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Report to the Governor and the General Assembly of Virginia

Economic Development Incentives 2024
Spending and Performance

JLARC
JOINT LEGISLATIVE AUDIT AND REVIEW COMMISSION

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WHAT WE FOUND

- Virginia spent $4.1 billion on 96 economic development incentive programs from FY14 to FY23. This amounts to 1.9 percent of total general fund spending during this time. Total spending on incentives was $1.1 billion in FY23.
- Total incentive spending increased between FY14 and FY23, with significant increases starting in FY19 because of improved reporting requirements for the data center exemption. Previous estimates for the value of the data center exemption ranged from $80 million to $100 million per year. However, with the improved reporting, annual estimates for the exemption now range from $412 million to $685 million.
- Data centers were by far the largest beneficiary of incentive spending, which reflects the sizable capital investment by the industry. The sales and use tax exemption for data centers accounted for 42 percent of all incentive spending over the decade ($1.7 billion).
- Spending on incentives other than the data center exemption also increased significantly in FY23, including the Virginia Business Ready Sites Program and the Tourism Development Financing Program.
- A majority of the incentive programs that have been adopted since 2017 have been custom grants. Although custom grants constitute a fairly large share of incentive program funding, payouts are generally contingent on meeting performance milestones and therefore vary from year to year. Custom grant spending decreased slightly from $21 million in FY22 to $16 million the following year.
- Nearly three-fourths of incentive spending between FY14 and FY23 was for tax incentives, primarily sales and use tax exemptions, with the remainder split between tax credits and single sales apportionment for manufacturers and data centers. Grants made up nearly all the remaining one-fourth of incentive spending.

WHY WE DID THIS STUDY

Through language in the Appropriation Act, the General Assembly directed the Joint Legislative Audit and Review Commission (JLARC) to review and evaluate economic development initiatives. Topics include spending on incentives and activity generated by businesses receiving incentives; the economic benefits of incentives; and the effectiveness of incentives.

JLARC releases two reports each year: a high-level summary report on overall spending and business activity and an in-depth report on the effectiveness of selected individual incentives. (See Appendix A: Study mandate.) JLARC contracted with the Weldon Cooper Center for Public Service to perform the analysis for both reports.

This report is the seventh in the series of overall spending and business activity and focuses on incentives that were provided between FY14 and FY23.

- Collectively, grant programs awarded $2 billion to 5,000 projects between FY14 and FY23. There was a substantial one-year increase in grant awards in FY19, primarily because of the $750 million custom grant award for Amazon HQ2.
- Completed projects receiving grant funds created approximately 61,000 jobs and $15 billion in capital investment or other spending. The majority of these projects met their capital investment goals, but just over one-quarter met their job creation goals.
- Business savings from tax incentives increased in FY23, even when removing the data center exemption, primarily because of increased usage of the Major Research and Development Tax Credit and the Coalfield Employment Enhancement Tax Credit. Even though the Coalfield Employment Enhancement Tax Credit expired in 2022, businesses can still claim credits they were awarded in future years.
- Grants have higher economic benefits than tax incentives. A higher proportion of grant funding is directed to projects in traded industry sectors, which tend to have high economic multipliers and pay higher wages. In addition, unlike many tax incentives (with exception of the data center exemption), businesses that receive awards from most grant programs also must commit to creating jobs and making capital investments.

Economic Development Incentives 2024

Virginia provides economic development incentives to encourage businesses to locate or expand their operations in the state as part of its economic development strategy. To better understand the effectiveness of these incentives in stimulating business activity, the General Assembly directed the Joint Legislative Audit and Review Commission (JLARC) to review spending on and performance of economic development incentives such as grants, tax preferences, and other assistance. (See Appendix A.) JLARC contracted with the University of Virginia's Weldon Cooper Center for Public Service to perform the evaluation.

This report is the seventh in a series of annual reports about Virginia's economic development incentives, trends in state spending on incentives, and performance of incentive programs. Every other year the reports in this series include information about the economic benefits of total spending on economic development incentives, and information on economic benefits is included in this year's report.

This report provides summary information on 96 economic development incentive programs, including grants, tax preferences, business loans, and gap financing. The incentive programs covered in this report are funded by the state, provided funding for businesses between FY14 and FY23, and have a primary purpose of promoting economic activity through location or expansion of businesses. Businesses may also benefit from a variety of other state grants, tax credits, and exemptions for purposes other than economic development; these programs are not included in this report.

For purposes of this report, **incentive spending** refers to (1) actual state expenditures in the form of grant awards or other financing and (2) estimated tax expenditures, in the form of forgone revenue, through tax credits, sales and use tax exemptions, or other incentives.

For most grants, spending is allocated to the fiscal year in which awards were approved. For custom grants, spending is allocated to the fiscal year in which grant payments are made to the company.

For refundable tax credits, such as the film credit, spending may reflect actual expenditures rather than forgone revenue.

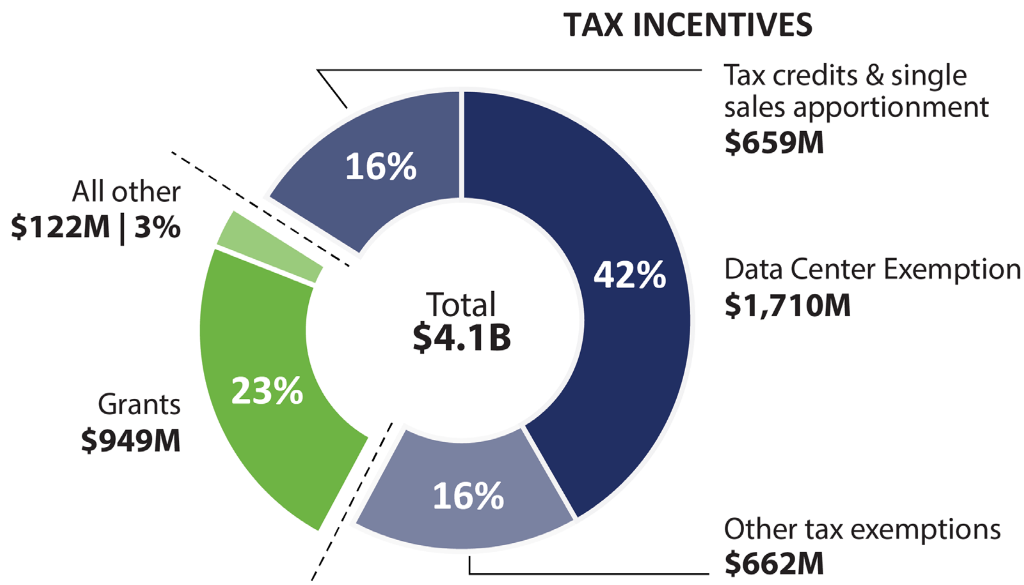
See Appendix B for more information on methods used to estimate spending for each program.

State spent $4 billion on incentives FY14–FY23

Virginia spent $4.1 billion on 96 economic development incentive programs over the past 10 fiscal years (Figure 1), for an average of $410 million per year (not adjusted for inflation). Nearly all incentives are funded by the state general fund, except for incentives provided by the Tobacco Region Revitalization Commission and several transportation infrastructure incentives. Spending on incentives represented approximately 1.9 percent of total general fund spending between FY14 and FY23. As in past reports in this series, the majority of spending on incentives was forgone revenue from tax incentives. Sales and use tax exemptions made up 58 percent of spending, and tax credits and single sales apportionment for manufacturers together made up 16 percent of spending (Figure 1). Almost all the remaining spending was for grants.

Spending is concentrated in a small number of incentives. Ten incentives accounted for 74 percent of the incentive spending between FY14 and FY23 (Table 1). The largest incentive during the 10-year period—the data center exemption—accounts for almost 42 percent of spending on incentives and is almost eight times larger than the next-largest incentive, the manufacturing single sales factor apportionment tax incentive. Two programs, the Virginia Business Ready Sites Program and Tourism Development Financing Program, ranked among the 10 largest state incentives in this year's report because of historically high awards during FY23. (See Appendix D for more information on spending on each incentive by year.)

FIGURE 1
Nearly three-fourths of spending on incentives was for tax incentives (FY14–FY23)



SOURCE: Weldon Cooper Center analysis of economic development incentive programs.
NOTE: Estimates may not sum because of rounding. Adjusted for canceled projects, recaptures, and award reductions. Exemptions exclude the 1 percent sales tax for localities and the additional amounts collected in localities with higher rates, such as Northern Virginia and the Historic Triangle. For custom grants, actual payments are allocated to the fiscal year when they were paid. Estimate for single sales apportionment includes both manufacturer and data center estimates.

TABLE 1
Ten incentives are responsible for over 70% of spending (FY14–FY23)

	10-year period (FY14–FY23)	
Incentive	**Spending**	**% of spending**
Data center exemption [a]	$1,710M	42%
Manufacturing single sales factor apportionment	218	5
Railroad Common Carriers Exemption	200	5
Coalfield Employment Enhancement Tax Credit	150	4
Commonwealth's Development Opportunity Fund	148	4
Airline Common Carriers Exemption	110	3
Real Property Improvement Grant (Enterprise zone)	107	3
Virginia Business Ready Sites Program	96	2
Tourism Development Financing Program	88	2
Major Research and Development Tax Credit	71	2
Subtotal	**$2,897.0M**	**71%**
All others	$1,203.5M	29%
TOTAL	**$4,100.5M**	**100%**

SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Excludes several tax preferences for which data was not available. Adjusted for canceled projects, recaptures, and award reductions. Exemptions exclude the 1 percent sales tax for localities and the additional amounts collected in some localities, such as Northern Virginia and the Historic Triangle. (See Appendix C for a description and Appendix D for spending for all incentives.)
[a] Amount reflects spending for only a three-year period (FY21–FY23) because the method for collecting and reporting information on the exemption changed.

This report includes more **precise estimates of the tax revenue impact of the data center exemption** than prior reports. Data centers using the exemption are now required to report to the Virginia Economic Development Partnership their annual eligible exemption expenditures. Because VEDP estimates of eligible expenditures are available only for FY21–FY23, only these figures are reported here.

Seven of these incentives were also among the top incentives for spending in FY23, with the data center exemption being the largest incentive that year ($683 million in spending or 62 percent of spending). Other incentives that were among the top incentives for spending in FY23 and the entire 10-year period include the railroad and airline common carrier exemptions, manufacturers single sales factor apportionment, Commonwealth's Development Opportunity Fund, Real Property Improvement Grant, Virginia Business Ready Sites Program, and Tourism Development Financing Program.

Incentives have increased in number and spending

The state has increased its economic development incentive programs over time. The oldest is the Economic Development Access Program—a grant program designed to improve transportation access for industrial sites—which was adopted in 1956. In the 33 years between 1956 and 1989, the state adopted only 14 incentives that are still active. Since 1989, the state has adopted an additional 83 incentives, and half of the currently active incentives were adopted since 2010.

Custom grants are offered to attract unique business location or expansion project opportunities to the state. The state's typical package of incentives (grants, tax credits, exemptions, etc.) is relatively modest compared with a custom grant. For example, grant awards for non-custom projects were an average of $193,000 per project between FY14 and FY23, compared with custom grants, which were an average of $87M per project (or $27M per project excluding the outsized custom grant for Amazon HQ2).

The state has also started adopting more customized performance grants, which are designed to attract specific companies to locate or expand in the state. Fourteen of the 19 incentive programs that have been adopted since 2018 have been customized performance grants (Figure 2).

FIGURE 2
Majority of new economic development incentives since 2017 have been custom grants

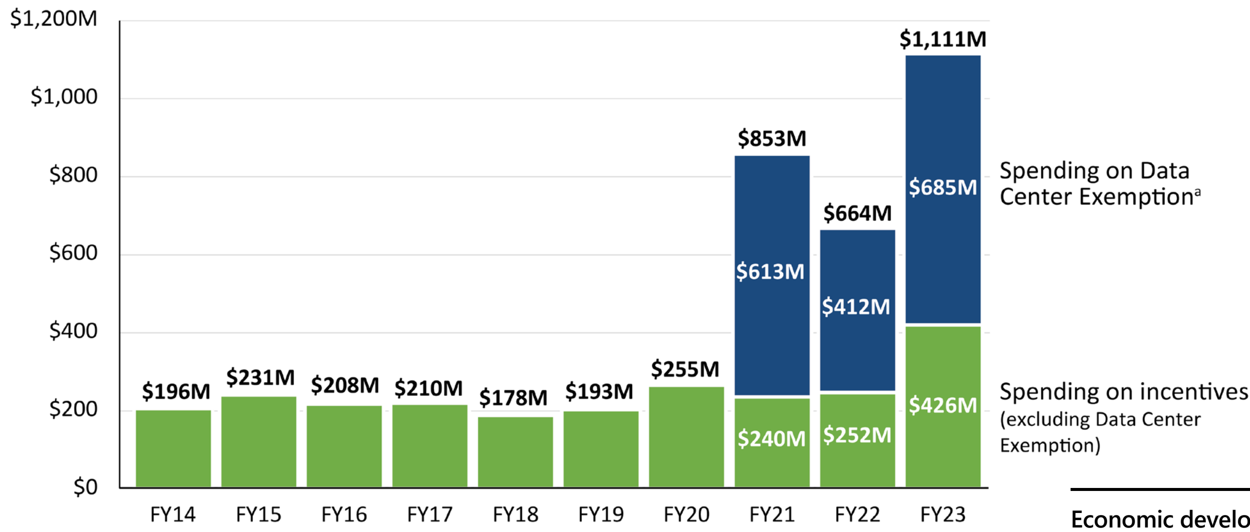
	2018	2019	2020	2021	2022	2023
CUSTOM INCENTIVES	Amazon Web Services	Amazon HQ2 Micron	Volvo Morgan Olson Merck	Microsoft Siemens Gamesa CMA CGM	CoStar Blue Star Manufacturing Rocket Lab	Amazon Web Services LEGO
OTHER INCENTIVE PROGRAMS	Venture capital account subtraction New Company Incentive Program Aircraft repair parts exemption	Virginia Talent Accelerator Program	Governor's New Airline Incentive Fund			

SOURCE: Weldon Cooper analysis of economic development incentive programs.
NOTE: Incentives are grouped by calendar year they were adopted by the General Assembly. Siemens Gamesa is part of a bond authorization for onsite improvements at the Port of Virginia.

Total economic development incentive spending increased after FY19 (Figure 3), even without the improved estimates of the data center exemption's tax revenue impact. Spending incentives other than the data center exemption greatly increased in FY23 because of large amounts of spending for the Virginia Business Ready Sites Program, the Tourism Development Financing Program, and the Major Research and Development Tax Credit that year.

Although custom grant programs constitute a relatively large share of incentive program funding, payouts are generally contingent on meeting performance milestones and can vary from year to year. Custom grant spending decreased slightly from $21 million in FY22 to $16 million in FY23. The largest custom grant spending was in FY20 due to a $50 million payment for a Micron custom grant.

FIGURE 3
Spending on incentives (even without the data center exemption) increased after FY19, particularly in FY23



SOURCE: Weldon Cooper Center analysis of economic development incentive programs.
NOTE: Adjusted for canceled projects, recaptures, and award reductions. Amounts differ from earlier economic development incentives reports because of project cancelations, recaptures for nonperforming projects, and adjusted reporting on completed projects. For custom grants, payments are allocated to the fiscal year when they were paid. Not adjusted for inflation. The trend is similar if adjusted for inflation.
[a] Data center exemption amounts are reported only for FY21–FY23 because the method for collecting and reporting information on the exemption changed. Exemption excludes the 1 percent sales tax for localities and the additional amounts collected in some localities, such as Northern Virginia and the Historic Triangle.

Approximately 5,000 projects were awarded $2 billion in grants FY14–FY23

Even though sales and use tax incentives—particularly exemptions—have historically had a larger overall impact on the state budget, Virginia's grant programs are the most widely recognized economic development incentive. Custom grants in particular receive considerable media attention because they are provided to business location or expansion projects promising to create a substantial number of jobs and make substantial capital investments. For example, Virginia's $750 million custom grant award for Amazon to locate its East Coast headquarters in Virginia received national attention in fall 2018 and early 2019. Grant payments are scheduled to begin in FY27 and end in FY43. To receive the full award, Amazon must create at least 37,850 jobs with average salaries of at least $150,000 and make a capital investment of at least $2 billion.

Collectively, Virginia's economic development incentive grant programs—which are typically funded with general funds with some exceptions—awarded more than $2 billion to 5,021 projects between FY14 and FY23 (Table 2). Thirteen of the 36 grant programs each provided more than $30 million in awards during the time period. For most grant programs, awards were also paid out during the 10-year period. However, only about half of the $2 billion in grant awards was paid out or "spent"

Economic development grants are financial incentives provided to businesses in return for locating in the state or expanding business activity and increasing general fund revenue to the state. Some grants are discretionary, which means that the state can negotiate the terms of the grant with the business. Other grants are automatically awarded if the business meets the minimum requirements. Grants are not repaid if businesses meet program requirements.

Several programs that are not commonly identified as grant programs are included in this category because they provide financial assistance to businesses (or to a third party for their benefit). These programs include the Commonwealth Research Commercialization Fund and Virginia Leaders in Export Trade (VALET) Program.

between FY14 and FY23, because over $1 billion in custom awards for 12 companies (including Amazon HQ2, Huntington Ingalls Shipbuilding, and Morgan Olson) are not scheduled to be paid out until after FY23. Spending on grants, and thus total incentives, will increase substantially in the future as these custom grant awards are paid.

TABLE 2
Grant programs made approximately 5,000 awards totaling $2 billion (FY14–FY23)

Program	Total FY14–FY23		Annual average	
	Award amount	# of awards	Award amount	# of awards
Major Headquarters Workforce Grant (Amazon HQ2) [a]	$750.0M	1	n.a.	n.a.
Commonwealth's Opportunity Fund	200.5	313	$20.0M	31
Tobacco Region Opportunity Fund	116.7	228	11.7	23
Real Property Investment Grant (Enterprise Zone)	106.5	1,514	10.7	151
Virginia Business Ready Sites Program	96.6	43	13.8	6
Precision Plastic Manufacturing Grant Program (LEGO Group) [a b]	75.0	1	n.a.	n.a.
Virginia Jobs Investment Program	73.0	708	7.3	71
Semiconductor Manufacturing Grant (Micron 2019) [a c]	70.0	1	n.a.	n.a.
Virginia Investment Performance Grant	57.5	71	5.8	7
Governor's Motion Picture Opportunity Fund	52.6	44	5.3	4
Advanced Shipbuilding Production Facility Grant (Huntington Ingalls) [a]	46.0	1	6.6	0
Virginia Economic Development Incentive Grant	40.3	11	4.0	1
Tobacco Commission Megasite Grant	35.8	14	3.6	1
Transportation Partnership Opportunity Fund	29.5	12	3.0	1
Job Creation Grant (Enterprise Zone)	24.5	537	2.5	54
Technology Development Grant Fund (Microsoft) [a]	22.5	1	n.a.	n.a.
Commonwealth Commercialization Fund [d]	21.5	345	2.1	35
Economic Development Access Program	19.8	33	2.0	3
GO Virginia	18.6	23	3.1	4
Virginia Talent Accelerator Program [f]	17.3	41	4.3	10
Offshore Wind Component Grant Program (Siemens Gamesa) [a c e]	17.1	1	n.a.	n.a.
Truck Manufacturing Grant Fund (Volvo) [a c]	16.5	1	n.a.	n.a.
Rail Industrial Access Program	13.7	33	1.4	3
Nitrile Glove Manufacturing Training Program (Blue Star) [a]	13.1	1	6.6	1

Program	Total FY14–FY23		Annual average	
	Award amount	# of awards	Award amount	# of awards
Agriculture and Forestry Industries Devel. Grant	13.0	125	1.3	13
Special Workforce Grant Fund (Amazon Web Services) [a]	10.5	1	n.a.	n.a.
Shipping and Logistics Headquarters Grant Program (CMA CGM) [a]	9.0	1	n.a.	n.a.
Pharmaceutical Manufacturing Grant Program (Merck) [a]	7.5	1	n.a.	n.a.
Advanced Production Grant Program and Fund (Morgan Olson) [a]	7.0	1	n.a.	n.a.
Port of Virginia Economic and Infrastructure Grant	7.0	23	n.a.	n.a.
VALET Program	6.2	244	0.6	24
Small Business Investment Grant Fund	6.1	143	0.6	14
Small Business Jobs Grant Fund Program	4.0	63	0.7	11
Trade Show Assistance Program	3.9	437	0.6	62
New Company Incentive Program	1.3	2	0.4	1
Governor's New Airline Service Incentive Fund	0.3	2	0	1
All programs	**$2,010.4M**	**5,021**	**$351.6M**	**534**

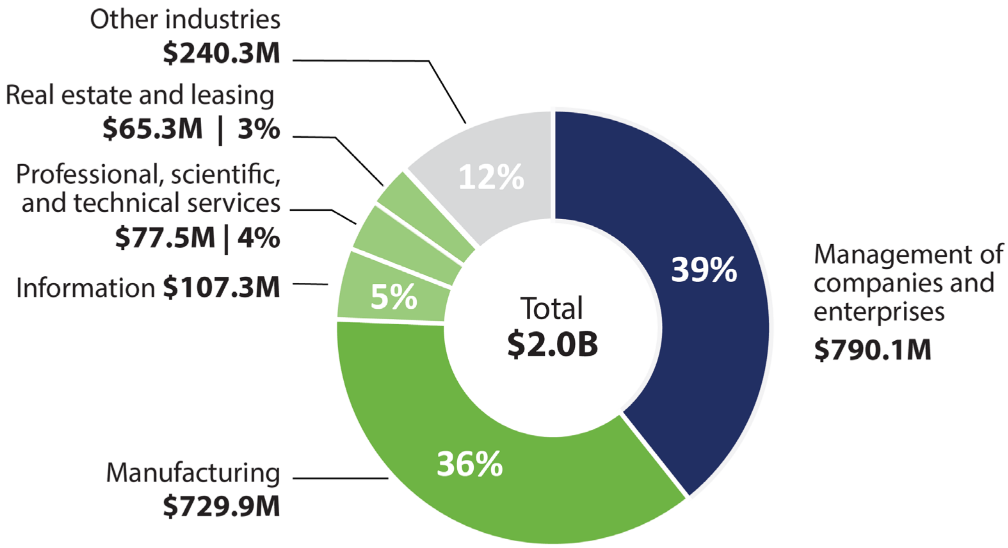
SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: Includes all awards and amounts prior to recaptures, cancelations, or reductions. For this reason, amounts for the Tobacco Region Opportunity Fund, Commonwealth's Development Opportunity Fund, and Virginia Jobs Investment Program are higher than amounts shown in Table 1. Total award amounts for custom grants are shown. The Small Business Jobs Grant Fund Program was eliminated by the 2020 General Assembly.
[a] These grants provide custom one-time awards that are or will be paid out over several years based on performance. The $10.5 million Special Workforce Grant (Amazon Web Services) and $70.0 million Semiconductor Manufacturing Grant (Micron) have been fully paid. [b] Nineteen million of the $75 million in grant funding for the Precision Plastic Manufacturing Grant (LEGO Group) is from Virginia Business Ready Sites Program funding. [c] Program has been canceled. [d] In 2020, the Commonwealth Research Commercialization Fund was combined with other programs to become the Commonwealth Commercialization Fund. [e] The Offshore Wind Component Grant (Siemens Gamesa) is not a custom grant because it is financed through a bond authorization, but it is included here as a grant because it is more like a grant than a tax incentive or loan program, and it also is a custom incentive. Siemens Gamesa announced in November 2023 that it was canceling the project because of market conditions and company outlook; the incentive was canceled in FY24, and it will be reflected in next year's report. [f] The Virginia Talent Accelerator Program was created in 2019 and began making awards in FY20. The program provides recruitment and training services and is not a cash grant to a company. Its value is estimated and represents the internal cost of the accelerator services at the time of announcement.

