820,000,000
Phase 3 Construction (2031 - 2035)	
Direct Impact	$1,570,000,000
Multiplier Impact	$431,000,000
Phase III Total	$2,001,000,000
Overall Labor Income Supported	
Direct Impact	$6,940,000,000
Average Annual Income/Worker	$75,300
Multiplier Impact	$1,900,000,000
Average Annual Income/Worker	$62,100
Total Labor Income	**$8,840,000,000**
Average Annual Income/Worker	**$72,000**

Source: HR&A Analysis using IMPLAN.

Annual Ongoing Operational Economic Impacts

The operational impacts will gradually grow in magnitude as each subsequent construction phase is completed and those facilities come online. Therefore, the operational impacts for each post-construction phase are inclusive of impacts generated over previous phase(s).

Following full buildout, Quantum Frederick is expected to generate $5.00 billion annually in total economic output for Frederick County, as described in Table 10. This constitutes 26% of the current dollar 2023 gross domestic product (GDP) for Frederick County.[9]

[9] The current dollar 2023 GDP including all industries was $19.2 billion for Frederick County as reported by U.S. Bureau of Economic Analysis.

Table 10: Annual Ongoing Economic Output from Operations, by Phase (2025$)

Category	Frederick County, MD
Post-Phase 1 (2026 – 2030, annual)	
Direct Impact	$745,000,000
Multiplier Impact	$394,000,000
Phase I Total	$1,139,000,000
Post-Phase 2 (2031 – 2035, annual)	
Direct Impact	$2,530,000,000
Multiplier Impact	$1,340,000,000
Phase II Total (Inclusive of Phase 1)	$3,870,000,000
Post-Phase 3 (2036 onwards, annual)	
Direct Impact	$3,270,000,000
Multiplier Impact	$1,730,000,000
Phase III Total (Inclusive of Phases 1 & 2)	$5,000,000,000

Source: HR&A Analysis using IMPLAN.

As shown in Table 11, direct employment at Quantum Frederick yields multiplier jobs across the three phases. Following full buildout, the Project will generate a total of 9,800 jobs in Frederick County.

Table 11: Annual Ongoing Jobs Supported during Operations, by Phase (FTE)

Category	Frederick County, MD
Post-Phase 1 (2026 – 2030, annual)	
Direct Impact	950
Multiplier Impact	1,300
Phase I Total	2,250
Post-Phase 2 (2031 – 2035, annual)	
Direct Impact	3,200
Multiplier Impact	2,100
Phase II Total (Inclusive of Phase 1)	5,300
Post-Phase 3 (2036 onwards, annual)	
Direct Impact	4,200
Multiplier Impact	5,600
Phase III Total (Inclusive of Phases 1 & 2)	9,800

Source: HR&A Analysis using IMPLAN.

The operations following full buildout are expected to generate a total of $1.09 billion in labor income annually for Frederick County , as shown in Table 12. The average labor income per worker is estimated as $111,000 in Frederick County.

Table 12: Annual Labor Income during Operations, by Phase (2025$)

Category	Frederick County, MD
Post-Phase 1 (2026 – 2030, annual)	
Direct Impact	$149,000,000
Multiplier Impact	$100,000,000
Phase I Total	$249,000,000
Post-Phase 2 (2031 – 2035, annual)	
Direct Impact	$506,000,000
Multiplier Impact	$340,000,000
Phase II Total (Inclusive of Phase 1)	$846,000,000
Post-Phase 3 (2036 onwards, annual)	
Direct Impact	$655,000,000
Multiplier Impact	$440,000,000
Phase III Total (Inclusive of Phases 1 & 2)	$1,095,000,000
Average Annual Income/Worker	$111,000

Source: HR&A Analysis using IMPLAN.

Total Economic Output

Table 13 summarizes the total economic output in net present value (NPV, see Appendix B) terms for Frederick County spanning a 30-year period from the Project's inception in 2021 to 2051. The NPV calculation incorporates the phasing of construction impacts and corresponding increments in operational impacts as and when each construction phase gets completed. The Project is estimated to generate $102 billion in total economic output for Frederick County over its first 30 years.

Table 13: 30-year NPV (2021-2051) of Project's Total Economic Output (2025$)

Category	Frederick County, MD
One-Time Construction Economic Output	$23,600,000,000
Annual Ongoing Operational Economic Output	$78,200,000,000
Total Economic Output	**$101,800,000,000**

Source: HR&A Analysis using IMPLAN.

Fiscal Impact Findings

HR&A compiled the tax revenue generated to date and estimated the one-time taxes emerging from construction and land proceeds, as well as ongoing annual impacts from taxes on property, employee spending, and utilities. The timing of on-time fiscal impacts is matched to the construction phasing, while annual ongoing fiscal impacts follow stabilized operations following construction. All fiscal impacts are reported for the taxing jurisdictions of Frederick County receiving its independent revenue collections. The resulting fiscal impacts are summarized in Tables 14-17. Note that this analysis does not account for increases in County revenue following changes to tax rates and is based on the latest fiscal year (FY) 2025 ended June 30, 2025. Additionally, this analysis does not account for future payments, reimbursements, or incentives independently negotiated between the data center operators and the County.

Fiscal Impacts to Date

As shown in Table 14, the purchase of Eastalco site and subsequent sales to data centers has generated about $8.07 million recordation taxes for Frederick County to date. Further, the debt service raised by the data center tenants to finance construction of data centers raised almost $44.9 million in recordation tax revenue for Frederick County. Catellus has also paid about $2.24 million in real property taxes to the County since its purchase of land back in 2021.

Table 14: Fiscal Impacts to Date, 2021 – 2025 YTD (2025$)

Category	Frederick County, MD
Recordation Tax on Purchase of Eastalco Site	$ 1,400,000
Real Property Tax on Land	$ 2,240,000
Recordation Tax on Past Sales (to data center tenants)	$ 6,670,000
Recordation Tax on Debt Service (by data center tenants)	$ 44,900,000
Total Fiscal Impact to Date	**$ 55,210,000**

Source: HR&A Analysis (see Appendix A and B).

One-Time Construction Fiscal Impacts

All future sales of land to data center operators along with potential financing of construction costs are estimated to bring about $139 million in recordation tax revenues for Frederick County. The details are summarized in Table 15.

Table 15: One-Time Construction Fiscal Impacts, 2025 YTD – 2035 (2025$)

Category	Frederick County, MD
Recordation Tax on Real Property (future sales)	$28,900,000
Recordation Tax on Debt Service (future construction)	$110,000,000
Total One-Time Fiscal Impact	**$138,900,000**

Source: HR&A Analysis (see Appendix A and B).

Annual Ongoing Operational Fiscal Impacts

The Project is estimated to generate $215 million in annual fiscal revenue for Frederick County following full buildout, as detailed in Table 16. This constitutes 16% of total FY 2025 spending budget for Frederick County.[10]

[10] For FY 2025, the total spending budget was $1.34 billion for Frederick County.

Table 16: Annual Ongoing Fiscal Impacts during Operations, 2036 onwards (2025$)

Category	Frederick County, MD
Real Property Tax on Improvements	$195,000,000
Real Property Tax on Land	$13,200,000
Personal Income Tax (by employees)	$4,740,000
Stormwater Management Utility Fee	$2,040,000
Total Annual Ongoing Fiscal Impact	**$214,980,000**

Source: HR&A Analysis (see Appendix A and B).

Total Fiscal Impact

Similar to Table 13, Table 17 summarizes the total fiscal impacts in NPV terms for Frederick County spanning a 30-year period from the Project's inception in 2021 to 2051. The Project is estimated to generate $3.55 billion in total fiscal revenue for Frederick County over its first 30 years.

Table 17: 30-year NPV (2021-2051) of Project's Total Fiscal Impact (2025$)

Category	Frederick County, MD
Fiscal Impact to Date	$55,210,000
One-Time Construction Fiscal Impact	$133,000,000
Annual Ongoing Operational Fiscal Impact	$3,360,000,000
Total Fiscal Impact	**$3,548,210,000**

Source: HR&A Analysis (see Appendix A and B).