Grant awards targeted corporate headquarters and manufacturing sectors and urban localities

Three-quarters of grant award amounts were directed to corporate headquarters or manufacturers between FY14 and FY23 (Figure 4). Thirty-nine percent of grant awards were directed to businesses in the corporate headquarters sector, almost all of which was the sizable custom grant award for Amazon HQ2. Another 36 percent was directed to businesses in the manufacturing sector. The manufacturing sector is commonly represented because grant programs generally target companies in traded industry sectors, which export at least half their goods or services outside the state.

Targeting these businesses is desirable because they bring new revenue into the state. Corporate headquarters is also a traded industry sector, but until FY20, the state generally provided fewer and smaller grants for headquarters locations or expansions.

FIGURE 4
Three-quarters of grant award amounts were directed to corporate headquarters and manufacturers (FY14–FY23)



SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: The "other industries" category includes businesses in a variety of sectors such as agriculture and forestry, construction, utilities, finance and insurance, wholesale or retail trade, transportation and warehousing, and other service sectors. Estimates may not sum because of rounding.

Geographically, the largest amount of grant awards went to urban localities, such as Arlington County, Fairfax County, and the City of Newport News. Several less populated counties—such as Henry County and Pittsylvania County—also received large amounts. Ten localities received approximately 68 percent of the total amount awarded for the period (Table 3).

TABLE 3
Businesses in 10 localities received 68 percent of total grant award amount (FY14–FY23)

Locality	Amount awarded	% of total amount	# awards	% of total awards
Arlington County	$791M	39.3%	99	2.0
Chesterfield County	124	6.2	79	1.6
Fairfax County	78	3.9	291	5.8
Newport News city	77	3.8	235	4.7
Manassas city	71	3.5	14	0.3
Richmond city	70	3.5	470	9.4
Henry County	55	2.7	128	2.5
Henrico County	39	1.9	243	4.8
Norfolk city	36	1.8	191	3.8
Pittsylvania County	33	1.8	88	0.2
Subtotal	**$1,373M**	**68.3%**	**1,838**	**36.6%**
All others	$637M	31.7%	3,183	63.4%
TOTAL	**$2,010M**	**100.0%**	**5,021**	**100.0%**

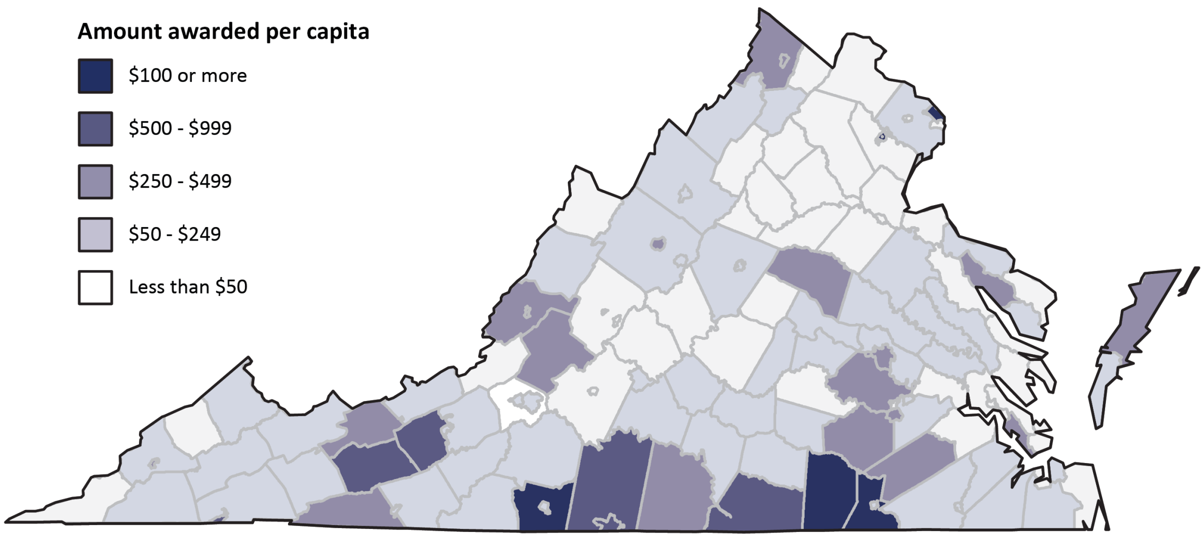
SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: Localities were not assigned to 10 Governor's Motion Picture Opportunity Fund (GMPOF), eight GO Virginia, and one Governor's New Airline Incentive Fund projects because the grants benefited more than one locality.

Businesses in urban localities in Northern Virginia and rural localities in the southern part of the state received a large proportion of grant funding, relative to population size (Figure 5). Businesses in the Northern Virginia Regional Commission service area (the counties of Arlington, Fairfax, Loudoun, and Prince William and the cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park) received approximately 48 percent of all economic development incentive grant awards. Businesses in Tobacco Region localities received approximately 16 percent of all economic development grant awards, largely because of the contributions of the Tobacco Commission's Tobacco Region Opportunity Fund and Megasite Grant programs and, in Henry County, the Business Ready Sites Program. The highest per capita award amounts were in:

- Arlington County ($3,294) primarily for the location of Amazon HQ2;
- Greensville County ($1,847) primarily for development of the Mid-Atlantic Advanced Manufacturing Center;
- Manassas City ($1,745) primarily for the Micron expansion;
- Brunswick County ($1,513) primarily for the location of a Dominion Power gas power plant that received $30 million in financial assistance; and
- Henry County ($1,087) primarily for the development of Commonwealth Crossing Business Centre.

(See Appendix E for maps of the regional distribution of grant awards, overall and per capita.)

FIGURE 5
Awards per capita are concentrated in Arlington, Manassas, and rural localities in Southern Virginia (FY14–FY23)



SOURCE: Weldon Cooper Center analysis of economic development incentive grants.

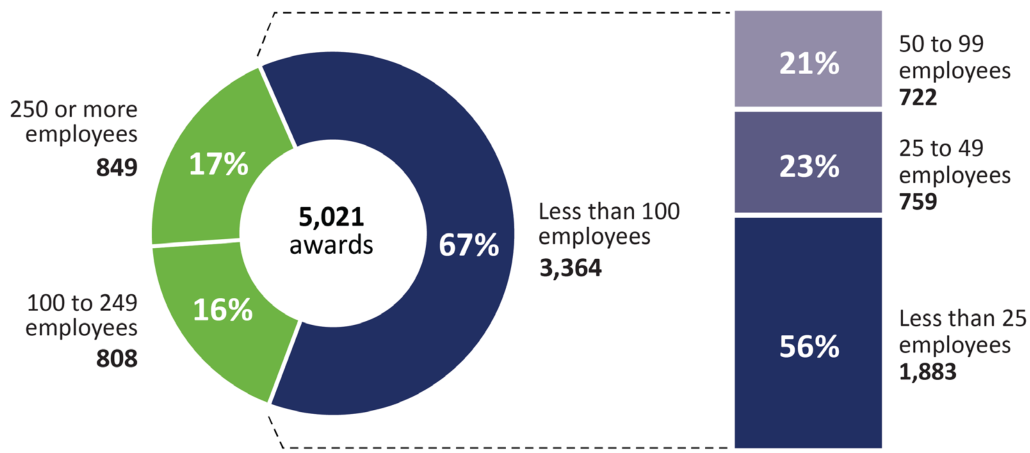
The award amounts per capita have slightly positive correlations with the local unemployment rate, poverty rate (which increases when the uniquely large Amazon HQ2 custom grant in Arlington is excluded), and percentage of population that is Black, indicating that more funds are generally provided to businesses in localities that are economically disadvantaged. The number of awards per capita has a much higher positive correlation with these variables.

Majority of grant projects were for business locations that had fewer than 100 employees at the time of the award

Two-thirds of the grant awards between FY14 and FY23 went to business locations that had fewer than 100 employees at the time the awards were made (Figure 6). Of this group, 56 percent were for business locations with fewer than 25 employees. These businesses received grant awards from programs, such as the Small Business Investment Grant or Commonwealth Commercialization Fund, which typically make awards to start-up businesses with 10 or fewer employees, on average. These projects, however, represented only 16 percent of grant award amounts.

In contrast, 17 percent of grant awards were for large businesses with 250 or more employees, and these projects accounted for more than three-quarters of grant award amounts. Custom grants and six other grant programs—the Transportation Partnership Opportunity Fund, Virginia Talent Accelerator Program, Virginia Investment Performance Grant, Virginia Economic Development Incentive Grant, Commonwealth's Development Opportunity Fund, and Port of Virginia Economic and Infrastructure Grant—tend to make awards to business locations with 250 employees or more. (See Appendix F for the average employment size of grant recipients by program.)

FIGURE 6
Majority of grant recipients were for business locations with fewer than 100 employees (FY14–FY23)



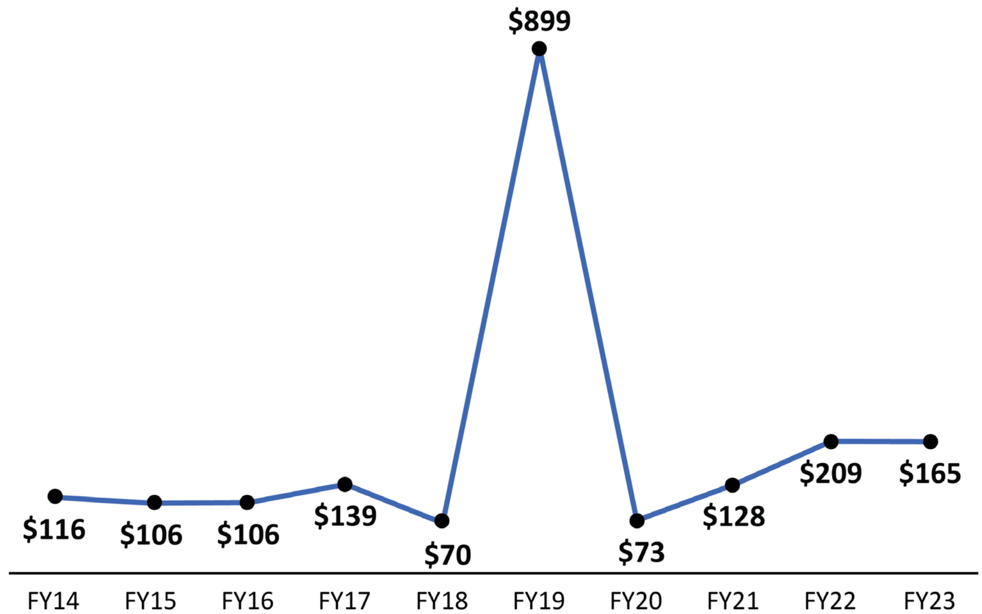
SOURCE: Weldon Cooper Center analysis of economic incentive grant awards.
NOTE: Employment records were matched with 2,930 of the 5,021 awards (58 percent) and $1.3 billion of $2.0 billion (65 percent) in total awards. The numbers and percentages shown in the figure reflect a weighted distribution of awards and amounts using information from the matched records.

Many businesses have operations in multiple **locations**. Grants and other incentives are often provided to projects that occur at a specific business location.

Grant awards trended upwards recently because of large custom grant awards

Grant awards had generally been stable over time, until a substantial increase in FY19 because of large custom grant awards for Amazon HQ2, Amazon Web Services, and Micron that totaled $830.5 million (92 percent of total grant awards) (Figure 7). Awards increased in FY21 because of custom grants for Microsoft and Volvo totaling $39.0 million. They increased again in FY22 because of custom grants or other incentives for Blue Star Manufacturing, CMA CGM, LEGO Group, and Siemens Gamesa, totaling $114.2 million. (See Appendix D for grant awards by program.)

FIGURE 7
Grant awards spiked in FY19 and have trended upward since FY20 because of large custom grant awards



SOURCE: Weldon Cooper Center analysis of economic incentive grant awards.
NOTE: Adjusted for canceled projects, recaptures, and award reductions. Amounts differ from earlier economic development incentives reports because of project cancelations, recaptures for nonperforming projects, and adjusted reporting on completed projects. Sizable custom grants were awarded to Amazon HQ2 ($750 million), Micron ($70 million), and Amazon Web Services ($10.5 million) in FY19. Not adjusted for inflation. (The trend is the same if adjusted for inflation.) The Offshore Wind Component Grant is included here with other grants to keep it with other custom incentives, which are grants, and because it is more like a grant program than a tax incentive or loan. This grant was canceled in FY24, and this will be reflected in next year's report.

Programs vary in amount awarded per job created and level of business investment

The size of grant awards varied widely by program (Table 4). Awards ranged from an average high of $3.7 million to a low of $8,977 per project, excluding the custom grant awards. Custom grant awards—which tend to be much larger—ranged from $7.0 million to $750 million.

The size of grant awards also varied when compared with the number of jobs created or investment made (Table 4). Grant programs require projects to meet certain minimum requirements to be eligible for grant funding. These minimum requirements vary based on program goals, but the most common are the creation of jobs paying wages over a minimum threshold and some form of business investment or spending in Virginia. The average grant award per expected job for Virginia projects was $7,612 between FY14 and FY23, but it ranged from a high of $63,291 per job (custom grant for Micron) to a low of less than $1,000 (Virginia Jobs Investment Program and Small Business Jobs Grant Fund). The average grant award for capital investment or additional spending was $38 per $1,000 spent and ranged from a high of $3,516 (custom grant for Microsoft) to a low of $4 (Agriculture and Forestry Industries Development Grant).

TABLE 4
Average grant awards by program varied widely (FY14–FY23)

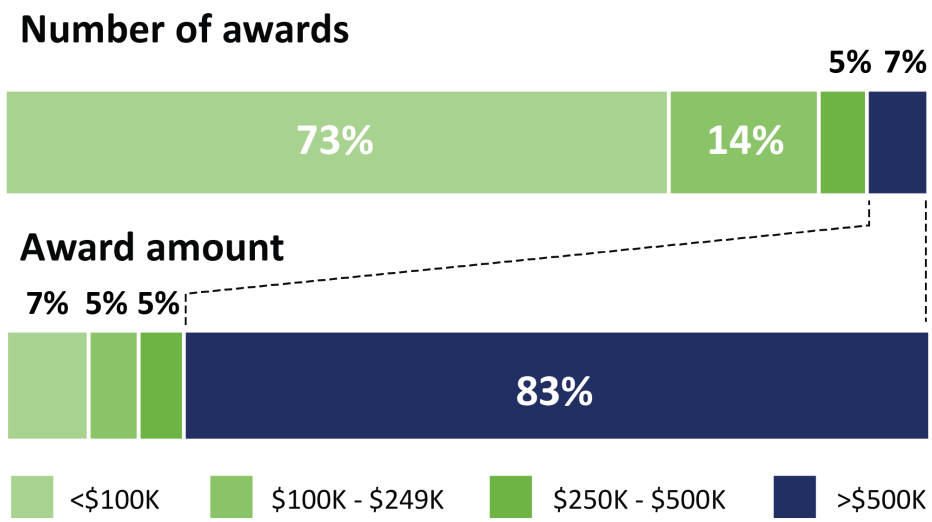
	Average award amount per		
	Project	$1,000 in spending or investment in Virginia (expected)	Job created in Virginia (expected)
Custom grants			
Semiconductor Manufacturing Grant Fund (Micron)	$70,000,000	$23	$63,291
Offshore Wind Component Grant (Siemens Gamesa) [a]	17,100,000	204	55,161
Pharmaceutical Manufacturing Grant (Merck)	7,500,000	8	49,342
Advanced Shipbuilding Production Facility Grant (Huntington Ingalls)	46,000,000	61	46,000
Precision Plastic Manufacturing Grant (LEGO Group)	75,000,000	72	42,589
Shipping and Logistics Headquarters Grant (CMA CGM)	9,500,000	264	22,892
Truck Manufacturing Grant Fund (Volvo)	16,500,000	42	21,236
Major Headquarters Workforce Grant Fund (Amazon HQ2)	750,000,000	375	19,815
Technology Development Grant Fund (Microsoft)	22,500,000	352	15,000
Advanced Production Grant (Morgan Olson)	7,000,000	121	9,957
Special Workforce (Amazon Web Services)	10,500,000	125	7,000
Nitrile Glove Manufacturing Training Program (Blue Star)	13,101,000	18	5,317
Average custom grants	**$87,020,323**	**$114**	**$21,080**
All other grants			
Transportation Partnership Opportunity Fund	$2,460,196	39	$14,622
Economic Development Access Program	599,049	210	9,700
Small Business Investment Grant Fund	42,594	215	8,652
Virginia Investment Performance Grant	809,859	12	8,483
GO Virginia (site development)	810,751	186	6,360
Virginia Economic Development Incentive Grant	3,663,636	67	6,012
Tobacco Region Opportunity Fund	512,026	18	4,206
Commonwealth Opportunity Fund	640,524	15	3,937
Rail Industrial Access Program	413,687	11	3,481
Agriculture and Forestry Industries Devel. Grant	103,799	4	3,429
New Company Incentive Program	656,500	254	2,951
Port of Virginia Economic and Infrastructure Grant	303,957	n.a.	2,142

	Project	Average award amount per $1,000 in spending or investment in Virginia (expected)	Average award amount per Job created in Virginia (expected)
Job Creation Grant (Enterprise Zone)	$45,673	n.a.	$2,012
Small Business Jobs Grant Fund Program	63,133	42	847
Virginia Jobs Investment Program	103,038	7	844
Commonwealth Research Commercialization Fund	62,317	302	n.a.
Real Property Investment Grant (Enterprise Zone)	70,373	37	n.a.
Governor's Motion Picture Opportunity Fund	1,195,116	n.a.	n.a.
Governor's New Airline Service Incentive Fund	145,000	n.a.	n.a.
Tobacco Commission Megasite Grant	2,559,305	n.a.	n.a.
Trade Show Assistance Program	8,977	n.a.	n.a.
VALET Program	25,389	n.a.	n.a.
Virginia Business Ready Site Program	2,246,609	n.a.	n.a.
Virginia Talent Accelerator Program	421,067	n.a.	n.a.
Average, non-custom projects	**$192,888**	**$22**	**$4,503**
Average, all projects	**$400,402**	**$38**	**$7,612**

SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: Expected jobs and spending or investment were used for programs that awarded grants prior to when project performance began. Actual jobs and spending or investment were used for programs for which performance already occurred prior to projects receiving a grant award. Average award amounts are calculated using total spending across programs divided by the total number of projects, amount of expected capital investment, and expected jobs across programs. The Small Business Jobs Grant Fund Program was eliminated by the 2020 General Assembly.
n.a. indicates that job creation or investment is not among the criteria considered for obtaining the grant.
[a] The Offshore Wind Component Grant (Siemens Gamesa) is included here with other grants to keep it with other custom incentives, which are grants, and because it is more like a grant program than a tax incentive or loan.

From FY14 to FY23, only 7 percent of awards were more than $500,000. However, these larger awards accounted for 83 percent of grant funding (Figure 8). In fact, the 12 custom grant awards alone accounted for 52 percent of grant funding.

FIGURE 8
Seven percent of grant awards accounted for over 80 percent of total grant funding (FY14–FY23)



SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: Number of grants awarded is 5,021. Total amount awarded is $2.0 billion (not adjusted for cancelations, recaptures, and refunds).

Completed projects created over 61,000 jobs and $15 billion in business investment and spending

Projects that received grant awards between FY14 and FY23 and completed their location or expansion project (including those that did not perform), collectively created an estimated 61,000 jobs and $14.7 billion in capital investment or other spending (Table 5). Completed projects that received Virginia Jobs Investment Program grants accounted for the largest share of jobs (39,304) and capital investment and other spending ($6.1 billion). Projects funded through the Job Creation Grant ranked second in job creation (12,188 jobs). These programs are also among the least expensive in terms of the incentive amount per job created.

The **61,000 jobs and $15 billion in capital investment or other spending** are unduplicated amounts, because many projects receive more than one grant. For example, Navy Federal Credit Union received a Commonwealth's Development Opportunity Fund grant, Transportation Partnership Opportunity Fund grant, and Virginia Jobs Investment Program grant to create 1,400 jobs and make a $100 million capital investment in Frederick County.

TABLE 5
Completed projects created over 61,000 jobs and $15 billion in business spending or investment (FY14–FY23)

Program	# of projects	Spending or investment ($M)	Jobs created
Virginia Jobs Investment Program	571	6,080	39,304
Job Creation Grant (Enterprise Zone)	537	n.a.	12,188
Commonwealth's Development Opportunity Fund	181	4,532	11,806
Tobacco Region Opportunity Fund	144	2,263	4,624
Port of Virginia Economic and Infrastructure Grant	23	n.a.	3,264

Completed projects include those whose grant performance period ended during the time period analyzed, including projects that did not perform. Not all projects that received a grant award between FY14 and FY23 had completed their performance at the end of FY23. Completed projects represent $430 million in awards.

It is likely that the majority of the jobs and business investment or spending by completed projects would have occurred without incentives. Trying to determine the effect of incentives with precision is difficult because site selection decisions are based on a variety of factors. The success in swaying business decisions varies by program. Research on incentives nationally suggests that between 75 percent and 98 percent of projects would have occurred anyway without incentives (Bartik 2018). Some programs, however, have been found to have higher rates of success in swaying business decisions.

Program	# of projects	Spending or investment ($M)	Jobs created
Special Workforce Grant Fund (Amazon Web Services)	1	113	1,682
Small Business Jobs Grant Fund Program	57	1	1,442
Transportation Partnership Opportunity Fund	6	172	1,093
Agriculture and Forestry Industries Devel. Grant	46	513	829
Rail Industrial Access Program	20	324	658
Virginia Investment Performance Grant	21	261	379
Commonwealth Commercialization Fund	251	60	n.a.
Economic Development Access Program	24	248	n.a.
Governor's Motion Picture Opportunity Fund	39	493	n.a.
Real Property Investment Grant (Enterprise Zone)	1,514	2,899	n.a.
Small Business Investment Grant	2	0	0
Virginia Economic Development Incentive Grant	2	0	0
Total (duplicated):	**3,439**	**17,957**	**77,268**
Total (unduplicated):		**14,747**	**60,975**

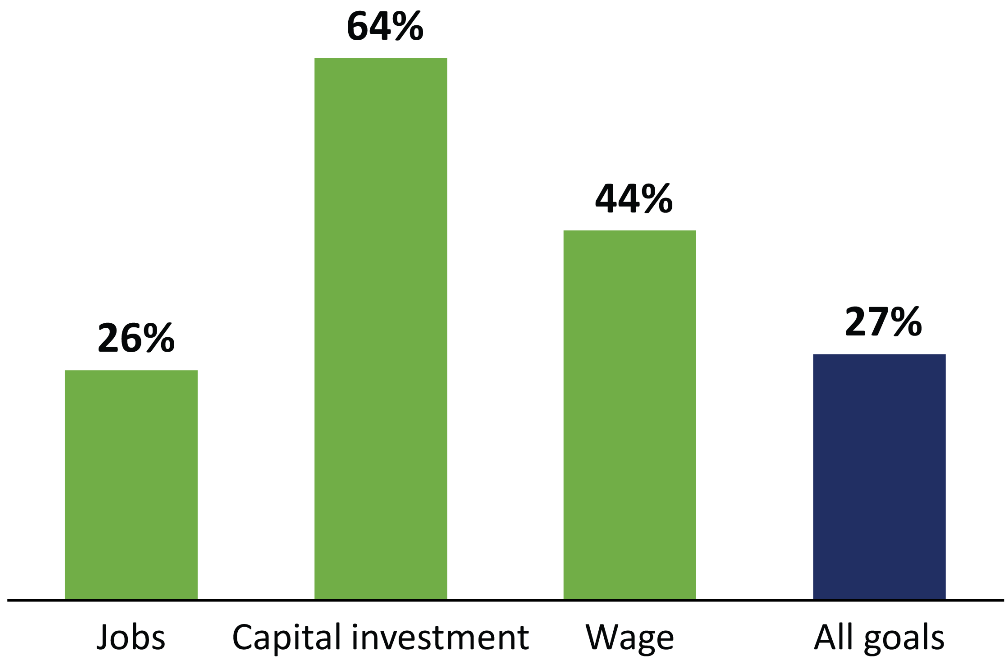
SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: Completed projects represented about $430 million in total awards across programs. Some grant programs, such as the Major Eligible Employer Grant and some custom grants, had no completed projects during this time period. Jobs are not counted for the Governor's Motion Picture Opportunity Fund program because they are not permanent full-time jobs. Many projects receive grants from more than one program. No unique identifiers exist to easily identify projects that received grants from multiple programs. The unduplicated number of jobs and investment or spending is an estimate based on a review of projects with similar business names, locations, time periods, and other factors. VALET and Trade Show Assistance programs (193 and 437 completed projects, respectively) are not included in the table because their goals are to increase a company's international sales, and job creation and capital investment are not reported by program participants. The Tobacco Commission Megasite Grant, Virginia Business Ready Sites Program, and Virginia Talent Accelerator Program (13, 7, and 9 completed projects respectively) did not report job creation or investment completion attainment.
n.a. indicates that job creation or investment is not one of the criteria for receiving the grant.

Majority of completed projects met capital investment goals, and only one-quarter met their job creation goals

Some grant programs establish an "upfront" award agreement with project-specific goals. The most common project-specific goals are job creation, capital investment, and average wages paid. Several programs use alternative goals that are more relevant to their program. For example, transportation-related programs, such as the Rail Industrial Access Program and Port of Virginia Economic and Infrastructure Grant, establish project-specific goals for rail car volume and Virginia port usage, respectively. (See Appendix G for goals across programs.)

Sixty-four percent of completed projects met or exceeded their project-specific goals for capital investment or other spending (Figure 9). Forty-four percent met their average wage goals, and 26 percent met their job creation goals.

FIGURE 9
Majority of completed projects met their capital investment goals (FY14–FY23)



SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: N=1,358 duplicated projects. Only includes projects from programs that establish project-specific goals.

Attainment rates for project-specific goals varied widely by program (Table 6). The Port of Virginia Economic and Infrastructure Development Grant Program is the only program with multiple projects where all projects attained specific goals. Goal achievement was especially low for some programs.

TABLE 6
Attainment of project-specific goals varied by program (FY14–FY23)

Program	# of projects	Job creation	Capital investment	Average wage	All goals
Special Workforce Grant Fund (Amazon Web Services)	1	100%	100%	n.a.	100%
Port of Virginia Economic and Infrastructure Grant	23	100	n.a.	n.a.	100
Commonwealth Commercialization Fund	251	n.a.	n.a.	n.a.	86
Rail Industrial Access Program	20	n.a.	70	n.a.	70
Economic Development Access Program	24	n.a.	67	n.a.	67
Virginia Talent Accelerator Program	9	n.a.	n.a.	n.a.	44
Virginia Jobs Investment Program Retraining	82	n.a.	93	40%	26
Commonwealth's Development Opportunity Fund	181	23	41	51	20

Program	# of projects	Job creation	Capital investment	Average wage	All goals
Tobacco Region Opportunity Fund	144	34	40	40	19
Virginia Investment Performance Grant	21	24	19	24	19
Virginia Jobs Investment Program-Job Creation	489	25	79	41	13
Agriculture and Forestry Industries Devel. Grant	46	43	54	61	20
Small Business Jobs Grant Fund	57	9	**	56	0
Transportation Partnership Opportunity Fund	6	0	33	n.a.	0
Virginia Economic Development Incentive Grant	2	0	0	0	0
Small Business Investment Grant Fund	2	0	0	**	0
Total	**1,358**	**27%**	**64%**	**44%**	**32%**

SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: Some programs have other goals, which are reflected in the "All goals" column. Some programs do not collect information on average wage levels upon completion of the project. The goal of the VALET program is to increase international sales, and 62 percent of the participants met or exceeded their goal for increased international sales. The goal of the Virginia Talent Accelerator Program is job training, and the percentage in all goals is based on the proportion of jobs that completed training.
n.a. indicates that job creation or investment is not one of the criteria for receiving the grant.
** indicates that data was not provided for the program.

Some grant programs were more successful overall in achieving goals for job creation and capital investment, even though some of the projects did not achieve their project-specific goals. For example, only 41 percent of completed projects that received a Commonwealth's Development Opportunity Fund grant fully achieved their capital investment goals (Table 6). However, because some projects far exceeded their capital investment goals, collectively all projects created 66 percent of the total capital investment that was expected (Table 7). The Commonwealth's Development Opportunity Fund also achieved 44 percent of its job creation and 132 percent of average wage goals collectively. Most grant programs overall had success in achieving average wage goals, even if they did not have overall success in achieving other goals.

TABLE 7
Projects for most grant programs collectively met or almost met their average wage goals (FY14–FY23)

Program	Job creation	Spending or investment	Average wage
Special Workforce Grant Fund (Amazon Web Services)	112%	135%	173%
Port of Virginia Economic and Infrastructure Grant	100	n.a.	n.a.
Rail Industrial Access Program	75	107	n.a.

Program	Job creation	Spending or investment	Average wage
Agriculture and Forestry Industries Devel. Grant	65	67	119
Transportation Partnership Opportunity Fund	60	44	n.a.
Virginia Jobs Investment Program	57	89	95
Commonwealth's Development Opportunity Fund	44	66	132
Small Business Jobs Grant Fund Program	33	1	103
Tobacco Region Opportunity Fund	23	46	95
Virginia Investment Performance Grant	13	22	73
Economic Development Access Program	n.a.	364	n.a.
Small Business Investment Grant Fund	0	0	**
Virginia Economic Development Incentive Grant	0	0	0
Commonwealth Commercialization Fund	n.a	106	n.a.

SOURCE: Weldon Cooper Center analysis of economic incentive grants.
NOTE: Not all projects collect average wage levels upon completion of the project to calculate the percentage of projects that attained wage goals. The VALET program is excluded from the table because its goal is to increase international sales. Collectively, program participants increased international sales by 109 percent of the expected goal.
n.a. indicates that job creation or investment is not one of the criteria for receiving the grant.
** indicates that data was not provided for the program.

Grant awards totaling $194 million were canceled, reduced, or recaptured because projects did not achieve goals

When projects do not go forward or do not meet their goals, the grant awards may be canceled, reduced, or recaptured. Grant awards totaling $194 million (or 10 percent of the total paid or committed between FY14 and FY23) were canceled, reduced, or recaptured because the projects did not go forward or meet their goals (Figure 10). Nearly 58 percent of the $194 million was never paid because projects did not go forward and were canceled. Another 19 percent was not paid to projects for which awards were reduced because the projects did not meet their goals.

Agencies administering grants reported **recapturing** $45 million in grant awards. In some cases, this may be less than the full amount that should have been recaptured according to grant guidelines. The upcoming in-depth reports on these incentives will provide more information about agency efforts to recapture funding when projects do not achieve their goals.

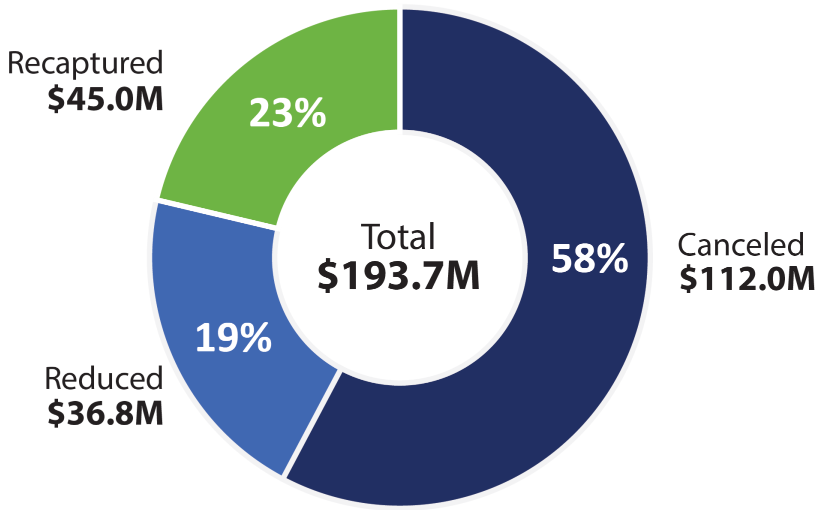
Exemptions to Virginia's **retail sales and use tax** can be claimed by businesses for qualifying purchases.

Virginia's retail sales and use tax rate varies by locality: Williamsburg, James City, and York (7 percent); Northern Virginia, Hampton Roads, and Central Virginia (6 percent); Danville, Charlotte, Gloucester, Halifax, Henry, Northampton, Patrick, and Pittsylvania (6.3 percent); rest of state (5.3 percent). One percent is retained by the locality where the purchase is made.

The **sales tax** applies to the sale of certain goods and services purchased in the state and is generally collected by the merchant at the point of sale.

The **use tax** is levied on out-of-state purchases that are used in Virginia and is self-assessed and remitted to the state by the consumer.

FIGURE 10
Grant awards totaling $194 million were canceled, reduced, or recaptured (FY14–FY232)



SOURCE: Weldon Cooper Center analysis of economic development incentive grant awards or award commitments and program information of recaptures, reductions, and cancelations. Numbers may not sum because of rounding.

Approximately $45 million was recaptured between FY14 and FY23 from 158 projects that failed to meet their performance goals. Grant programs that make upfront award payments include recaptures. Each of these programs recaptured the following percentages of the funds they awarded:

- Commonwealth's Development Opportunity Fund: 20 percent;
- Agriculture and Forestry Industries Development grant: 14 percent;
- Tobacco Region Opportunity Fund: 2 percent; and
- Small Business Investment Grant: 1 percent.

Through tax incentives, businesses saved $3 billion FY14–FY23

Virginia's economic development tax incentives, which include exemptions, credits, and single sales apportionment, resulted in $3 billion in tax savings to businesses between FY14 and FY23. Most ($1.7 billion or 57 percent) of this amount was from the data center sales and use tax exemption. To use this exemption, data centers must meet minimum job creation and capital investment thresholds. Data centers using the exemption reported creating 2,150 new jobs collectively in FY22 and FY23 and making more than $38.5 million in capital investments. Ten other sales and use tax exemptions each provided more than $20 million in incentives to businesses between FY14 and FY23 (Table 8). Many of these exemptions are provided to capital-intensive industries, such as data centers, railroads, and airlines, which make substantial equipment purchases to start or upgrade their operations.

TABLE 8
Sales and use tax exemptions provided an estimated $2.4 billion in tax savings to businesses (FY14–FY23)

Exemption	Total savings ($M)	Average savings per year ($M)
Data Centers Exemption [a]	$1,710.2	$570.1
Railroad Common Carriers Exemption	199.6	20.0
Airline Common Carriers Exemption	110.0	11.0
Ships and Vessels Exemption	69.4	6.9
Research & Development Exemption	51.1	5.1
Media Provider Equipment Exemption	48.3	4.8
Pollution Control Equipment & Facilities Exemption	34.7	3.5
Certain Printed Materials for Out-of-State Distribution Exemption	33.2	3.3
Aircraft Parts, Engines, and Supplies Exemption	28.5	5.7
Film, Television, & Audio Production Inputs Exemption	26.6	2.7
Railroad Rolling Stock Exemption	24.7	2.5
Virginia Spaceport Users Exemption	8.8	0.9
Uniform Rental & Laundry Businesses Exemption	8.2	0.8
Semiconductor Manufacturers Exemption	6.5	0.6
Out-of-state Nuclear Facility Repair Exemption	6.2	0.6
Taxi Parts & Radios Exemption	3.5	0.4
Contractor Temporary Storage Exemption	1.1	0.1
Semiconductor Wafers Exemption	1.0	0.1
Electrostatic Duplicators Exemption	0.1	0.0
Total	**$2,371.7M**	**$639.1M**

SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Exempted amounts are estimates and exclude the 1 percent sales tax for localities and, in most cases, the additional amounts collected in localities with higher rates, such as Northern Virginia and the Historic Triangle. (See Appendix B for methodology used to estimate the sales and use tax exemptions.)
[a] Amount reflects spending for only a three-year period (FY21–FY23) because the method for collecting and reporting information on the exemption changed.

Information on job creation, spending, and other business requirements in return for receiving tax incentives is not readily available as it is for grants.

Unlike for grants, many tax incentives do not have specific job creation and capital investment requirements. The one exception for which information is readily available is the data center exemption because of new reporting requirements adopted in 2021.

Economic development tax credits provided $441 million in savings to businesses between FY14 and FY23 (Table 9), accounting for about 15 percent of spending on tax incentives. Two coal tax credits account for 41 percent of total economic development tax credits. The largest credit—the Coalfield Employment Enhancement Tax Credit—was available to coal mining companies to help slow the decline of coal mining activity in Virginia. Both coal tax credits will account for lower amounts of business tax savings in future years because both credits expired effective January 1, 2022. Five other credits provided more than $20 million in tax savings during this period. While many of the older tax credits are designed to encourage manufacturers to locate or expand in Virginia, the credits adopted more recently are designed to incentivize businesses in other industries (film, wineries, and transportation or distribution companies).

Apportionment formulas are used to ensure that states do not tax more than their fair share of income from multistate companies. Virginia's standard formula uses three factors (property, payroll, and sales) and double weights the sales factor.

Manufacturers and data centers can use **single sales apportionment** to calculate their taxable income in Virginia based solely on their proportion of total sales that are in Virginia.

Since 2014, Virginia has allowed manufacturers to use single sales apportionment—a method that could reduce their income tax liability—to help stem the decline of manufacturing jobs in the state. Tax savings for manufacturers using single sales apportionment are estimated to be $218 million between FY14 and FY23, or about $22 million per year. Since 2017, Virginia has allowed data centers meeting certain eligibility requirements to also use single sales apportionment. Tax savings for data centers using single sales apportionment are estimated to be $0.2 million in FY23.

Tax credits allow businesses or their owners to reduce their income tax liability, dollar for dollar, according to the amount allowed under the credit.

TABLE 9
Tax credits provided nearly $441 million in tax savings to businesses (FY14–FY23)

Tax credit	Total savings ($M)
Coalfield Employment Enhancement Tax Credit	$149.9M
Major Research and Development Tax Credit	71.3
Motion Picture Production Tax Credit	52.3
Research and Development Expenses Tax Credit	37.7
Virginia Coal Production and Employment Incentive Tax Credit	31.7
Qualified Equity and Subordinated Debt Investment Tax Credit	31.2
Major Business Facility Job Tax Credit	29.5
Recyclable Materials Processing Equipment Tax Credit	16.1
Virginia Port Volume Increase Tax Credit	13.5
International Trade Facility Tax Credit	2.4
Farm Wineries and Vineyards Tax Credit	1.7
Worker Retraining Tax Credit/Worker Training Tax Credit	1.5
Barge and Rail Usage Tax Credit	1.2
Telework Expenses Tax Credit	0.4
Green Job Creation Tax Credit	0.2
Biodiesel and Green Diesel Fuels Producers Tax Credit	0.0
Total, all tax credits	**$440.6M**

SOURCE: Weldon Cooper Center analysis of tax credit information from Virginia Tax.
NOTE: The average tax credit award per year is not reported for tax credits because several new programs were adopted during this time period, and several other programs provided too few awards for disclosure purposes. The Telework Expenses Tax Credit expired January 1, 2019.

Business savings from tax incentives increased in FY23 even when excluding the data center exemption

Savings from tax incentives increased dramatically with improved information on the data center exemption value and are estimated to be $851 million in FY23. When tax savings from the data center exemption are removed, tax savings for other tax incentives fluctuated over the 10-year period but increased by $35 million between FY22 and FY23. The increase is primarily because of increased usage of the Major Research and Development Tax Credit (tax savings increased $11 million) and Coalfield Employment Enhancement Tax Credit (tax savings increased $8.6 million). Even though the Coalfield Employment Enhancement Tax Credit expired in 2022, businesses can still claim credits they were awarded in future years.