General and Limiting Conditions

1. Any person who relies on or otherwise uses this memorandum ("Memo") is required to have first read, understood, and accepted the following disclosures, limitations and disclaimers, and will, by reason of such reliance or other use, be deemed to have read, understood and accepted the same.
2. HR&A Advisors, Inc. ("HR&A") has been engaged and compensated by the Catellus Development Corporation ("Catellus") to prepare this Memo. In preparing this Memo, HR&A has used its independent professional judgment and skills in good faith, subject to the limitations, disclosures, and disclaimers herein.
3. This Memo is based on estimates, assumptions and other information developed by HR&A, Catellus, and its consulting and client partners. Every reasonable effort has been made to ensure that the data contained in this Memo is accurate as of the date of this Memo; however, factors exist that are outside the control of HR&A that may affect the estimates and/or projections noted herein. HR&A neither guarantees any results nor takes responsibility for their actual achievement or continuing applicability, as actual outcomes will depend on future events and circumstances beyond HR&A's control.
4. HR&A reviewed the information and projections provided by third parties using its independent professional judgment and skills in good faith, but assumes no liability resulting from errors, omissions, or any other inaccuracies with respect to the information provided by such third parties referenced in this Memo.
5. HR&A also relied on data provided by or purchased from IMPLAN in order to generate estimates of employment and economic output. HR&A assumes no liability resulting from errors, omissions, or any other inaccuracies with respect to the information provided by this party.
6. HR&A based projections on Project information from the Catellus, publicly available data sources, and/or from performance metrics of similar developments that are confidential in nature. HR&A did not independently verify these numbers.
7. In addition to relying on data, information, projections, and forecasts of others as referred to above, HR&A has included in this Memo estimates and assumptions made by HR&A that HR&A believes are appropriate, but HR&A makes no representation that there will be no variances between actual outcomes and such estimates and assumptions.
8. No opinion is intended to be expressed and no responsibility is assumed for any matters that are legal in nature or require legal expertise or specialized knowledge beyond that of a real estate consultant.
9. Many of the figures presented in this report will be rounded to three significant digits. HR&A disclaims any and all liability relating to rounding errors.
10. If the Memo is referred to or included in any offering material or prospectus, the Study shall be deemed to have been included for informational purposes only and its use shall be subject to these General and Limiting Conditions. HR&A, its directors, officers and employees have no liability to recipients of any such offering material or prospectus.
11. This Memo is qualified in its entirety by and should be considered in light of these General and Limiting Conditions. By use of this Memo each party that uses this Memo agrees to be bound by all of the General and Limiting Conditions stated herein.

Appendix A: Methodology

Economic Impact

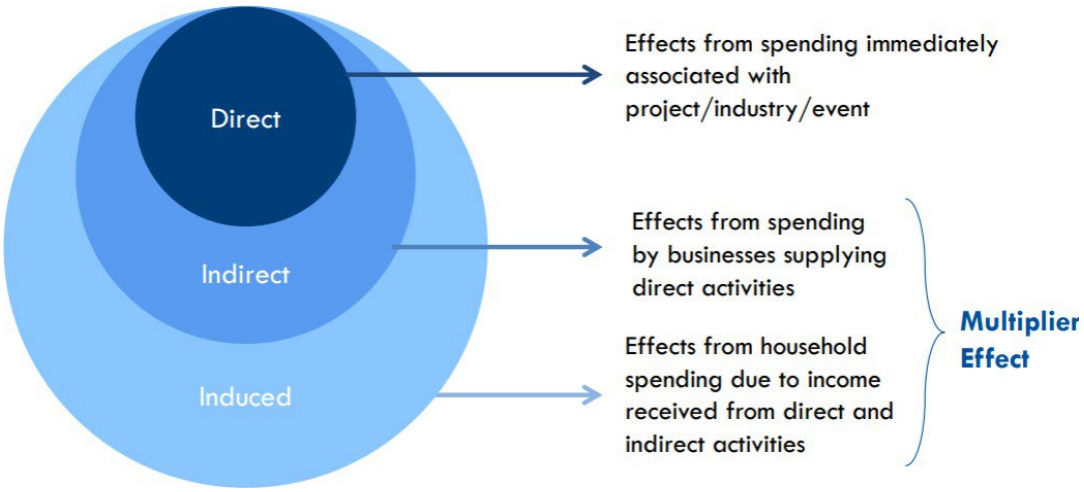
HR&A utilized the IMpact analysis for PLANning (IMPLAN) input-output model, created by MIG, Inc., to analyze the Project's economic impacts from annual ongoing operations. For each dollar of spending in the economy, IMPLAN traces the pattern of commodity purchases and sales between 528 industries within the specified geography. The IMPLAN model is used to conduct economic impact analyses by leading public and private sector organizations across the United States.

The economic impact analysis measures the benefits of economic activity on a one-time basis for an ongoing (annual) basis, and it is expressed in the form of jobs, income, value added, and economic output:

- **Jobs (Full-Time Employment, or "FTE")** - The number of full time-equivalent employees (defined as 2,080 hours per year).
- **Labor Income (Employee Compensation)** - The total payroll cost of workers, defined as salary + benefits and other supplemental costs.
- **Economic Value Added (GDP Contribution)** – Equivalent to the contribution to GDP (Gross Domestic Product), representing the difference between the total output value and the cost of inputs.
- **Economic Output -** Total economic value generated by all associated economic activity, which includes all inputs, labor income, and value added.