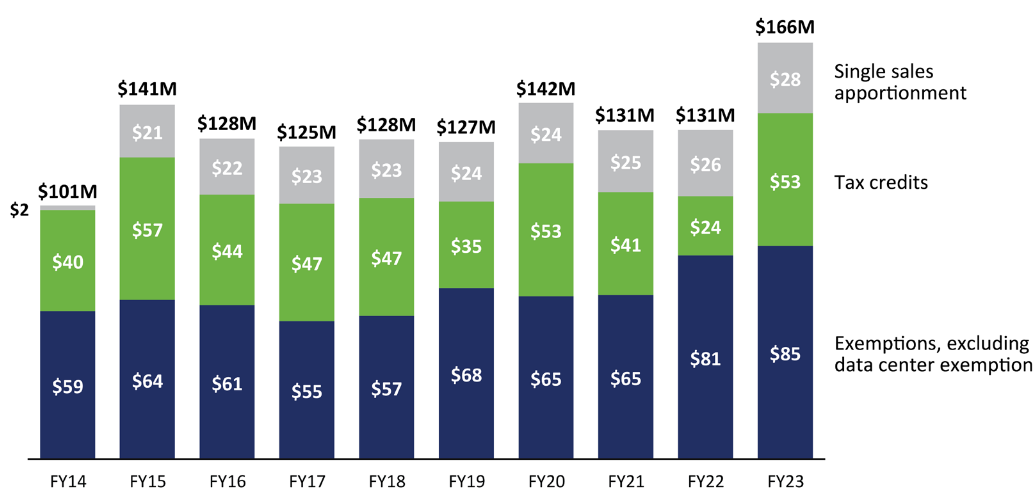
Tax savings changes between years can partially be explained by the introduction of new or expanded tax incentive programs and expiration or repeal of other programs. Increased business savings resulted from the introduction of manufacturer single sales apportionment in 2014 and the Major Research and Development Tax Credit in 2018. The tax expenditures for the two programs increased to $49.4 million in FY23. On the other hand, the Virginia coal tax credits were repealed in 2021. Thus, coal tax credit usage decreased from $81.3 million in FY14 to $8.9 million in FY23 because companies can no longer earn new credits.

Tax incentive spending is related to general economic conditions. Gradual improvements in the economy through FY20 led to a recovery in business spending and investment. This recovery likely resulted in overall increases in spending on sales and use tax exemptions that target capital-intensive industries, such as rail, air, and water transportation companies. Likewise, the negative impact of the COVID-19 pandemic on businesses and the economy is one possible reason why businesses' tax savings declined in FY21 and FY22 and rebounded in FY23.

Industry-specific changes also affect tax incentive usage over time. Before its termination, usage of the Virginia Coal Employment and Production Incentive Tax Credit, which was targeted at thermal coal production, had been declining. Demand for thermal coal had been decreasing because of competition from gas-fired and alternative energy power generation.

FIGURE 11

Business savings from tax incentives (excluding the data center exemption) fluctuated some over the 10-year period and increased in FY23



SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Exempted amounts are estimates and exclude the 1 percent sales tax for localities and the additional amounts collected in some localities, such as Northern Virginia and the Historic Triangle. Not adjusted for inflation. The trend is nearly identical if adjusted for inflation.

Businesses obtained $143 million in loans and gap funding through financing programs FY14–FY23

Venture capital is financing that investors provide to startup companies and small businesses that are believed to have long-term growth potential.

Virginia offers six incentive programs that are designed to assist firms in securing additional debt and equity financing. The Virginia Small Business Financing Authority (VSBFA) administers four of these programs, which provide loan assistance to eligible businesses:

- Economic Development Loan Fund provides loan financing for eligible small businesses that create permanent full-time jobs;
- Loan Guaranty Program helps small businesses obtain loans by reducing bank credit risk;
- State Cash Collateral Program assists small businesses that lack the necessary collateral to obtain a loan, and
- SWaM Loan Fund provides small loans to small businesses to use for working capital, financing accounts receivable and inventory, and other short-term financing needs.

Virginia also offers two gap financing programs. The Virginia Innovation Partnership Corporation offers gap funding through its Virginia Venture Partners Growth Acceleration Program (GAP) Funds, which enable technology firms with high growth potential to obtain additional venture capital investment. The Virginia Tourism Corporation administers the Tourism Development Financing Program to large-scale tourism projects.

These financing programs incentivize different types of business activity than the state's grant programs. Over 64 percent of VSBFA assistance was provided to small businesses in services and trade industries between FY14 and FY23. Seventy-three percent of Virginia Venture Partner GAP Funds went to businesses in professional, scientific, and technical services and information industries, which include businesses in high-tech fields such as biotechnology and software development. In contrast, 75 percent of grant funding was for corporate headquarters and manufacturers.

Awards from financing programs have typically been more concentrated in metropolitan areas of the state than grant programs, although more recently grant programs have also been more concentrated in urban localities. Sixty-nine percent of VSBFA loans and 99 percent of GAP Fund awards went to projects in metropolitan areas between FY14 and FY23. Over sixty-one percent of GAP Fund assistance went to firms in Northern Virginia, with 37 percent to Fairfax County companies alone. A large portion (25 percent) of the remaining award amounts were made to firms in three localities that are home to the state's major research universities. In contrast, the percentage of grant funding that went to projects in metropolitan areas has historically been lower (around 65 percent), but climbed to 84 percent in FY23, because custom grant awards have been significantly higher for metro areas (98 percent of all custom grants awarded during the period).

Higher amounts of total loan assistance and GAP Fund awards were provided to areas with lower levels of disadvantage or economic distress. Loans and loan assistance were negatively associated with the poverty rate (-.06), the unemployment rate (-0.08) and the percentage of the locality's population that is Black (-.05) and positively associated with median household income (0.26). GAP Fund awards were also negatively associated with the poverty rate (-.15), the unemployment rate (-0.22) and the percentage of the locality's population that is Black (-.13) and positively associated with median household income (0.39).

VSBFA programs helped businesses obtain nearly $24 million in loans and loan enhancements

Small businesses aided by the four VSBFA programs obtained nearly $24 million in loan and loan enhancement financing between FY14 and FY23 (Table 10). In most cases, state appropriations were not directly used to finance the loans or provide the obligation to secure the loans. While programs may have received appropriations in the past, the programs use revolving loan funds, which means they utilize interest and principal payments on old loans to issue new ones or receive funding from other self-financing programs offered by VSBFA.

The average loan or loan enhancement was $98,648, but the average varied among the four programs. The Economic Development Loan Fund provided the greatest amount of average loan assistance per project at $885,144. The SWaM Loan Fund provided the least, at $21,040 per project.

TABLE 10
VSBFA programs helped businesses secure nearly $25 million in loans or equity financing (FY14–FY23)

Program	Amount awarded	# of projects	Average award	# of jobs	Loan/loan enhancement per job
Economic Development Loan Fund	$5,310,862	6	$885,144	233	$22,793
Loan Guaranty Program	12,914,155	61	211,707	386	33,456
State Cash Collateral Program	2,000,000	9	222,222	37	54,054
SWaM Loan Fund	3,450,482	164	21,040	524	6,585
Total	**$23,675,499**	**240**	**$98,648**	**1,180**	**$20,064**

SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: VSBFA programs use only a small portion of state funding to secure loan financing. Jobs reported are expected jobs.

The four programs collectively were expected to add 1,180 jobs. The average loan or loan enhancement assistance per job was $20,064. This figure is not directly comparable to the average grant award per job ($7,612), because state funding for these programs represents only a small portion of the total loan and loan enhancement amount. For example, the Loan Guaranty Program provides a financial guarantee for an eligible business to secure a loan provided by a private bank. The program would be required to obligate funds only if an eligible business were to default on its loan. The SWaM loan is a direct loan provided by VSBFA, but funding for the loan is derived from fees from other bond financing provided by VSBFA and not state appropriations.

Virginia Venture Partner GAP Funds provided businesses a total of $33 million in financing

Recipients of GAP Fund financing received $32.8 million between FY14 and FY23 to attract venture capital investment. This program made awards to 390 projects, for an average award of $84,144 per project. Program investments were $12.6 million in FY21 through FY23, which were considerably higher than an average of $2.5 million over the period FY14–FY21. Most (84) of the 97 completed projects in the GAP Funds program met their financing objectives for the period, according to the Virginia Innovation Partnership Corporation.

Economic impact analysis of incentive spending between FY14 and FY23 was conducted using economic modeling software developed by REMI, Inc.

(See Appendix H for the economic impact analysis used in this study.)

Tourism Development Financing Program provided tourism projects $86.6 million in financing

The Tourism Development Financing Program was created in 2011 and provides gap financing for tourism development projects otherwise unable to access capital. The program allows eligible projects to keep a portion of state sales and use taxes that are generated by the project. Nine projects have been funded by the program through FY23 with the largest being the Kalahari Resort in Spotsylvania County ($73.4 million).

Grants have higher economic benefits than tax incentives

Virginia's economic development incentives are estimated to generate additional economic activity for the state. Economic impact analysis estimates that private sector employment increased by about 14,000 jobs per year, Virginia GDP increased by $2.1 billion per year, and statewide personal income increased by $1.2 billion per year, on average, because of all incentives between FY14 and FY23 (Table 11). For every $1 million in spending on all incentives, it is estimated that an additional 58 jobs, $9 million in Virginia GDP, and $5 million in personal income per year, on average, were added to the Virginia economy. These estimates assume that only a portion of the projects' economic activity can be attributed to incentives. Research on incentives nationally suggests that, in most cases, between 75 percent and 98 percent of projects would have occurred anyway without incentives (Bartik 2018). (See Appendix H for more information about the assumptions used by type of incentive.)

TABLE 11
Virginia's economic development incentives are estimated to generate additional economic activity for the state (annual average, FY14–FY23)

	Grants	Tax credits	Tax exemptions (except data center)	Data center exemption	Other incentives	All incentives
Net impact to Virginia economy						
Private employment	4,970 jobs	6 jobs	806 jobs	40,947 jobs	101 jobs	14,072 jobs
Virginia GDP (Millions)	$1,055.2 M	-$19.5 M	$103.6 M	$4.9 B	$9.7 M	$2,132.9 M
Personal income (Millions)	$546.7 M	-$2.3 M	$80.5 M	$2.9 B	$9.6 M	$1,222.6 M
Impact to Virginia economy per $1 million of spending						
Private employment	137 jobs	8 jobs	20 jobs	84 jobs	12 jobs	58 jobs
Virginia GDP (Millions)	$28.7 M	$0.7 M	$2.7 M	$10.0 M	$1.5 M	$8.7 M
Personal income (Millions)	$15.1 M	$0.8 M	$2.1 M	$6.1 M	$1.3 M	$5.1 M
Impact on state revenue						
Total revenue (Millions)	$48.2 M	2.3 M	$11.0 M	$264.8 M	$1.4 M	$116 M
Spending on credit (Millions)	$38.4 M	$44.0 M	$66.2 M	$548.4 M	$24.1 M	$282.4 M
Net revenue (Millions)	$9.9 M	-$41.7M	-$55.2 M	-$283.5 M	-$22.7 M	-$166.5 M
Return in revenue	$1.26	5¢	17¢	48¢	6¢	41¢

SOURCE: Weldon Cooper Center economic impact analysis of business activity induced by Virginia's economic development incentive programs between FY14 and FY23. Assumes that only a small portion of the economic activity (i.e., jobs, capital investment, sales) can be attributed to grant. Only FY22–FY23 data center exemption economic and tax revenue impacts are included.
NOTE: Includes only direct, indirect, and induced impacts of completed projects. Assumes that only a portion of employment creation, capital investment, sales, or other activity is attributable to the programs. The gross impact on Virginia's economy is used to calculate the impact per $1 million per incentive awards and the impact to state revenue. This is consistent with how the economic development research literature typically calculates these impacts. Estimates of the grants' economic benefits are adjusted to account for projects that receive grants from more than one program as indicated in Table 5. Some additional duplication may still exist for projects that receive a grant and a tax credit, for example, but it is expected to be slight. (See Appendix H for more information about the economic impact estimates and the detailed results on total impact of the incentives, impact of raising income taxes by the amount of the incentives [opportunity cost], and revenue generated by source.) Data center exemption estimates are only for the two-year period for which data is available. "Other incentives" includes loan, gap financing, manufacturers' single sales factor apportionment, and income tax subtractions. Estimated impacts per $1 million in spending and estimated return in revenue per $1 spent for "other incentives" is low even though, as noted in prior reports, the estimated benefits and returns in revenue for Virginia's loan programs are high. This is because of a change in methodology for estimating the economic impacts for single sales manufacturing, for which spending is substantially higher and estimated economic impacts are low.

The additional economic activity generated varies by incentive type. The data center exemption is estimated to account for more than half of the net additional jobs and almost half of Virginia GDP and personal income from incentives (Table 11). The relatively large portion of the economic activity attributable to the data center exemption is because the exemption is so large relative to other incentives. Tax credits, in contrast, are estimated to generate a small portion of additional jobs and personal income and are estimated to generate a net loss in Virginia GDP. This loss occurs because of the reduction in Virginia GDP that results from increasing taxes to pay for the credits, particularly the Coalfield Employment Enhancement Tax Credit, which is greater than the total additional GDP generated.

Grants have higher economic benefits than tax incentives when benefits are assessed per $1 million spent (Table 11). For every $1 million spent on grants between FY14 and FY23, it is estimated that an additional 137 jobs, $29 million in Virginia GDP, and $15 million in personal income were added to the Virginia economy. Tax credits generate the lowest amounts of economic benefits, generating less than $1 million in Virginia GDP and less than $1 million in personal income per every $1 million in spending.

The return in revenue to the state for every $1 spent on incentives also varies widely by type of incentive (Table 11), with grants generating higher returns in revenue than tax incentives. For every $1 spent on grants between FY14 and FY23, it is estimated that the state receives $1.26 in revenue in return.

Grant programs have higher economic benefits and returns in state revenue than tax incentives for several reasons. Economic benefits per $1 million spent and returns in revenue are higher when awards are made to projects in traded industry sectors, which tend to have high economic multipliers and pay higher wages. Thirty-six percent of grant funding was directed to businesses in the manufacturing industry, which is a traded industry sector. In contrast, only 8 percent of non-data center sales and use tax expenditures, 8 percent of loan and gap financing, and 18 percent of tax credit expenditures are directed to manufacturing businesses. Though not targeted to manufacturing businesses, the data center exemption is targeted to a traded industry sector.

Businesses that receive grants must also agree to create jobs and make capital investments, usually above minimum levels. Economic benefits and returns in revenue are higher for programs targeted to businesses that commit to creating jobs and making capital investments. In contrast to grants, other incentives often do not have similar job creation and capital investment requirements for business recipients. The data center exemption is one exception.

Estimates of grant programs' economic benefits and returns in revenue are also more precise and less likely to be underestimated than other programs. More precise estimates of the economic benefit can be generated for grant programs because employment and capital expenditure performance data are readily available. Employment and capital expenditure impacts of businesses that received tax credits and most sales and use tax exemptions (with exception of the data center exemption) must be inferred from model simulations and may be slightly underestimated. These simulations produce relatively conservative estimates of program employment and output impacts and could result in slightly more conservative estimates of the economic benefits of these programs.

Appendix A: Study mandate

2024–2026 Appropriation Act
Passed as Chapter 2 of the Acts Assembly, May 13, 2024

§ 1-11 Item 25 E

E.1. The General Assembly hereby designates the Joint Legislative Audit and Review Commission (JLARC) to conduct, on a continuing basis, a review and evaluation of economic development initiatives and policies and to make such special studies and reports as may be requested by the General Assembly, the House Appropriations Committee, or the Senate Finance Committee.

2. The areas of review and evaluation to be conducted by the Commission shall include, but are not limited to, the following: (i) spending on and performance of individual economic development incentives, including grants, tax preferences, and other assistance; (ii) economic benefits to Virginia of total spending on economic development initiatives at least biennially; (iii) effectiveness, value to taxpayers, and economic benefits to Virginia of individual economic development initiatives on a cycle approved by the Commission; and (iv) design, oversight, and accountability of economic development entities, initiatives, and policies as needed.

3. For the purpose of carrying out its duties under this authority and notwithstanding any contrary provision of law, JLARC shall have the legal authority to access the facilities, employees, information, and records, including confidential information, and the public and executive session meetings and records of the board of VEDP, involved in economic development initiatives and policies for the purpose of carrying out such duties in accordance with the established standards, processes, and practices exercised by JLARC pursuant to its statutory authority. Access shall include the right to attend such meetings for the purpose of carrying out such duties. Any non-disclosure agreement that VEDP enters into on or after July 1, 2016, for the provision of confidential and proprietary information to VEDP by a third party shall require that JLARC also be allowed access to such information for the purposes of carrying out its duties.

4. Notwithstanding the provisions of subsection A or B of § 58.1-3 or any other provision of law, unless prohibited by federal law, an agreement with a federal entity, or a court decree, the Tax Commissioner is authorized to provide to JLARC such tax information as may be necessary to conduct oversight of economic development initiatives and policies.

5. The following records shall be excluded from the provisions of the Virginia Freedom of Information Act (§ 2.2-3700 et seq.), and shall not be disclosed by JLARC:

(a) records provided by a public body as defined in § 2.2-3701, Code of Virginia, to JLARC in connection with its oversight of economic development initiatives and policies, where the records would not be subject to disclosure by the public body providing the records. The public body providing the records to JLARC shall identify the specific portion of the records to be protected and the applicable provision of the Freedom of Information Act or other provision of law that excludes the record or portions thereof from mandatory disclosure.

(b) confidential proprietary records provided by private entities pursuant to a promise of confidentiality from JLARC, used by JLARC in connection with its oversight of economic development initiatives and policies where, if such records are made public, the financial interest of the private entity would be adversely affected.

6. By August 15 of each year, the Secretary of Commerce and Trade shall provide to JLARC all information collected pursuant to § 2.2-206.2, Code of Virginia, in a format and manner specified by JLARC to ensure that the final report to be submitted by the Secretary fulfills the intent of the General Assembly and provides the data and evaluation in a meaningful manner for decision-makers.

7. JLARC shall assist the agencies submitting information to the Secretary of Commerce and Trade pursuant to the provisions of § 2.2-206.2, Code of Virginia, to ensure that the agencies work together to effectively develop standard definitions and measures for the data required to be reported and facilitate the development of appropriate unique project identifiers to be used by the impacted agencies.

8. The Chairman of JLARC may appoint a permanent subcommittee to provide guidance and direction for ongoing review and evaluation activities, subject to the full Commission's supervision and such guidelines as the Commission itself may provide.

9. JLARC may employ on a consulting basis such professional or technical experts as may be reasonably necessary for the Commission to fulfill its responsibilities under this authority.

10. All agencies of the Commonwealth shall cooperate as requested by JLARC in the performance of its duties under this authority.

Appendix B: Research methods and activities

JLARC contracted with the University of Virginia's Weldon Cooper Center for Public Service (Weldon Cooper Center) for this review. Key research activities performed by Weldon Cooper Center for this study included

- data collection and analysis,
- estimation of sales and use tax exemptions,
- agency staff interviews, and
- review of documents and research.

Data collection and analysis

Weldon Cooper Center collected project data from 13 state agencies that administer Virginia economic development incentive programs. Data was provided for grant, tax credit, and loan or gap financing programs that have made awards. Among the data elements collected for the incentive programs were business identifiers, location, industry type, amount of grant approved and paid, and program performance metrics, such as number of jobs created, average wage levels, and capital investment (Table B-1). Some programs, namely the small business loan and tax incentive programs, do not collect performance data or maintain it electronically.

TABLE B-1
Data and information were collected from 13 state agencies on incentive awards

Agencies	Types of information
Department of Housing and Community Development	Business identifiers (name, federal tax ID number)
Department of Rail and Public Transportation	Industry
Tobacco Region Revitalization Commission	Location (locality) of project
Virginia Department of Agriculture and Consumer Services	Amount of incentive approved and paid
Virginia Department of Aviation	Number of jobs promised and created and timing
Virginia Department of Taxation	Capital investment promised and delivered and timing
Virginia Department of Transportation	Average wages promised and delivered and timing
Virginia Economic Development Partnership	Other performance metrics as specified
Virginia Film Office	
Virginia Innovation Partnership Corporation	
Virginia Port Authority	
Virginia Small Business Financing Authority	
Virginia Tourism Corporation	

SOURCE: Weldon Cooper Center.

Analysis of grant programs

For the spending analysis, program spending for discretionary and by-right grant programs by fiscal year were computed as the funds paid for completed projects and grant funds still committed toward active but unfinished projects. For most grant programs, spending was assigned to the same date/year when awards were approved. For this report, the approval date represents when a contract between the agency and the business is signed in either a memorandum of understanding or performance agreement. Many programs make award payments upon approval or soon after. Because custom grants are often large awards with long performance periods, spending is assigned to the fiscal year in which payments are made. Program expenditures by fiscal year were computed as the funds paid for completed projects and grant funds still committed toward active but unfinished projects.

For the grant award analysis, awards for all grant awards and amounts were assigned to the year in which the award was approved. Grant program awards and amounts were also categorized by location and industry using North American Industrial Classification System (NAICS) codes provided by the agency administering the grant or from information available from the Virginia Employment Commission (VEC) or other sources. Several agencies did not provide NAICS codes for each project.

For many grant projects, project awards were matched with VEC unit-level Quarterly Census of Employment and Wages (QCEW) records obtained under a confidentiality agreement with VEC. These grant records were matched with QCEW records using firm name, address, and when available, taxpayer identification numbers. In some instances, matches could not be found. In these cases, additional online research using Manta.com, other business directories, and company websites was conducted to characterize the primary industry of the establishment and/or firm primary. When information was not available, certain assumptions about the nature of the firm or prospective firm were made. For Enterprise Zone Real Property Investment Grant projects that could not be otherwise identified (generally Limited Liability Corporation beneficiaries set up for commercial real estate development purposes), a NAICS code of "531120" ("Real Estate and Rental and Leasing") was assigned. Governor's Motion Picture Opportunity Fund projects were characterized as NAICS 512110 ("Motion Picture and Video Production"). Speculative infrastructure projects funded by the Tobacco Commission Megasite Program, Virginia Business Ready Sites Program, and Economic Development Access Program were assumed to be NAICS 333000 ("Machinery Manufacturing").

Nineteen grants were not assigned to localities. Twelve Governor's Motion Picture Opportunity Fund awards, totaling $17.7 million, were also not assigned to localities because filming activities for these projects occurred in multiple locations throughout the state but principally in Central Virginia. Eight GO Virginia projects ($10.4 million) for site improvements benefited several multijurisdictional industrial parks. Lastly, one New Airline Incentive Fund grant benefited an airline (Breeze Airways) that provided new airline service to several airports ($250,000).

Grant project records do not systematically include the employment of businesses receiving awards across programs. Estimation of the employment size of the business that received the grant was conducted by matching grant records with VEC QCEW payroll employment records that corresponded to the year of the award. Many companies have more than one location in Virginia, and only the employment levels for the specific location of the business that qualified for the grant were included in the analysis. Project records for FY14 through FY23 were matched by fiscal year of award with the corresponding VEC employment data by calendar year between 2013 and 2022 (i.e., FY23 project records were matched to calendar year 2022 VEC employment records). Using this process, 59 percent of the total number of awards and 65 percent of the award amounts were accounted for.

Project awards were weighted to account for the underrepresentation of smaller awards (and correspondingly small establishments) relative to their occurrence in the grant files to improve the representation of smaller establishments in the tabulations.

Analysis of loan programs

For the four loan programs administered by the Virginia Small Business Financing Authority—the Economic Development Loan Fund, Loan Guaranty Program, State Cash Collateral Program, and SWaM Loan Fund—there were no state appropriations for the programs for the FY14–FY23 period. These programs are primarily revolving loan funds or secure funding outside the legislative appropriation process, but some have received state appropriations in the past. Since some programs have relied or continue to rely on federal funding, only those projects that could be attributed to previous state funding were included in this analysis. The costs of the programs were estimated to be the actual or projected defaults. The average default rate (1.1 percent) for these loans was also applied to awarded loans to estimate the "cost" of the loan portion of Tobacco Region Opportunity Fund (TROF) awards. In the last seven years, the Tobacco Region Revitalization Commission has begun to issue a larger portion of its TROF awards in the form of revolving loans.

Analysis of Virginia Venture Partners GAP Funds

The Virginia Venture Partners GAP Funds, administered by the Virginia Innovation Partnership Corporation, generate a return on its investments in early-stage firms. Gross realized returns derive from merger and acquisition activity, to include escrows, dividends, and milestone payments, along with secondary sale of assets (GAP Funds' equity positions) and convertible note repayments. Based on prior analysis of the program for the period FY11–FY20, the funds recouped nearly $20 million in gross returns for $32.3 million in state appropriations during the period (62 percent). Thus, to estimate program expenditures in this report, it is assumed that only 38 percent of total completed project investments relied on new state appropriations over the period and represented new state spending on the program.

Analysis of tax credits

For quantifying the revenue impact of state economic development-related tax credits, Weldon Cooper Center used corporate and individual tax credit files obtained from the Virginia Department of Taxation (Virginia Tax). These files list tax credit redemptions by fiscal year of utilization based on when the return was processed. (See the Virginia Tax annual report, Table 3.1: Fiscal Year Tax Credits.)

Incentives excluded from the analysis and report

Several programs did not make awards during the period of analysis (FY14–FY23) and are not included in this report. Three grant programs have been active for over a decade but have not yet funded private business projects:

- Tobacco Commission Agribusiness Grant Program,

- Tobacco Commission Southside Economic Development Grant Program, and
- Tobacco Commission Southwest Economic Development Grant Program.

Four grant programs made awards that occurred earlier than FY14, and these incentives are not included in the sections pertaining to awards and performance. They are included in the spending analysis since grant payments were issued between FY14 and FY23. These grants include:

- Aerospace Engine Manufacturing Performance Grant Program (Rolls-Royce),
- Advanced Shipbuilding Training Facility Grant Program (Huntington Ingalls)
- Semiconductor Grant Program (custom grant for Micron awarded in 2005), and
- SRI custom grant.

The award analysis does not include these four custom grants, but the spending analysis includes payments made to Rolls-Royce, Huntington Ingalls, Micron, and SRI.

This report describes four economic development incentive programs that were not included in the 2024 report that had not yet made awards or provided financial benefits as of FY23. They include the Cloud Computing Cluster Infrastructure Grant (Amazon Web Services), the Financial Services Expansion Grant (Wells Fargo), the Property Analytics Firm Infrastructure Grant (CoStar Group), and the Controlled Environment Agriculture Exemption.

Estimation of business savings from sales and use tax exemptions

Sales and use exemptions provide relief from sales and use taxes on selected taxable goods and services for businesses in targeted industries. For most exemptions, eligible businesses obtain a sales and use exemption certificate from Virginia Tax (available online) and present it to merchants at the point of sale to claim the exemption. Neither the merchant nor the purchaser is required to report the tax savings to Virginia Tax outside of an audit process. Therefore, the size of these tax savings to businesses must be estimated by other means. For other exemptions, such as the data center and pollution control equipment exemptions, Virginia Tax issues the exemption certificate after approving an application. The business may not have the certificate at the time of eligible purchases and can apply for a refund once the exemption certificate is obtained.

For quantifying forgone revenue because of sales and use tax exemptions, Weldon Cooper Center relied on Virginia Tax fiscal impact estimates and staff-generated estimates based on IMPLAN and other data sources (Table B-2). Virginia Tax estimates are based on a variety of approaches, including industry surveys, industry association tallies, and imputations made from secondary data sources such as federal statistical data. Some estimates rely on sales and use tax exemption estimates published as part of detailed tax expenditure studies conducted by Virginia Tax in the early- and mid-1990s. More recent estimates are sometimes available when Virginia Tax issues fiscal impact estimates to inform new General Assembly legislation. Weldon Cooper Center estimates were substituted for Virginia Tax estimates in three different situations:

- if the Virginia Tax estimates were based on much older estimates and credible estimates could be generated using more recent data and alternative methods;
- if Virginia Tax estimates were not available for a specific sales and use tax exemption; and

- if an alternative methodology had practical or conceptual advantages over the Virginia Tax estimates.

Weldon Cooper Center tax revenue estimates rely primarily on IMPLAN data for Virginia. IMPLAN is a commercial economic impact model produced by IMPLAN Group, LLC. It is based on input-output analysis, which requires estimates of the value of intermediate input purchase for each industry. The intermediate input purchase estimates for Virginia formed the basis of the relevant sales tax base for sales and use tax revenue impact calculations. Spending on durable and leased good inputs is estimated by multiplying industry output by gross absorption coefficients for relevant IMPLAN commodity sectors, using the most recent data for industries and commodities. These coefficients represent the input purchases for various commodities per dollar of output. For example, the construction machinery manufacturing industry spent $0.00170 per dollar of output on commodity railroad rolling stock. This absorption coefficient was multiplied by the output of the construction machinery equipment industry for 2015 ($122,220,940) to obtain the estimated expenditure on this input ($208,000).

Because the exemptions are sometimes more narrowly targeted than the individual IMPLAN sectors available, supplemental data from Lightcast™, Virginia Employment Commission, Bureau of Labor Statistics, and Bureau of Transportation Statistics was used to apportion the sector purchases to narrower industry subsets. For example, the airline common carrier exemption is available for air common carriers that provide scheduled service to Virginia airports at least once per week. Eligible purchases were imputed by apportioning IMPLAN input purchase estimates by the percentage of the air transportation industry (NAICS 481) providing scheduled service (NAICS 4811---Scheduled Air Transportation) and apportioning again based on the percentage of scheduled departures performed by airlines that provide service at least once per week based on Bureau of Transportation Statistics T-100 Air Carrier Traffic Segment data.

TABLE B-2
Estimates of business savings from sales and use tax exemptions were based on different methods and sources

Exemption	Sources used to derive estimate
Airline Common Carriers Exemption	IMPLAN, Bureau of Transportation Statistics (BTS), Lightcast™
Aircraft Parts, Engines, and Supplies Exemption	Federal Aviation Administration aircraft registration data and Conklin& de Decker Aircraft Cost Evaluation V18.20
Certain Printed Materials for Out-of-State Distribution Exemption	Virginia Tax (Sales and use tax study 1991)
Contractor Temporary Storage Exemption	Virginia Tax (Sales and use tax study 1995)
Data Centers Exemption	VEDP Data Center Exemption Survey data
Electrostatic Duplicators Exemption	IMPLAN, Lightcast™
Film, Television, & Audio Production Inputs Exemption	IMPLAN, Lightcast™
Media Provider Equipment Exemption	Virginia Tax estimates (2017 and 2022)
Out-of-State Nuclear Facility Repair Exemption	IMPLAN, VEC, Lightcast™
Pollution Control Equipment & Facilities Exemption	Weldon Cooper Center survey of Virginia Tax form ST-11A users
Railroad Common Carriers Exemption	IMPLAN
Railroad Rolling Stock Exemption	RailInc, Lightcast™, U.S. Census Commodity Flow data
Research & Development Exemption	NSF Business R&D and Innovation Survey
Semiconductor Manufacturers Exemption	IMPLAN, industry use estimate
Semiconductor Wafers Exemption	IMPLAN, industry use estimate
Ships and Vessels Exemption	Weldon Cooper Center survey of ship repair and dredging firms, VEC
Taxi Parts & Radios Exemption	Virginia Tax fiscal impact, HB1488 (2004)
Uniform Rental & Laundry Businesses Exemption	IMPLAN, Lightcast™
Virginia Spaceport Users Exemption	Number of Mid-Atlantic Regional Spaceport launches and revenue per launch from Federal Aviation Administration

SOURCE: Weldon Cooper Center.

For the current report, the data center exemption methodology was revised to bring it into conformity with the methodology used by Virginia Tax and VEDP. Previous estimates were based on the job creation and capital investment information data centers reported to VEDP to demonstrate they met the eligibility requirement to use the exemption. In 2021, VEDP began collecting annual job creation, capital investment, and the value of the exemption from all data centers using the exemption for a new biennial report required in statute. The previous method markedly underestimated actual data center exemption tax expenditures, at least in part, because it did not accurately capture information from data centers after they qualified for the exemption. Eligible data center expenditures for computer equipment and software were multiplied by the effective state tax rate (4.28 percent after adjusting for the dealer discount) to arrive at new *state* revenue impact estimates. Exempted amounts pertaining to the local option sales tax and regional sales taxes are excluded in this report. This new and more complete information is available only for FY21 through FY23.

For other sales and use tax exemptions, the sectors targeted vary by exemption, as do the categories of purchases that are eligible for exemption. Generally speaking, tangible personal property purchases and leases are covered though the specific items sometimes differ. For instance, the railroad rolling stock exemption gives Virginia manufacturing firms an exemption on purchases of rolling stock. The tax base is determined by aggregating purchases of rolling stock across all Virginia manufacturing industries.

Other adjustments are needed to convert calendar years to fiscal years. IMPLAN purchases are expressed in terms of calendar years; thus fiscal year estimates were calculated by averaging two calendar years (e.g., FY15 is the average of CY14 and CY15). The last calendar year of data available from IMPLAN is 2022. Therefore, FY23 revenue estimates were calculated by inflating the FY22 estimates by the consumer price index (CPI).

Agency interviews

In 2017, Weldon Cooper Center and JLARC staff conducted structured interviews with state agency staff that administered and/or provided research support for economic development incentive programs. The interviewees included representatives of each of the 13 agencies that administer grants, loans, and gap financing and several staff from Virginia Tax. Topics included the purpose of each program, criteria used in selecting award recipients and amounts, and data availability and quality for tracking program performance. Additional interviews are performed only as needed, such as when new incentive programs are adopted, programs are substantially changed, or programs are selected as part of an intensive review for that year.

Review of documents and research

Weldon Cooper Center reviewed several sources of information, including documents, reports, and published or unpublished research. The purpose of this literature review was to understand the purpose and goals of Virginia economic development incentive programs, determine the best approach to quantify the revenue impacts of sales and use tax exemptions, and develop an approach for performance evaluation that draws on best practices from other states. Sources consulted included

- Virginia agency documents that describe economic development incentive program purpose, application requirements, award criteria, and other features;
- Virginia Legislative Information System documents describing grant and sales and use exemption statutes and Virginia Tax fiscal impact estimates; and
- state economic development performance evaluations published by state agencies or their consultants in Virginia and other states.

Appendix C: Incentive program descriptions

Ninety-six economic development incentive programs are subject to this review. These include 47 grant programs, 16 tax credits, 20 tax exemptions, and 13 other programs.

Grant programs

Twelve state agencies administer 47 economic development incentive grant programs that are subject to this review. These programs reflect a variety of economic development goals and often target different activities, including development in disadvantaged regions (Tobacco Region Opportunity Fund and Enterprise Zone grants), transportation enhancements for business expansion and recruitment (Economic Development Access Program, Rail Industrial Access Program, and Transportation Partnership Opportunity Fund grants), and small business development (Small Business Investment Grant).

Programs also target industries such as agriculture and forestry (Agriculture and Forestry Industries Development Grant), corporate headquarters (Virginia Economic Development Incentive Grant), motion picture production (Governor's Motion Picture Opportunity Fund), and port-related industries (Port of Virginia Economic and Infrastructure Development Grant).

The state has also created customized grants for individual large industrial attraction and expansion projects, such as

- Amazon HQ2 (Major Headquarters Workforce Grant),
- Amazon Web Services (Cloud Computing Cluster Infrastructure Grant),
- Amazon Web Services (Special Workforce Grant Fund),
- Blue Star Manufacturing (Nitrile Glove Manufacturing Training Grant),
- CMA CGM (Shipping and Logistics Headquarters Grant),
- Costar Group (Property Analytics Firm Infrastructure Grant),
- LEGO Group (Precision Plastic Manufacturing Grant),
- Merck (Pharmaceutical Manufacturing Grant),
- Micron (Semiconductor Manufacturing Grant),
- Morgan Olson (Advanced Production Grant),
- Microsoft (Technology Development Grant Fund),
- Huntington Ingalls (Advanced Shipbuilding Training Facility Grant and Advanced Shipbuilding Production Facility Grant),
- Rocket Lab (Space Flight Operations Facilitation Program),
- Rolls-Royce Corporation (Aerospace Engine Manufacturing Performance Grant),
- Siemens Gamesa (Offshore Wind Component Grant),
- Volvo (Truck Manufacturing Grant Fund), and
- Wells Fargo (Financial Services Expansion Grant Fund).

The Major Eligible Employer Grant program likewise targets large expansions; so far both Booz Allen Hamilton and Philip Morris have received awards for expanding their state footprints.

Seventy-six percent of total spending on economic incentive grants over the FY14 to FY23 period was administered by two state agencies, the Virginia Economic Development Partnership (60 percent) and the Department of Housing and Community Development (16 percent). The Tobacco Region Revitalization Commission and Virginia Film Office also awarded large portions of total grant funding at 9 percent and 5 percent of the total, respectively.

TABLE C-1
Forty-seven incentive grant programs are administered by 12 state agencies

State agency/program *(year enacted)*	Purpose	Description
Virginia Innovation Partnership Corporation (formerly Center for Innovative Technology)		
Commonwealth Commercialization Fund *(2011)*	Promote high technology economic development through commercialization of promising research and development.	Grants are made based on scientific merit and economic development potential for technology at the proof-of-concept stage or earlier in targeted high-technology industries. Funds must be matched by recipient.
Department of Agriculture and Consumer Services		
Agriculture and Forestry Industries Development Grant *(2012)*	Attract new and expanding agriculture and forestry processing value-added facilities that use Virginia-grown products.	Eligible projects must produce value added agricultural or forestry products that derive at least 30% of agricultural or forestry product inputs from Virginia. Incentive grants requests are made by the host political jurisdiction and must be locally matched.
Department of Small Business and Supplier Diversity		
Small Business Jobs Grant Fund Program *(2010)* *(eliminated 2020)*	Support small business job creation and investment.	Grants are made to small businesses in targeted sectors that create at least five full-time positions paying at least 1.35 times the federal minimum wage and making a capital investment of at least $50,000 within two years. Funding ($500–$2,000) per job is based on job characteristics.
Department of Housing and Community Development		
Job Creation Grant (Enterprise Zone) *(2005)*	Encourage job creation in distressed communities designated as enterprise zones.	Grants are awarded to qualified businesses that create at least four permanent full-time jobs in an enterprise zone. Qualifying jobs must pay at least 1.75 times the federal minimum wage (lowered to 1.5 times for high unemployment areas) and offer health benefits.

State agency/program *(year enacted)*	Purpose	Description
Real Property Investment Grant (Enterprise Zone) *(2005)*	Encourage private investment in distressed communities designated as enterprise zones.	Grants are awarded to investors making qualified investments in industrial, commercial, or mixed-use real property in an enterprise zone. The grant is computed as 20% of the investment amount minus a base investment with a project cap of $200,000.
GO Virginia (Virginia Growth and Opportunity Fund Grants) site development projects *(2017)*	Promote private sector business and employment growth through regional cooperation.	Grant funds are allocated to cooperative business site development projects using the guidance of competitive assessments developed by the VEDP Business Ready Sites Program.
Department of Rail and Public Transportation		
Rail Industrial Access Program *(1987)*	Encourage construction, reconstruction, or improvement of railroad tracks serving new or expanding industrial sites and divert truck traffic to the freight rail network.	The grant is available to businesses that seek access to a common carrier railroad. Funding is capped at $750,000, and businesses must match Railroad Industrial Access funding with a minimum of 30% local or private funding. The program evaluates applicants using a project scoring system.
Department of Transportation		
Economic Development Access Program *(1956)*	Encourage construction, improvement, or maintenance of roads serving new or expanding industrial sites.	The grant is made in support of road enhanced access for basic employers that export at least half of output outside state. Award amount is based on value of capital investment by qualifying companies who locate at the economic development site with a cap of $850,000 with a qualifying match.
Transportation Partnership Opportunity Fund *(2006)*	Improve transportation access for business development projects.	Grants of up to $5 million are available to companies that make onsite and offsite transportation access improvements related to economic development such as road, rail, mass transit, or other transportation access improvements. Projects must meet Commonwealth's Development Opportunity Fund or Virginia Investment Performance Grant program criteria.
Department of Aviation		
Governor's New Airline Service Incentive Fund *(2020)*	Provide or assist in the provision of marketing, advertising, or promotional activities by airlines in connection with the	Grants are available for the first 12 months of service. Grant amounts vary from $5,000 to $25,000 for one route based on whether service is year-round

State agency/program *(year enacted)*	Purpose	Description
	launch of new air passenger service at Virginia airports.	or seasonal and daily or less than daily. Applicant airlines may qualify for multiple routes throughout the state and receive combined grants of up to $250,000.
Small Business Financing Authority		
Small Business Investment Grant Fund (*2012*)	Assist small businesses obtain investment capital.	Grant for equity or subordinated debt investment in eligible small business. Grant amount equals 10% of qualified investments made in small businesses not to exceed $250,000 per investor.
Tobacco Region Revitalization Commission		
Agribusiness Grants *(2002)*	Promote agricultural and agribusiness growth, development, and diversification in the tobacco region to help the agricultural industry pursue market opportunities and reduce dependence on tobacco and tobacco-related business.	Awards are made to projects likely to generate new income and investment and align with targeted categories such as applied research and education, product processing, livestock and crop demonstration, local foods, multi-purpose agriculture centers, and wholesale/retail cooperatives.
Megasite Grants *(2010)*	Develop large, business-ready and publicly owned industrial sites across the tobacco region to attract major employer and investment projects.	Megasite funding is available only for the eight sites that have been developed to date with Tobacco Commission support. Megasite projects are defined as those that create at least 400 jobs and $250 million in private investment.
Southside Economic Development Grants *(1999)*	Promote economic development in the Southside localities of the Tobacco Region.	Funds are allocated by locality. Awards fall into strategic funding categories identified as important for economic development including infrastructure improvements, workforce training, regional tourism, building industry clusters, and entrepreneurial development.
Southwest Economic Development Grants *(1999)*	Promote economic development in the Southwest localities of the Tobacco Region.	Awards fall into strategic funding categories identified as important for economic development including infrastructure improvements, workforce training, regional tourism, building industry clusters, and entrepreneurial development.