Economic impacts have a ripple effect through the economy, referred to as "multiplier impacts." Initial investment or economic activity is referred to as "direct" activity while Indirect and Induced activities are the multiplier effects. The economic impact analysis estimates economic output, job creation, and wages/income paid to employees at the following levels:

- **Direct impacts:** Direct impacts are generated from Project construction, tenants, and operations spending immediately associated with employment and data equipment at Quantum Frederick.
- **Indirect impacts:** Indirect impacts result from industry-to-industry transactions from Project construction, existing tenants, and operations. For example, a company based in Quantum Frederick that orders new software from another company in Frederick County generates indirect impacts.
- **Induced impacts:** Induced impacts result from employee spending in the economy, including employees of directly and indirectly affected businesses. For example, an employee at Quantum Frederick that gets their lunch from a restaurant in the City of Frederick generates induced impacts within Frederick County.



Fiscal Impact

HR&A reviewed data provided by Catellus and available public tax documents to estimate the to-date, one-time, and ongoing annual tax collection by Frederick County during construction and post stabilization.

Table A1: Tax Rates

Category	Frederick County Tax Rates
Real Property Tax	$1.110 per $100 of assessed value.
	-
Recordation Tax	$7.00 for every $500 of consideration.
Income Tax	2.96% on taxable income from $100,001 to $150,000.
Sales Tax	-
Stormwater Management Fee	$32.17 per 1000 SF of impervious surface.

Source: Frederick County tax regime for FY 2025.

Appendix B: Assumptions & Inputs

Economic Impact Assumptions

- For development costs, HR&A analyzed the industry standard for construction costs from Digital Infra, a platform for research and analysis on digital infrastructure, including data centers.
    - Data center construction costs may vary depending on location, size, power density, and environmental considerations.
    - Digital Infra provides a range of construction costs, varying from $600 per SF to $1,060 per SF. This includes building shell, electrical systems, HVAC systems, fire suspension, and building fit out.
    - For this analysis, HR&A assumed the construction cost to be $600 per SF.
    - Additionally, HR&A considered additional infrastructure costs not included in the vertical buildout, as provided by Catellus.
- Due to the tech heavy nature of data centers, the employee densities are low and not representative of the overall scale of operations as a major share of operational costs are tied to data equipment. Therefore, HR&A modelled for both data center employment and electricity consumption by data equipment as drivers for operational impacts. HR&A adjusted for any overlapping impacts across the two drivers in its final operational impact estimates to avoid double counting.
- To estimate the number of on-site data center jobs, HR&A used an employee space utilization efficiency informed by the Wells & Associates Traffic Impact Analysis dated November 11, 2021.
- For on-site electricity consumption, HR&A reviewed the projected electricity demand estimates and electricity rates for the site, as provided by Catellus, and assumed an average 80% usage of total capacity.
- For IMPLAN modelling, HR&A assigned the development costs to the "construction of new commercial structures" industry, the anticipated on-site data center jobs to the "other computer related services, including facility management" industry, and the estimated total on-site energy consumption for data equipment to the "electricity" commodity.
- The IMPLAN model accounts for impact leakages to geographies other than the study area of this analysis. These leakages may emerge due to factors such as imports, commuting, savings & profits, taxes, and institutional sales. These leakages are deducted from the final output.
- For NPV calculations, HR&A assumed a construction inflation rate of 3.5% informed by the United States Federal Reserve's Producer Price Index for New Industrial Building Construction. Similarly, HR&A used a general inflation rate of 3% informed by the United States Federal Reserve's Consumer Price Index. Further, HR&A assumed a discount rate of 5% informed by the coupon rate for Frederick County's Public Facilities Series A bond maturing on January 8, 2028.

Fiscal Impact Assumptions

- All past sales and mortgages information was provided by Catellus, and HR&A verified it using Maryland State Archives' web portal.
- All future sales and land valuation information was provided by Catellus, and HR&A benchmarked these estimated with precedent sales and assessed values for comparable data centers in the region.
- The improvement value used for calculating real property tax is based on the estimated development costs.
- HR&A applied a 0.95 assessed value ratio when estimating real property tax, based on the Fiscal Year 2022 Real Property Tax Base/Ratio for commercial spaces in Frederick County.
- HR&A assumed a 0.6 loan-to-value ratio for estimating recordation taxes on debt service for new construction in the future (excluding debt service secured by data center tenants to date).
- To estimate personal income tax, HR&A assumed the share of on-site data center workers living in the State of Maryland based on LEHD Origin-Destination Employment

Statistics (LODES) dataset which includes information on where people work and live. Further, HR&A relied on the State of Maryland's Income Tax Summary Report for Tax Year 2023 to determine the share of gross income that is taxable – about 88% for Frederick County.

- HR&A assumed that 70% of the Quantum Frederick site as impervious surface to estimate the stormwater management utility fee. This assumption is informed by the development program provided by Catellus.