State agency/program *(year enacted)*	Purpose	Description
Tobacco Region Opportunity Fund *(1999)*	Attract new jobs and investments for the Tobacco Region through business attraction and expansion.	Program provides both grants and loans. Requests are initiated by the host. Eligible projects must create jobs that pay an annual average wage that is above the locality's prevailing annual average wage and make capital investments of at least $10,000. Applications are evaluated using a ROI model with award amounts based on that analysis.
Virginia Economic Development Partnership		
Advanced Production Grant Program and Fund (Morgan Olson) *(2020)*	Promote the location of business truck manufacturing facility in the Commonwealth. This customized performance-based grant is used to support the location and expansion of Morgan Olson, LLC in Pittsylvania County.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures include employment and capital investment and annual average wage.
Advanced Shipbuilding Training Facility Grant Program (Huntington Ingalls) *(2011)*	Promote the expansion of advanced shipbuilding in the Commonwealth. This customized performance-based grant was used to support the growth of Huntington Ingalls Shipbuilding in Newport News City.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures include employment, capital investment, and training expenditures.
Advanced Shipbuilding Production Facility Grant Program (Huntington Ingalls) *(2016)*	Promote the expansion of advanced shipbuilding in the Commonwealth. This customized performance-based grant is used to support the expansion of Huntington Ingalls Shipbuilding in Newport News City.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures include employment and capital investment.
Aerospace Engine Manufacturing Performance Grant Program (Rolls Royce) *(2007)*	Attract an aerospace engine manufacturer to locate in the Commonwealth. This customized performance-based grant was used to support the growth of the Rolls Royce turbine plant in Prince George County and industry cluster firms.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures include employment, annual average wages, capital investment, and number of trainees.
Business Ready Sites Program *(2016)*	Encourage the development of sites and associated infrastructure for industrial and commercial uses as tools for business attraction.	Incentive grants consist of two types. Site characterization grants fund site needs assessment. Site development grants fund site development costs. Eligible sites must have at least 100 contiguous, developable acres and meet additional criteria.

State agency/program ***(year enacted)***	**Purpose**	**Description**
Cloud Computing Cluster Infrastructure Grant (Amazon Web Services) *(2023)*	Promote cloud computing by providing funds for companies creating significant numbers of jobs and making large capital investment. This customized performance-based grant is used to support the expansion of Amazon data centers in multiple Virginia localities.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures include employment, annual average wages, and capital investment.
Commonwealth's Development Opportunity Fund *(1996)*	Attract new businesses and support existing business expansion.	Grant program is a discretionary deal closing fund for firms exporting at least half of output outside state. Funds must be matched by host locality and are used for site acquisition and improvement, infrastructure, building construction, and employee training.
Financial Services Expansion Grant Fund (Wells Fargo) *(2024)*	Support expansion of financial services facility in the Commonwealth. This customized performance-based grant is used to support the expansion of Wells Fargo in Roanoke County.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the Commonwealth and the company. Performance measures include employment, capital investment, and average annual wages.
Major Eligible Employer Grant *(1999)*	Attract new or expanding large employers to the state.	The grant is targeted to major employers that make a capital investment of at least $100 million and create at least 1,000 jobs. This job threshold is reduced if high-paying jobs are created.
Major Headquarters Workforce Grant Fund (Amazon HQ2) *(2019)*	Attract a major corporate headquarters to locate in the Commonwealth. This customized performance-based grant is used to support the establishment of the Amazon HQ2 in Arlington County.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the Commonwealth and the company. Performance measures include employment, capital investment, and average annual wages.
Nitrile Glove Manufacturing Training Program (Blue Star) *(2022)*	Support location, recruitment and training for nitrile glove manufacturing company. This customized performance-based grant is used to support the location of Blue Star Manufacturing in Wythe County.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the Commonwealth and the company. Performance measures include employment, capital investment, and average annual wages.
Pharmaceutical Manufacturing Grant Program (Merck) *(2020)*	Support expansion of pharmaceutical manufacturing facility in the Commonwealth. This customized performance-based grant is used to support the expansion of Merck Sharp & Dohme Corp. in Rockingham County.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures include employment, annual average wages, and capital investment.

State agency/program *(year enacted)*	**Purpose**	**Description**
Precision Plastic Manufacturing Grant Program (LEGO Group) *(2023)*	Support the location of a company that engages in the manufacture and distribution of precision plastic products in the Commonwealth. This customized performance-based grant is used to support the location of LEGO Group in Chesterfield County.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the Commonwealth and the company. Performance measures include employment, capital investment, and average annual wages.
Property Analytics Firm Infrastructure Grant* (CoStar Group)	Support expansion of real estate analytics firm in the Commonwealth. This customized performance-based grant is used to support the expansion of the Costar Group in the City of Richmond.	Performance-based payments based on employment, capital investment, and average annual wages are used to reimburse the City of Richmond for funding infrastructure improvements in vicinity of firm expansion. The firm is also given option to utilize Market Based Sourcing in corporate income tax apportionment in lieu of Cost of Performance method if performance benchmarks are achieved and maintained.
Semiconductor Custom Grant (Micron)--Semiconductor Memory or Logic Wafer Manufacturing Performance Grant *(2004)*	Promote and expand semiconductor product manufacturing. This customized performance-based grant was used to support the expansion of Micron in Manassas City.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures include employment and capital investment.
Semiconductor Manufacturing Grant Fund (Micron) *(2019)*	Promote and expand semiconductor product manufacturing and research. This customized performance-based grant is used to support the expansion of Micron in Manassas City.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the Commonwealth and the company. Performance measures include employment, capital investment, and average annual wages.
Shipping and Logistics Headquarters Grant Program (CMA CGM) *(2021)*	Support retention and expansion of shipping and logistics company in the Commonwealth. This customized performance-based grant is used to support the retention and expansion of CMA CGM in the City of Norfolk.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the Commonwealth and the company. Performance measures include employment, capital investment, and average annual wages.
Space Flight Operations Facilitation Program (Rocket Lab) *(2024)*	Support location, including site development and construction, for guided missile and space vehicle parts company in the Commonwealth. This customized performance-based grant is used to support the location of Rocket Lab in Accomack County.	Performance-based payments based upon employment, capital investment, and average annual wages used to reimburse the Virginia Space Authority for funding construction of a shell building for the company's use.

State agency/program *(year enacted)*	Purpose	Description
Special Workforce Grant Fund (Amazon Web Services) *(2019)*	Attract an eservices company to locate operations in the Commonwealth. This customized performance-based grant was used to establish Amazon Web Services in Fairfax County.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the Commonwealth and the company. Performance measures include employment, capital investment, and average annual wages.
SRI custom grant *(2006)*	Promote public-private R&D and commercialization activities to facilitate economic growth. This customized grant was used to support SRI Shenandoah Valley to establish the Center for Advanced Drug Research in Rockingham County.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures include employment and capital investment.
Technology Development Grant Fund (Microsoft) *(2021)*	Promote location of technology company. This customized performance-based grant is used to support attraction of the Microsoft software development and R&D facility in Fairfax County.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the Commonwealth and the company. Performance measures include employment, capital investment, and average annual wages.
Truck Manufacturing Grant Fund (Volvo) *(2021)*	Promote the expansion of truck manufacturer in Pulaski County. This customized performance-based grant was used to support the expansion of Volvo Trucks in Pulaski County.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the Commonwealth and the company. Performance measures include employment, capital investment, and average annual wages.
Virginia Economic Development Incentive Grant *(2005)*	Encourage the location of significant headquarters, administrative, research and development, and basic service companies.	Companies must agree to create a minimum of 400 jobs that pay 1.5 times the local prevailing average wage (or create 300 jobs paying 2.0 times the local prevailing average wage) and make a capital investment of $6,500 per job or more.
Virginia Investment Performance Grant *(1999)*	Encourage Virginia manufacturer retention and expansion through new capital investment and R&D.	Grant is targeted to manufacturers that have operated in the state for at least 3 years, make a capital investment of at least $25 million, and face high risk of relocating elsewhere. New job creation is not required, but current employment levels must be maintained.

State agency/program *(year enacted)*	Purpose	Description
Virginia Jobs Investment Program *(1965)*	Support private business job creation and worker training and retraining.	Grants are awarded for creating new jobs or upgrading skills for existing workers. Criteria vary for small and large businesses: job creation awardees must create at least 5 or 25 new jobs and make a capital investment of at least $100,000 or $1 million. Retraining awardees must retrain 10 full-time employees and make a capital investment of $500,000.
Virginia Leaders in Export Trade Program *(2002)*	Help companies expand their markets and encourage the export of products and services to international markets.	The VALET program provides grants, technical assistance, and training to assist eligible businesses to develop international export markets. Reimbursement is up to $30,000 per company for approved export-related expenses and is competitive. Awardees must complete a two-year program.
Virginia Talent Accelerator Program (custom workforce incentive) *(2019)*	Expedite set-up and scale-up of new tradeable sector operations.	The program provides training and recruitment services in partnership with the Virginia Community College System to qualifying competitive economic projects in the manufacturing, distribution, IT, corporate headquarters, R&D and shared service center sectors that create at least 25 jobs (for manufacturing and distribution) or 50 jobs (for other eligible operations) in the first year of operation and make a significant capital investment.
Virginia Trade Show Assistance Program *(2016)*	Help companies expand their markets and encourage the export of products and services to international markets.	The grant reimburses company trade show attendees for up to $10,000 of the cost of trade exhibits.
Virginia Film Office		
Governor's Motion Picture Opportunity Fund *(1999)*	Support growth of the film and television industries in Virginia.	Grants are awarded to production companies that film in Virginia. Awards are made on a discretionary basis considering project expenditures in Virginia, employment, presence of any local commitment, geographic diversity, and industry or company growth potential in Virginia.

State agency/program *(year enacted)*	Purpose	Description
Virginia Port Authority		
Offshore Wind Component Grant Program (Siemens Gamesa) *(2021)*	Fund capital projects for infrastructure improvements necessary to improve the Portsmouth Marine Terminal to handle loading in and out of large, heavy offshore wind components and serve as an offshore wind hub. This customized performance incentive (bond authorization) is used to support the location of Siemens Gamesa in the City of Portsmouth.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the Commonwealth and the company. Performance measures include employment, capital investment, and average annual wages.
Port of Virginia Economic and Infrastructure Grant *(2014)*	Encourage maritime companies to locate or expand to promote the growth of the Port of Virginia.	Grants are awarded to companies in maritime industries that create at least 25 permanent full-time jobs and are involved in maritime commerce or import/export industry. The award per job is scaled to the number of jobs created.

*No date of enactment yet because the memorandum of understanding between the state and the company has not been signed.

Tax credits

Sixteen economic development tax credits, which are available to eligible applicants when filing income tax forms, were subject to this review. The state offers three types of credits: transferable, refundable, and non-refundable and non-transferable. Most economic development tax credits in this report are the latter two types. In most cases, non-refundable and non-transferable tax credits can be credited against a company's tax liability over a designated "carryover" period. For these programs, carryover periods vary from a low of three years to a high of 15 years. Three of the economic development tax credit programs offer refundable credits: Coalfield Employment Enhancement Tax Credit, Motion Picture Production Tax Credit, and Research and Development Expenses Tax Credit. A refundable tax credit allows taxpayers to be reimbursed by the difference between the credit amount and tax liability. The Virginia Port Volume Increase Tax Credit was changed from a non-refundable and non-transferable tax credit to a transferable one in 2019.

TABLE C-2
Sixteen economic development tax credits are available through state's corporate and individual income tax

Program	Purpose	Description
Barge and Rail Usage Tax Credit *(2011)*	Encourage use of rail and waterway transportation and decrease Virginia road congestion.	Tax credit for facilities engaged in port-related activities utilizing barge and rail rather than motor transportation. Credit is awarded based on amount of increased cargo shipped by barge and rail over previous tax year.

Program	**Purpose**	**Description**
Biodiesel and Green Diesel Fuels Producers Tax Credit *(2008)*	Promote biodiesel and green diesel production.	Tax credit for biodiesel and green diesel fuel producers making up to two million gallons of fuel per year. The credit amount is $0.01 per gallon but cannot exceed $5,000 per year.
Coalfield Employment Enhancement Tax Credit *(1996)* *(expired January 1, 2022)*	Encourage production of Virginia metallurgical coal and coalbed methane.	Tax credit for metallurgical coal and coalbed methane producers that is based on mining method and seam thickness.
Farm Wineries and Vineyards Tax Credit *(2011)*	Promote growth of the Virginia wine industry.	Tax credit for eligible vineyards and winery qualified expenditures such as equipment and supplies used in winemaking. Credit is 25% of all qualified expenditures.
Green Job Creation Tax Credit *(2010)*	Promote creation of jobs in renewable and alternative energy industries.	Tax credit for creating green jobs during the taxable year. The annual credit amount is $500 per green full-time job created that pays at least $50,000 per year in wages. The credit is first allowed for the taxable year in which the job has been filled for at least one year and for each of the four succeeding taxable years.
International Trade Facility Tax Credit *(2011)*	Encourage port-related economic activity by increasing capital investment or new hiring connected to international trade facilities.	Tax credit for international trade facilities that show at least 5% increase in Virginia port shipments. Job credit is equal to $3,500 per job. Capital investment credit is equal to 2 percent of capital investment.
Major Business Facility Job Tax Credit *(1995)*	Promote growth of company headquarters; manufacturing, agricultural, and transportation businesses; and export-oriented service industries such as legal and financial services. Retail industries are excluded.	Tax credit of $1,000 per job for creation of new, full-time jobs exceeding threshold of 50 jobs or 25 jobs for enterprise zone/economically distressed areas.
Major Research and Development Tax Credit *(2016)*	Promote research and development activities.	Tax credit for qualified R&D expenses greater than $5 million. Credit is based on difference between R&D expenses during taxable year and 50% of the average expenses incurred during previous 3 years.
Motion Picture Production Tax Credit *(2011)*	Encourage motion picture production and use of Virginia resident labor and merchants in production.	Tax credit for qualifying expenses of eligible productions that complete a motion picture. Tax credit is equal to 15% of qualifying expenses, with bonuses rates for Virginia resident payroll and production in economically distressed areas.

Program	Purpose	Description
Qualified Equity and Subordinated Debt Investment Tax Credit *(1999)*	Encourage investment in high-tech small business ventures.	Tax credit for equity or subordinated debt investment in qualified small businesses engaged in technology-related fields. Credit amount is equal to 50% of qualified investments during the taxable year but may not exceed tax liability or $50,000.
Recyclable Materials Processing Equipment Tax Credit *(1991)*	Encourage recycling of waste and pollution control.	Tax credit for qualifying purchases of equipment to produce items from recyclable materials. Credit is equal to 20% of the purchase price of the recycling equipment. The allowable credit cannot exceed 40% of tax liability.
Research and Development Expenses Tax Credit *(2011)*	Promote research and development activities.	Tax credit for qualified R&D expenses. Credit is equal to 15% of first $300,000 of expenses or 20% if conducted with Virginia higher education. Alternatively, credit may be computed as 10% of difference of expenses and 50% of previous 3-year average.
Telework Expenses Tax Credit *(2012)* *(expired January 1, 2019)*	Encourage telework to ease road congestion.	Tax credit for eligible expenses incurred for permitting employees to telework. Credit is equal to up to $1,200 per teleworking employee or $20,000 for conducting a telework assessment. Maximum credit is $50,000 per calendar year.
Virginia Coal Employment and Production Incentive Tax Credit *(2001)* *(expired January 1, 2022)*	Encourage use of Virginia coal by Virginia power generators to increase Virginia coal production and employment.	Tax credit of $3 per ton of Virginia mined coal purchased and consumed by qualified electricity generator or person with an economic interest in coal.
Virginia Port Volume Increase Tax Credit *(2011)*	Promote use of state port facilities.	Tax credit for qualified agricultural, manufacturing, or mining entities that use Virginia port facilities and increase cargo volume by at least 5%. Credit is $50 per 20-foot equivalent unit.
Worker Retraining Tax Credit *(1999)* *(expired January 1, 2019)*	Encourage worker retraining to improve productivity and employment retention.	Tax credit for training costs of providing eligible worker retraining for qualified employees. The retraining must occur with a pre-designated program such as a noncredit course or apprenticeship. Tax credit is up to 30% of qualified training costs.

Program	Purpose	Description
Worker Training Tax Credit (replaces Worker Retraining Tax Credit) *(2019)*	Encourage worker training to improve productivity and employment retention.	Tax credit equal to 35 percent of the expenses incurred for eligible worker training up to $500 per qualified employee or $1,000 for training related to each non-highly compensated worker. Manufacturing businesses that currently qualify for the Worker Retraining Tax Credit for conducting orientation, instruction, and training in Virginia related to its manufacturing activities are also eligible. The annual aggregate credit cap is $1 million.

NOTE: The Worker Training Tax Credit replaced the Worker Retraining Tax Credit, and they are counted as one credit for purposes of this review.

Sales and use tax exemptions

Twenty sales and use tax exemptions reduce taxes for eligible firms that purchase or lease selected tangible personal property. Sales and use tax exemptions are generally realized at the point of sale when eligible items are purchased. Eligible firms must complete Department of Taxation forms (Commonwealth of Virginia Sales and Use Tax Certificate of Exemption) and present them to merchants at time of sale. Two exemptions require additional authorization before use. The data center exemption statutorily requires qualifying firms to meet minimum employment, capital investment, and wage requirements and enter into a memorandum of understanding with VEDP. The MOU requires data centers to provide annual reports to VEDP to demonstrate the actual capital investment and job creation that was made. Companies using the pollution control equipment and facilities exemption must first obtain certification from a state monitoring agency (i.e., Department of Environmental Quality, Department of Energy) before applying for the exemption. For these exemptions, the certificate may not have been issued at the time of eligible purchases, but the business can request a refund once the certificate is obtained.

TABLE C-3
Twenty sales and use tax exemptions reduce taxes at point of sale

Exemption	Purpose	Description
Airline Common Carriers Exemption *(1966)*	Encourage commercial airline service to and from Virginia airports.	Tax exemption for tangible personal property sold or leased to an airline operating in intrastate, interstate, or foreign commerce as a common carrier. The airline must provide scheduled air service on a continuing basis to one or more Virginia airports at least one day per week.
Aircraft Parts, Engines, and Supplies Exemption *(2018)*	Encourage growth of aviation sector, including unscheduled common carriers, private planes, and unmanned aviation systems.	Tax exemption for parts, engines, and supplies used for maintaining, repairing, or reconditioning aircraft.

Exemption	Purpose	Description
Certain Printed Materials for Out-of-State Distribution Exemption *(1976)*	Encourage out-of-state business purchases of printing materials from state firms.	Tax exemption for catalogs, letters, brochures, reports, and similar printed materials, and paper furnished to a printer for fabrication into such printed materials, when stored for 12 months or less in Virginia and distributed outside the state.
Controlled Environment Agriculture Exemption *(2023)*	Promote growth of indoor, closed, controlled-environment commercial agricultural facilities including indoor vertical farming and greenhouses.	Tax exemption for Controlled Environment Agriculture (CEA) enterprises. Exemption applies to items needed to create, support, and maintain the necessary growing environment for plants, including internal, external, and structural components.
Contractor Temporary Storage Exemption *(1989)*	Promote competitiveness of state construction material supply firms.	Tax exemption for personal property purchased by a contractor for use solely in another state or in a foreign country and temporarily stored in Virginia pending shipment, if such property could be similarly purchased free from sales tax in such other state or foreign country.
Data Centers Exemption *(2010)*	Promote the establishment of large-scale data centers.	Tax exemption for Virginia data centers and tenants meeting certain minimal investment, employment, and wage-level criteria. Exemption is for processing, storage, retrieval, and communication equipment.
Electrostatic Duplicators Exemption *(1986)*	Promote small-scale printing businesses by providing exemption comparable to industrial printers.	Tax exemption for high-speed electrostatic duplicators or any other duplicators having a printing capacity of 4,000 impressions or more per hour purchased or leased by persons engaged primarily in the printing or photocopying of products for sale or resale.
Film, Television, & Audio Production Inputs Exemption *(1995)*	Promote motion picture production and sound recording industries.	Tax exemption for audiovisual works acquired for licensing, distributing, broadcasting, commercially exhibiting or reproducing or production services or fabrication connected with such production. The exemption applies to purchases and leasing tangible personal property.

Exemption	**Purpose**	**Description**
Media Provider Equipment Exemption *(1966)*	Promote radio and television broadcasting, cable television, and broadband media industries.	Tax exemption for broadcasting equipment, parts and accessories used by radio, television, cable, and broadband media companies. The exemption also applies to amplification, transmission, and distribution equipment used by cable television systems or other video systems.
Out-of-state Nuclear Facility Repair Exemption *(2000)*	Promote nuclear maintenance and repair industry by exempting purchases of supplies used for the purpose of providing services to out-of-state buyers.	Tax exemption for tangible personal property purchased for use or consumption in the performance of maintenance and repair services at Nuclear Regulatory Commission-licensed nuclear power plants located outside the state.
Pollution Control Equipment & Facilities Exemption *(1972)*	Encourage business adoption of pollution control equipment and technologies by reducing capital costs.	Tax exemption for pollution control equipment and facilities used for air and water pollution abatement certified by a state certifying authority.
Railroad Common Carriers Exemption *(1978)*	Promote maintenance and expansion of state railroads.	Tax exemption for tangible personal property sold or leased to a public service corporation that is a common carrier of property or passengers by railway.
Railroad Rolling Stock Exemption *(2007)*	Encourage capital investment in railroad rolling stock.	Tax exemption for railroad rolling stock when sold or leased by the manufacturer.
Research & Development Exemption *(1966)*	Encourage research and development of new and improved products and processes.	Tax exemption for tangible personal property purchased for use or consumption directly and exclusively in basic research or research and development in the experimental or laboratory sense.
Semiconductor Manufacturers Exemption *(2006)*	Promote semiconductor manufacturing industry.	Tax exemption for semiconductor cleanrooms or equipment, fuel, and supplies used when designing, developing, manufacturing, or testing semiconductor products or equipment.
Semiconductor Wafers Exemption *(2006)*	Promote semiconductor manufacturing industry.	Tax exemption for semiconductor wafers for use or consumption by a semiconductor manufacturer.
Ships and Vessels Exemption *(1966)*	Promote maritime shipping industries, including commercial ship building, repairing, supplying, and dredging.	Tax exemption for ships or vessels used or to be used exclusively or principally in interstate or foreign commerce. The tax exemption also applies to fuel and supplies for use or consumption aboard ships or vessels plying the high seas, either in intercoastal trade or in foreign commerce.

Exemption	Purpose	Description
Taxi Parts & Radios Exemption *(1984)*	Encourage commercial taxi operations and prevent their further decline.	Tax exemption for parts, tires, meters and dispatch radios sold or leased to taxicab operators for use in their services.
Uniform Rental & Laundry Businesses Exemption *(1980)*	Promote the commercial uniform rental industry by providing a tax exemption similar to other industrial manufacturers and processors.	Tax exemption for machinery and tools, supplies and materials used directly in maintaining and preparing textile products for rental or lease by an industrial processor engaged in commercial leasing or renting of laundered textile products.
Virginia Spaceport Users Exemption *(1997)*	Promote spaceport operations at facilities owned, leased, or operated by the state and the commercial space industry.	Tax exemption for space facilities and hardware, including inputs, components and supplies such as special fuels, machinery and equipment, and other goods and services for activities undertaken at a Virginia Commercial Space Flight Authority facility.

Other incentive programs

Thirteen other incentive programs included in this report fall into a "miscellaneous" category. These incentives include tax preferences such as corporate income tax apportionment methods and income tax subtractions as well as gap and loan financing programs that are difficult to classify elsewhere. The latter programs are administered by the Virginia Small Business Financing Authority and the Virginia Innovation Partnership Corporation and are designed to provide alternative funding sources for business startups and established small businesses that face financing constraints. Based on current estimates, the manufacturing single sales apportionment factor is the largest of these miscellaneous incentives. The single sales formula allows manufacturers to calculate their taxable income in Virginia based solely on the proportion of total sales that are in Virginia rather than a weighted average of sales, property, and payroll. This creates tax savings for multistate firms that have sizeable operations within the state but ship substantial amounts of products outside the state.

TABLE C-4
Thirteen other tax incentives, loan, and gap financing programs target economic development

Program	Purpose	Description
Data Center Single Sales Factor Apportionment *(2017)*	Promote the establishment and growth of data centers.	This tax rule allows eligible multistate corporations that make a capital investment of at least $150 million in a data center to use the single sales factor method of apportionment to reduce tax liability. Companies that choose to use this apportionment method must enter into an MOU with VEDP.

Program	Purpose	Description
Economic Development Loan Fund *(2007)*	Promote small business job creation and retention by providing gap financing.	Loans are targeted to small businesses in technology, tourism, manufacturing, and services that generate a majority of sales outside the state. Project must create permanent full-time jobs that pay minimum of $10 per hour. Maximum loan available is 40% or $1 million, whichever is less.
Loan Guaranty Program *(1985)*	Promote small business capital investment.	This program helps small businesses obtain loans by reducing bank credit risk. The maximum guarantee is the lessor of $750,000 or 75% of the loan amount. The program does not have job creation requirements but considers job creation in financing decisions.
State Cash Collateral Program *(2013)*	Promote small business capital investment.	This program helps small businesses obtain loans by reducing bank credit risk. The maximum guarantee is the lessor of $500,000 or 40% of the loan amount. The program does not have job creation requirements but considers job creation in financing decisions.
Manufacturing Single Sales Factor Apportionment *(2009)*	Promote manufacturing employment growth.	This tax rule allows manufacturing companies to choose single sales factor apportionment to reduce tax liability. Companies must certify that full-time employee average wages are above the state industry average and that employment is at least 90 percent of base year employment for three years.
New Company Incentive Program *(2018)*	Promote economic development in 51 qualified economically distressed counties.	Program offers modified corporate income tax apportionment factor and consideration for grant from Commonwealth's Development Opportunity Fund for new traded sector companies creating minimum of 10 new jobs paying at least 1.5 times the Virginia minimum wage and $5 million in capital investment that locate in eligible counties.

Program	Purpose	Description
Qualified Business Long-Term Capital Gain Subtraction *(2010)*	Promote high technology business investment.	Tax subtraction for income attributable to an investment in certain high technology businesses that is taxed as long-term capital gain. Investment must be made between April 1, 2010, and June 30, 2020. Qualified businesses must have gross revenues of less than $3 million and have received less than $3 million in equity or debt investments.
SWaM Loan Fund *(2012)*	Promote small, women-owned, and minority-owned business capital investment and expansion.	This fund provides a maximum of $10,000 to eligible businesses, or $25,000 if business received counseling from a Small Business Development center. Loans are allocated on credit score basis. Loans may be used for working capital, financing accounts receivable and inventory, and other purposes.
Tourism Development Financing Program *(2012)*	Promote tourism and economic development in Virginia.	The program provides gap financing for tourism development projects otherwise unable to access capital. The locality must apply, demonstrate a tourism deficiency, and provide tax incentives or regulatory flexibility for a designated tourism zone where the project occurs.
Venture Capital Account Subtraction *(2018)*	Promote investment in Virginia early-stage companies.	Income tax subtraction or certain income attributable to an investment in a Virginia venture capital account, defined as an investment fund that (i) invests at least 50 percent of its funds invested during the year in which the taxpayer claims a subtraction, or any of the previous five years, in qualified portfolio companies and (ii) employs at least one investor who has either at least four years of professional experience in venture capital investment or substantially equivalent experience. Investment must be made between January 1, 2018, and December 31, 2023.

Program	Purpose	Description
Virginia Venture Partners Gap Funds *(2005)*	Promote expansion of early-stage high-science and technology companies in targeted fields with rapid growth potential.	Seed-stage equity investments in Virginia-based technology, green technology, and life science companies with a high growth potential. The Virginia Innovation Partnership Corporation (VIPC) holds an ownership position in the company while the company grows operations and value.
Zero G Zero Tax Act (Part I) Subtraction *(2009)*	Encourage the location and expansion of companies at a Virginia airport or spaceport involved in flying or training humans in suborbital flight.	Tax deduction for gains realized from the sale of launch services to space flight participants or launch services intended to provide individuals the training or experience of a launch, without performing an actual launch.
Zero G Zero Tax Act (Part II) Subtraction *(2009)*	Encourage the location and expansion of companies at a Virginia spaceport involved in resupplying the space station.	Tax deduction for gains realized from resupply services contracts for delivering payload with the Commercial Orbital Transportation Services division of the National Aeronautics and Space Administration or other space flight entity.

Appendix D: Spending or tax expenditures by incentive

TABLE D-1
State spending on incentive grant payments ($ millions)

Incentive	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Total
Advanced Production Grant Program and Fund (Morgan Olson)	--	--	--	--	--	--	--	0.5	0.0	0.0	$0.5M
Advanced Shipbuilding Training Facility Grant Program (Huntington Ingalls)	5.00	8.03	7.59	7.16	--	--	--	--	--	--	27.8
Advanced Shipbuilding Production Facility Grant Program (Huntington Ingalls)	--	--	--	--	--	6.0	0.0	8.0	8.0	8.0	30.0
Aerospace Engine Manufacturing Performance Grant Program (Rolls Royce)	0.0	0.0	0.0	0.0	0.0	0.0	11.0	0.0	--	--	11.0
Tobacco Commission Agribusiness Grant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Agriculture and Forestry Industries Development Grant	0.4	0.6	0.8	1.6	0.8	1.3	0.6	1.0	3.0	1.3	11.2
Virginia Business Ready Sites Program	--	--	--	0.9	0.0	0.4	0.0	0.0	5.7	89.3	96.3
Commonwealth's Development Opportunity Fund	9.4	15.0	14.4	22.2	7.3	10.1	12.5	16.5	21.4	19.0	147.8
Commonwealth Research Commercialization Fund	0.9	1.0	1.5	1.3	0.9	1.3	1.9	3.3	2.8	6.5	21.4
Economic Development Access Program	1.4	0.7	0.7	3.6	2.4	1.5	1.3	2.0	0.7	0.9	15.1
GO Virginia (site development projects)	--	--	--	0.0	0.4	2.8	0.0	7.6	2.2	5.7	18.6
Governor's Motion Picture Opportunity Fund	1.7	2.9	12.1	0.8	5.8	1.4	3.0	5.5	7.9	9.3	50.4
Governor's New Airline Service Incentive Fund	--	--	--	--	--	--	--	--	0.25	0.04	0.3
Job Creation Grant (Enterprise Zone)	2.9	3.1	2.7	1.8	2.2	2.7	2.9	1.9	2.5	1.8	24.5
Major Eligible Employer Grant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Major Headquarters Workforce Grant Fund (Amazon HQ2)	--	--	--	--	--	--	0.0	0.0	0.0	0.0	0.0
Tobacco Commission Megasite Grant	12.8	6.2	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	23.7
New Company Incentive Program (grant portion)	--	--	--	--	0.0	0.0	0.0	0.6	0.7	0.0	1.3
Nitrile Glove Manufacturing Training Program (Blue Star)	--	--	--	--	--	--	--	--	0.0	0.0	0.0

Incentive	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Total
Offshore Wind Component Grant Program (Siemens Gamesa)	--	--	--	--	--	--	--	--	0.0	0.0	0.0
Pharmaceutical Manufacturing Grant Program (Merck)	--	--	--	--	--	--	--	0.0	2.5	2.5	5.0
Port of Virginia Economic and Infrastructure Grant	0.5		0.3	2.2	0.5	0.1	1.3	0.7	1.0	0.5	7.0
Precision Plastic Manufacturing Grant Program (LEGO Group)	--	--	--	--	--	--	--	--	0.0	0.0	0.0
Property Analytics Firm Infrastructure Grant Fund (CoStar Group)	--	--	--	--	--	--	--	--	--	--	0.0
Rail Industrial Access Program	2.1	0.3	0.9	0.0	1.3	0.7	0.6	1.3	2.3	3.0	12.5
Real Property Improvement Grant (Enterprise Zone)	11.3	9.1	9.3	10.9	10.7	10.8	11.6	12.6	11.1	9.4	106.5
Semiconductor Custom Grant (Micron 2004)	5.4	5.4	3.8	--	--	--	--	--	--	--	14.6
Semiconductor Manufacturing Grant Fund (Micron 2019)	--	--	--	--	--	--	50.0	20.0	0.0	0.0	70.0
Shipping and Logistics Headquarters Grant Program (CMA CGM)	--	--	--	--	--	--	--	--	0.0	0.0	0.0
Small Business Investment Grant Fund	0.0	0.1	0.1	1.2	0.5	0.8	0.8	0.8	0.8	0.8	6.0
Small Business Jobs Grant Fund Program	1.2	0.3	0.0	0.3	0.0	0.0	--	--	--	--	1.8
Southside Economic Development Grants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Southwest Economic Development Grants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Flight Operations Facilitation Program (Rocket Lab)	--	--	--	--	--	--	--	--	--	--	--
Special Workforce Grant Fund (Amazon Web Services)	--	--	--	--	--	--	0.00	0.0	10.5	0.0	10.5
SRI custom grant	--	--	--	--	--	--	--	--	--	--	0.0
Technology Development Grant Fund (Microsoft)	--	--	--	--	--	--	--	0.0	0.0	5.6	5.6
Tobacco Region Opportunity Fund	27.0	5.5	9.1	2.9	3.2	3.5	3.4	1.1	1.8	0.9	58.4
Transportation Partnership Opportunity Fund	0.7	6.0	0.0	0.0	0.0	11.2	0.0	1.0	0.0	3.5	22.5
Truck Manufacturing Grant Fund (Volvo)	--	--	--	--	--	--	--	2.0	0.0	0.0	2.0
Virginia Economic Development Incentive Grant	0.0	2.0	0.0	13.3	0.0	1.5	0.0	3.5	2.0	9.0	31.3
Virginia Investment Performance Grant	0.8	5.5	5.4	1.6	1.0	3.4	4.3	8.4	10.7	0.0	40.9
Virginia Jobs Investment Program	7.7	5.9	9.1	8.4	4.6	2.2	2.8	4.4	3.2	1.2	49.4
VALET Program	0.3	0.3	0.3	0.6	0.7	0.5	0.6	0.5	0.8	0.7	5.3

Incentive	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Total
Virginia Talent Accelerator Program	--	--	--	--	--	--	1.3	2.7	10.8	1.3	16.0
Virginia Trade Show Assistance Program	--	--	--	0.6	0.5	0.6	0.7	0.4	0.5	0.6	3.9
Total	**91.7**	**77.8**	**78.1**	**81.1**	**47.4**	**62.8**	**110.5**	**106.1**	**113.0**	**179.7**	**$949.4**

SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Adjusted for canceled projects, recaptures, and award reductions. Not adjusted for inflation. Numbers may not sum because of rounding. Spending on the New Company Incentive Program is included here because the incentive payments were in the form of grants.
-- indicates program had not been adopted or was no longer in effect.

TABLE D-2
Tax savings to businesses because of tax credits ($ millions)

Incentive	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Total
Barge and Rail Usage Tax Credit	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.4	$1.2M
Biodiesel and Green Diesel Fuels Producers Tax Credit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coalfield Employment Enhancement Tax Credit	21.5	28.4	23.4	18.9	15.2	16.1	7.9	9.3	0.3	8.9	149.9
Farm Wineries and Vineyards Tax Credit	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.2	1.7
Green Job Creation Tax Credit	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
International Trade Facility Tax Credit	0.2	0.1	0.3	0.3	0.3	0.9	0.1	0.1	0.0	0.1	2.4
Major Business Facility Job Tax Credit	1.3	4.1	0.8	6.8	1.8	1.3	6.3	2.2	0.8	4.0	29.5
Major Research and Development Tax Credit	--	--	--	--	6.1	4.8	17.2	12.0	9.9	21.3	71.3
Motion Picture Production Tax Credit	3.0	7.2	5.5	6.6	6.1	0.0	7.2	5.8	4.5	6.5	52.3
Qualified Equity and Subordinated Debt Investment Tax Credit	2.4	2.1	2.4	2.2	2.8	3.2	3.9	4.2	3.2	5.0	31.2
Recyclable Materials Processing Equipment Tax Credit	1.2	0.6	2.1	1.7	1.4	1.5	2.2	2.2	1.3	1.8	16.1
Research and Development Expenses Tax Credit	3.4	4.2	4.7	4.2	4.2	4.1	5.2	2.6	2.7	2.4	37.7
Telework Expenses Tax Credit	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	--	0.4
Virginia Coal Employment and Production Incentive Tax Credit	6.7	8.9	3.1	3.7	6.8	0.5	1.3	0.6	0.1	0.0	31.7
Virginia Port Volume Increase Tax Credit	0.4	0.7	0.9	2.2	1.8	1.8	1.4	1.8	0.3	2.2	13.5

Incentive	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Total
Worker Retraining Tax Credit	0.2	0.2	0.2	0.2	0.3	0.0	0.2	0.0	0.0	--	1.3
Worker Training Tax Credit	--	--	--	--	--	--	0.0	0.1	0.0	0.1	0.2
Total	**40.3**	**56.9**	**44.1**	**47.0**	**47.1**	**34.5**	**53.0**	**41.1**	**23.6**	**52.9**	**$440.5**

SOURCE: Weldon Cooper Center analysis of Virginia Tax's Annual Reports for Fiscal Years 2014–2023.
NOTE: Credits were claimed for the Biodiesel and Green Diesel Fuels Producers Tax Credit, but amounts were very minimal. Not adjusted for inflation. Numbers may not sum because of rounding.
-- indicates no credits were claimed in that year because they had not been adopted yet.

TABLE D-3
Estimated tax savings to businesses on sales and use tax exemptions ($ millions)

Incentive	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Total
Airline Common Carriers Exemption	8.5	10.5	11.4	11.0	9.8	9.9	8.7	9.7	14.9	15.8	$110.0M
Aircraft Parts, Engines, and Supplies Exemption	0.0	0.0	0.0	0.0	0.0	5.5	5.6	5.7	5.8	6.0	28.5
Certain Printed Materials for Out-of-State Distribution Exemption	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.4	7.4	7.9	33.2
Contractor Temporary Storage Exemption	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.1
Data Center Exemption	**	**	**	**	**	**	**	613.5	411.5	685.2	1,710.2
Electrostatic Duplicators Exemption	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Film, Television, & Audio Production Inputs Exemption	0.7	0.8	0.9	1.0	2.2	3.8	4.2	4.0	4.3	4.6	26.6
Media Provider Equipment Exemption	4.4	4.5	4.5	4.6	4.7	4.8	4.9	5.0	5.3	5.7	48.3
Out-of-state Nuclear Facility Repair Exemption	0.5	0.5	0.6	0.6	0.6	0.7	0.6	0.6	0.7	0.7	6.2
Pollution Control Equipment & Facilities Exemption	2.3	4.2	4.1	3.2	3.2	3.3	3.4	3.4	3.7	3.9	34.7
Railroad Common Carriers Exemption	24.6	25.7	24.2	17.7	17.5	20.3	16.4	14.9	18.6	19.7	199.6
Railroad Rolling Stock Exemption	2.1	2.1	2.3	2.4	2.4	2.5	2.6	2.6	2.8	2.9	24.7
Research & Development Exemption	3.7	3.5	2.9	3.4	5.1	5.4	6.4	6.6	7.0	7.0	51.1
Semiconductor Manufacturers Exemption	1.2	0.8	0.6	0.6	0.5	0.4	0.5	0.5	0.7	0.7	6.5
Semiconductor Wafers Exemption	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.0

Incentive	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Total
Ships and Vessels Exemption	6.2	6.3	6.3	6.5	6.4	7.0	7.1	7.3	7.8	8.3	69.4
Taxi Parts & Radios Exemption	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	3.5
Uniform Rental & Laundry Businesses Exemption	0.8	0.9	1.0	1.0	1.0	0.9	0.8	0.6	0.6	0.6	8.2
Virginia Spaceport Users Exemption	1.2	0.9	0.0	0.5	1.0	1.0	1.0	1.6	1.1	0.6	8.8
Total	**59.1**	**63.6**	**61.4**	**55.0**	**57.2**	**68.3**	**65.0**	**678.9**	**492.8**	**770.4**	**$2,371.7**

SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Exempted amounts exclude the 1 percent sales tax for localities and, in most cases, the additional amounts collected in localities with higher rates, such as Northern Virginia and the Historic Triangle. Numbers may not sum because of rounding.
-- indicates exemption had not been adopted yet.

TABLE D-4
State spending on other incentives ($ millions)

Incentive	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Total
Data Center Single Sales Factor Apportionment	--	--	--	--	--	0.1	0.1	0.1	0.2	0.2	$0.8
Economic Development Loan Fund	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Loan Guaranty Program	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Manufacturing single sales factor apportionment	1.9	20.9	22.3	22.7	23.3	23.7	24.1	24.7	26.4	28.1	218.1
New Company Incentive Program (Corporate Apportionment Portion)	--	--	--	--	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Qualified Business Long-Term Capital Gain Subtraction	1.7	3.0	1.5	1.9	1.2	0.8	0.9	2.6	2.8	3.0	19.2
State Cash Collateral Program	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SWaM Loan Fund	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Tobacco Region Opportunity Fund (Loan Portion)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Tourism Development Financing Program	0.0	8.4	0.0	0.9	0.6	1.8	0.0	0.0	2.0	73.8	87.6
Venture Capital Account Subtraction	--	--	--	--	0.0	0.0	0.0	0.0	0.0	**	0.0
Virginia Venture Partners GAP Funds	1.3	0.6	0.6	0.8	0.8	1.0	1.2	1.3	2.7	2.1	12.5

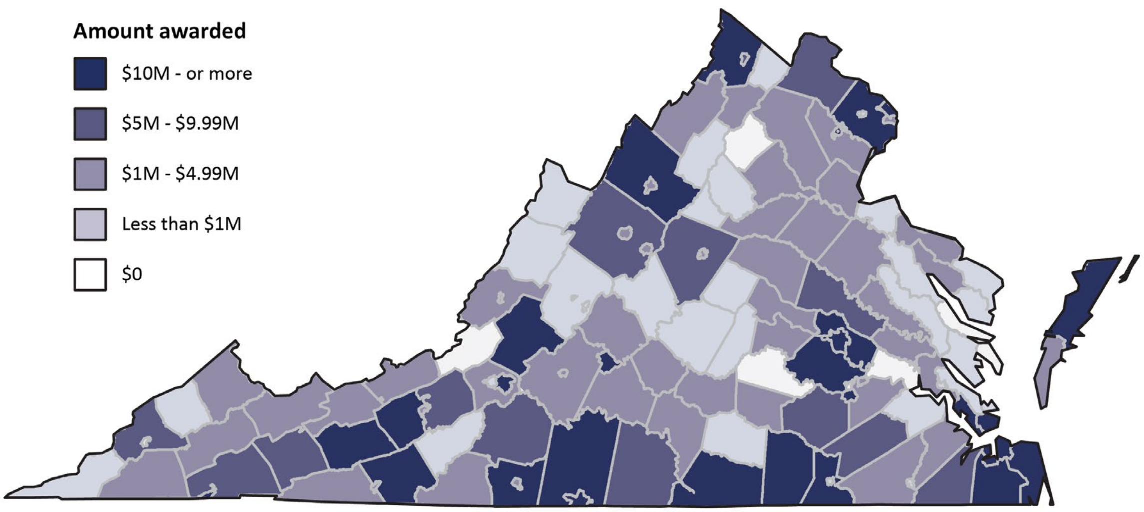
Incentive	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Total
Zero G Zero Tax Act (Part I) Subtraction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Zero G Zero Tax Act (Part II) Subtraction	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.7
Total	**5.0**	**33.0**	**24.4**	**26.4**	**25.9**	**27.7**	**26.5**	**28.8**	**34.2**	**107.2**	**$339.1**

SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Not adjusted for inflation. Virginia Small Business Financing Authority loan program amounts listed are legislative appropriations since these revolving loan program costs are not equal to the loan award amount.
-- indicates incentive had not been adopted yet.
** indicates data was not provided for the program.

Appendix E: Regional distribution of grant awards

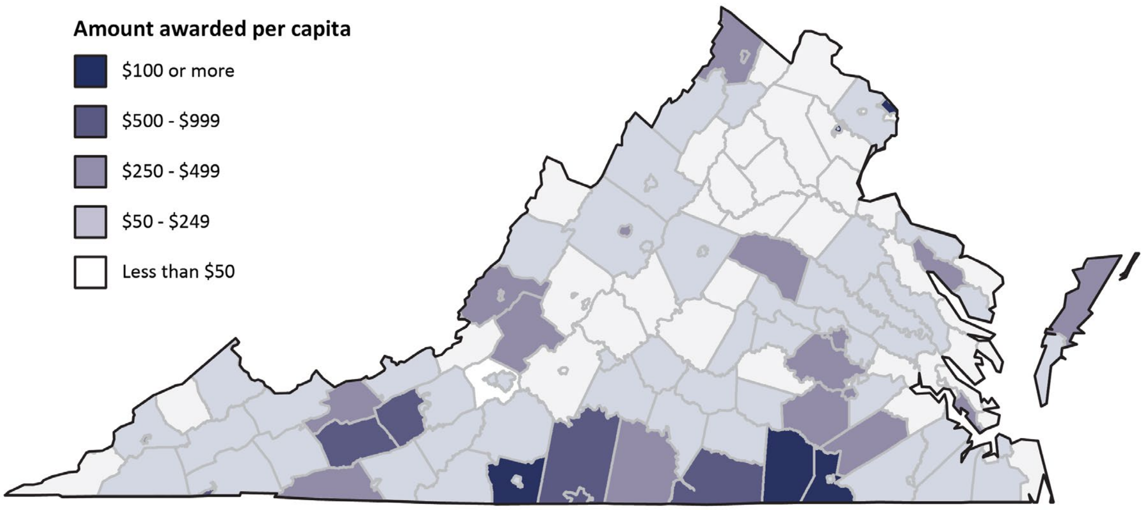
The largest amount of grant awards went to businesses in highly populated localities such as Arlington County, Newport News City, Fairfax County, and Richmond City and to rural localities in the tobacco region and on the Eastern Shore (Figure E-1). Adjusted for population size, awards are concentrated in urbanized localities in Northern Virginia and in rural southern and Eastern Shore localities (Figure E-2).

FIGURE E-1
Awards are concentrated in several highly populated areas and the southern region (FY14–FY23)



SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Localities were not assigned to 10 Governor's Motion Picture Opportunity Fund (GMPOF) projects, eight Go Virginia site development projects, one Virginia Business Ready Sites Program project, and one Governor's New Airline Incentive Fund project because the grants benefited more than one locality.

FIGURE E-2
Awards are concentrated in urban areas in Northern Virginia and in rural southern and eastern shore localities, adjusted for population size (FY14–FY23)

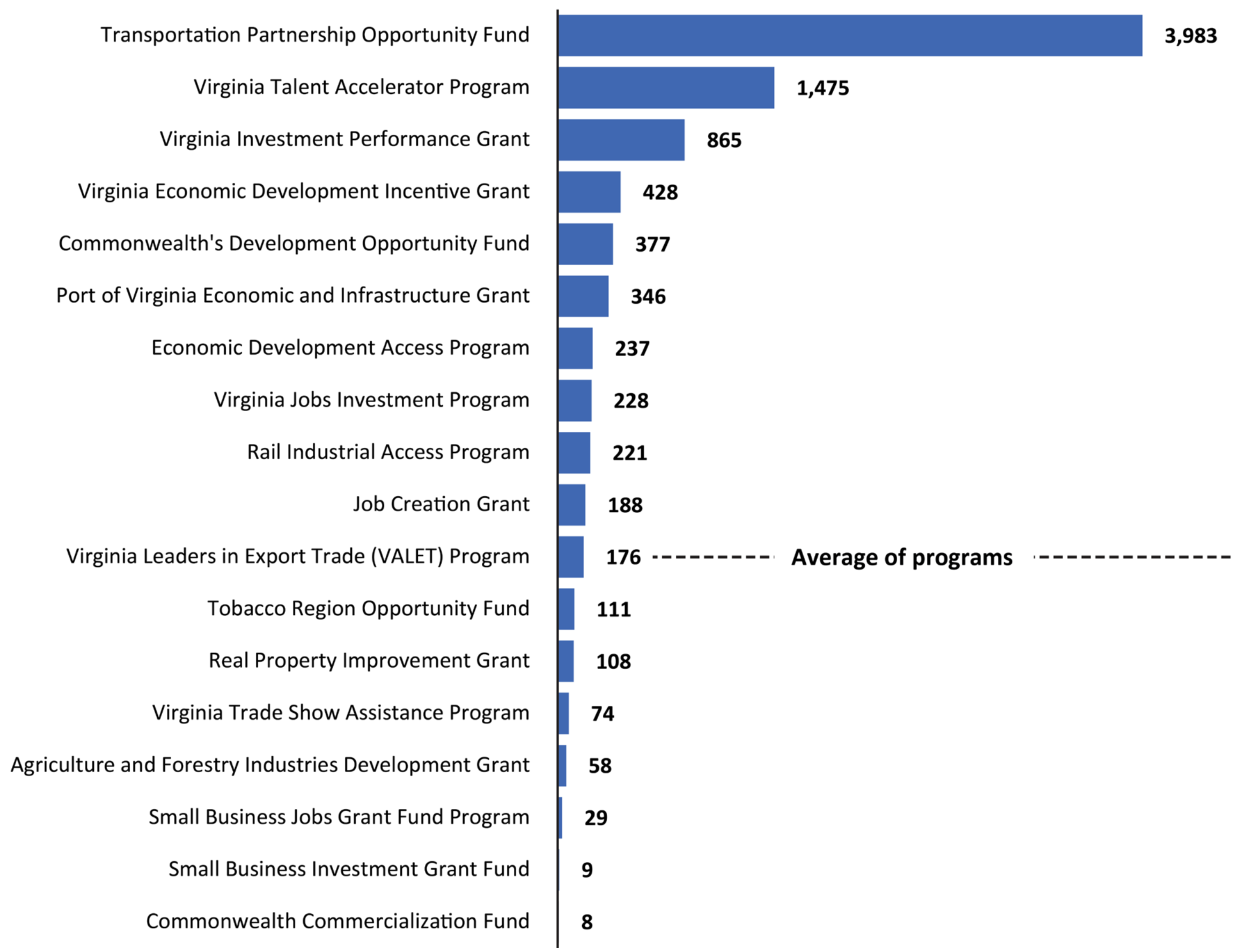


SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Localities were not assigned to 10 Governor's Motion Picture Opportunity Fund (GMPOF) projects, eight Go Virginia site development projects, one Virginia Business Ready Sites Program project, and one Governor's New Airline Incentive Fund project because the grants benefited more than one locality.

Appendix F: Average employment size of grant recipients by program

The average establishment size of a grant recipient was 175 employees across all programs. However, the average size varied widely by program (Figure F-1). The largest average sizes were for the Transportation Partnership Opportunity Fund (3,983 employees), Virginia Talent Accelerator Program (1,475), the Virginia Investment Performance Grant (865), and the Virginia Economic Development Incentive Grant (428). The smallest average employee sizes were for finance programs for startups—the Small Business Investment Grant Fund (9 employees) and Commonwealth Research Commercialization Fund (8).

Figure F-1
Average employment size of business location at time of award varies widely by program (FY14– FY23)



SOURCE: Weldon Cooper Center analysis of economic development incentive grants and VEC data.
NOTE: Employment records were matched with 2,930 of the 5,021 awards (58%) and $1.299B of $2.010B in total awards (65%).

Appendix G: Project-specific goals used by grant programs

Some programs award grants or make award commitments before projects begin. These programs require projects to achieve specific goals to obtain or keep the full award promised. Job creation, capital investment, and average wages paid are the most common goals, but several programs establish other goals that are more aligned with the purpose of the program (Table G-1).

TABLE G-1:
Job creation, average wages, and capital investment are most common performance measures

Grant program	Job creation	Wages	Capital expenditures	Other
Advanced Production Grant (Morgan Olson)	X	X	X	
Advanced Shipbuilding Training Facility Grant (Newport News)	X	X	X	Number of apprentices, training expenses
Advanced Shipbuilding Production Facility Grant (Newport News)	X		X	
Aerospace Engine Manufacturing Performance Grant (Rolls Royce)	X	X	X	
Agriculture and Forestry Industries Development Grant	X	X	X	Value of Virginia agricultural products
Commonwealth's Development Opportunity Fund	X	X	X	
Commonwealth Research Commercialization Fund				Capital attracted from other sources
Economic Development Access Program			X	
Virginia Venture Partners GAP Funds				Capital attracted from other sources
Go Virginia (site development)	X		X	
Governor's Motion Picture Opportunity Fund	X			Total Virginia spending, Value of advertising
Governor's New Airline Service Incentive Fund				Frequency of air service
Job Creation Grant	X			
Major Eligible Employer Grant	X	X	X	
Major Headquarters Workforce Grant (Amazon HQ2)	X	X	X	
Nitrile Glove Manufacturing Training Program (Blue Star)	X	X	X	
Offshore Wind Component Grant (Siemens Gamesa)	X	X	X	
Pharmaceutical Manufacturing Grant (Merck)	X	X	X	

Grant program	Job creation	Wages	Capital expenditures	Other
Port of Virginia Economic and Infrastructure Grant	X			Port user
Precision Plastic Manufacturing Grant (LEGO Group)	X	X	X	
Rail Industrial Access Program			X	Carloads
Real Property Improvement Grant			X	
Semiconductor Custom Grant (Micron)	X		X	
Semiconductor Manufacturing Grant (Micron)	X	X	X	Establishment of R&D facility
Shipping and Logistics Headquarters Grant (CMA CGM)	X	X	X	
Small Business Investment Grant Fund	X			Private equity investment
Small Business Jobs Grant Fund Program	X	X	X	
Space Flight Operations Facilitation Program (RocketLab)	X	X	X	
Special Workforce Grant (Amazon Web Services)	X	X	X	
SRI custom grant	X	X		
Technology Development Grant (Microsoft)	X	X	X	
Tobacco Commission Megasite Grant				
Tobacco Region Opportunity Fund	X	X	X	
Transportation Partnership Opportunity Fund	X		X	
Truck Manufacturing Grant (Volvo)	X	X	X	
Virginia Business Ready Sites Program				
Virginia Economic Development Incentive Grant	X	X	X	
Virginia Investment Performance Grant	X	X	X	
Virginia Jobs Investment Program	X	X	X	Job retraining
Virginia Leaders in Export Trade (VALET) Program				International sales
Virginia Talent Accelerator Program		X		Workers receiving recruitment and training services
Virginia Trade Show Assistance Program				International sales

SOURCE: Weldon Cooper Center analysis of agency documents.

Appendix H: Economic and revenue impact analysis

The economic impact analysis for incentives involved modeling (1) the additional economic activity that occurred because of the incentive and (2) the simultaneous increase in taxes that was used to "pay" for the incentive. Increasing taxes has the general effect of decreasing employment and other economic activity. Thus, increasing taxes to pay for the incentive reduced the total effect of the incentive on the economy.

Economic impact modeling

Weldon Cooper Center staff conducted economic impact analyses of Virginia economic incentives using REMI PI+ (Policy Insight Plus) software. REMI PI+ is a dynamic, multi-sector regional economic simulation model used for economic forecasting and measuring the impact of public policy changes on local economies. The model combines different contemporary regional economic modeling methods such as input-output analysis, econometric forecasting, and computable general equilibrium to characterize the mechanics and path of a regional economy. The model has been extensively peer-reviewed and is widely used by state agencies elsewhere in the nation to model economic and tax revenue impacts of economic development incentive programs, including economic development incentives. The model used for this analysis was customized for Virginia and includes 70 industry sectors. Outcome variables examined include total employment, state GDP, and personal income. In addition, a state tax revenue impact analysis was conducted based on a methodology described further below.

The modeling of each program was conducted differently depending on the type of economic stimulus provided by the program and available information on program outcomes (Table H-1). The most comprehensive information on establishment-level performance outcomes was available for grant programs, which typically track employment, capital investment, and other performance metrics related to the specific economic aims of the programs. Information on employment benchmarks was also available for four Small Business Financing Authority loan programs, which a previous JLARC study corroborated are in aggregate indicative of ultimate employment creation. (See Workforce and Small Business Incentives, JLARC 2018.) Similar information was available for the data center exemption because users are required to enter into a Memorandum of Understanding with VEDP and report employment and capital investment goal attainment. However, it was not available for other sales and use tax exemptions and tax credits. Thus, those programs were generally modeled as decreasing either firm capital or production costs. Programs were modeled as decreasing firms' capital costs if the incentive reduced the costs of purchasing tangible personal property. They were modeled as decreasing firm production costs if the costs of labor as well as equipment and supplies were reduced by the incentive.

Table H-1
REMI Policy Variables

Name of incentives	REMI model policy variables	Modeling description
Agriculture and Forestry Industries Development Grant Commonwealth's Development Opportunity Fund Governor's Motion Picture Opportunity Fund Job Creation Grant Major Eligible Employer Grant Port of Virginia Economic and Infrastructure Grant Small Business Investment Grant Fund Small Business Jobs Grant Fund Program Tobacco Region Opportunity Fund Virginia Economic Development Incentive Grant Virginia Investment Performance Grant Virginia Jobs Investment Program--Job Creation Economic Development Loan Fund Loan Guaranty Program State Cash Collateral Program SWaM Loan Fund Special Workforce Grant Fund (Amazon Web Services)	Labor and Capital Demand>-Employment>-Firm >-Industry	Model economic impact based on 10 percent "but for" assumption for grant programs and 31 percent for loan programs based on documented or projected employment increase. Assign REMI industry based on grant project industry identifiers.
Governor's Motion Picture Opportunity Fund	Labor and Capital Demand>-Employment>Industry >-Industry	Model economic impact based on 95 percent "but for" assumption based on documented employment increase.
Economic Development Access Program Rail Industrial Access Program Real Property Improvement Grant Megasite Grants (Tobacco Commission) Transportation Partnership Opportunity Fund	Output and Demand>-Investment Spending>-Nonresidential	Model economic impact estimate based on 10 percent "but for" assumption based on documented investment. Assign REMI industry based on grant project industry identifiers.
Farm Wineries and Vineyards Tax Credit Recyclable Materials Processing Equipment Tax Credit Airline Common Carriers Exemption Aircraft Parts, Engines, and Supplies Exemption	Compensation and Prices->Production Costs->Capital Costs	Model economic impact based on reduced capital cost equal to tax credit or estimated exemption tax revenue effect. Assign REMI industry based on

Name of incentives	REMI model policy variables	Modeling description
Certain Printed Materials for Out-of-State Distribution Exemption		industry(ies) affected based on program descriptions
Data Center Single Sales Factor Apportionment		
Electrostatic Duplicators Exemption		
Film, Television, & Audio Production Inputs Exemption		
Virginia Venture Partners GAP Funds		
Manufacturing Single Sales Factor Apportionment		
Media Provider Equipment Exemption		
Pollution Control Equipment & Facilities Exemption		
Qualified Equity and Subordinated Debt Investments Tax Credit		
Qualified Business Long-Term Capital Gain Subtraction		
Railroad Common Carriers Exemption		
Railroad Rolling Stock Exemption		
Research & Development Exemption		
Semiconductor Manufacturers Exemption		
Semiconductor Wafers Exemption		
Ships and Vessels Exemption		
Taxi Parts & Radios Exemption		
Uniform Rental & Laundry Businesses Exemption		
Virginia Spaceport Users Exemption		
Zero G Zero Tax Act (Part I and II)		
Barge and Rail Usage Tax Credit Biodiesel and Green Diesel Fuels Producers Tax Credit Green Job Creation Tax Credit International Trade Facility Tax Credit Major Business Facility Job Tax Credit Motion Picture Production Tax Credit Telework Expenses Tax Credit Virginia Coal Production and Employment Incentive Tax Credit Virginia Port Volume Increase Tax Credit Worker Retraining Tax Credit	Compensation and Prices->Production Costs->Production Costs	Model economic impact based on reduced production cost. Assign REMI industry based on industry(ies) affected based on program descriptions and corporate tax credit records matched with VEC employment records.

Name of incentives	**REMI model policy variables**	**Modeling description**
Data Centers Exemption	(1) Labor and Capital Demand>-Employment>-Firm >-Industry (Exogenous Production, Nullify Investment); (2) Output and Demand>-Industry Sales (Exogenous Production)>-Power and Communication Structures	Model economic impact based on 100 percent "but for" assumption. Employment assigned to industry.
Virginia Jobs Investment Program (VJIP)--Retraining	(1) Output and Demand>-Investment Spending>-Equipment, (2) Output and Demand>-Real Disposable Income>-Compensation (Adjust compensation by amount of training-related wage increase). (3) Output and Demand>-Output (Adjust by ratio of output to training-related wage increase)	Model economic impact based on 1.5 percent wage and salary increase with associated output increase. Also, capital investment based on 10 percent "but for" factor. Assign to industries based on grant project records.
Tobacco Commission Megasite Program Virginia Business Ready Sites Program	Output and Demand>-Industry Sales (Exogenous Production)>-Construction	Model economic impact of state grant outlay and local match as output for the construction industry.
Virginia Trade Show Assistance Program Contractor Temporary Storage Exemption Out-of-state Nuclear Facility Repair Exemption	Output and Demand>-Industry Sales (Exogenous Production)>	Model economic impact as increased sales of (a) advertising, public relations and related services, (b) warehousing and storage, and (c) construction.
VALET	Output and Demand>-Industry Sales (International Exports)	Model economic impact as increased international sales for industry based on grant project records. "But for" effect is estimated as 11.78 percent of firm reported sales increase from firm entry and exit surveys based on Weldon Cooper Center firm economic incentive survey. Change in sales assigned to REMI industries based on NAICS codes of firms for completed grants.

<table>
<tr><th>Name of incentives</th><th>REMI model policy variables</th><th>Modeling description</th></tr>
<tr><td>Research and Development Expenses Tax Credit</td><td rowspan="2">Output and Demand>-Investment Demand>-Private investment in Research and Development</td><td rowspan="2">Model R&D tax credit investment impact as 1.75xtax credit utilization and Major R&D tax credit as 1.25xtax credit utilization. Investment is assigned to private investment in research and development based on REMI industry of tax credit utilization.</td></tr>
<tr><td>Major Research and Development Tax Credit</td></tr>
</table>

Source: Weldon Cooper Center.

When employment, capital investment, and other documented performance metrics were modeled (grant and loan programs), only a small portion of the program documented outcomes were attributed to the incentive. In only one instance (data center exemption), program employment levels are equal to program reported metric attainment. Even though the success of incentives in swaying business decisions varies by program (and by project), general assumptions are made by program type. For grants, the assumption was made that 10 percent of grant employment creation is attributable to the programs, with one exception (the Governor's Motion Picture Opportunity Fund). The 10 percent effect for grant programs is derived from the 10 to 15 percent consensus value range commonly recommended for use in economic incentive evaluations (Bartik 2018; Peters and Fisher 2004) and is the same estimate used in two previous analyses of state economic incentive economic impacts. (See *Review of Economic Development Incentive Grants*, JLARC 2012.) For the Governor's Motion Picture Opportunity Fund, 95 percent of film activity (job creation and Virginia spending) is attributed to the grant program based on a previous film industry evaluation study. (See *Evaluation: Film Incentives*, JLARC 2017). Film project employment was also converted to motion picture and sound recording industries full-time-equivalents because of the preponderance of part-time and seasonal employees in grant-supported film and television productions. For loan programs, 31 percent of loan program employment benchmarks were established as the program effects of the loan programs based on a previous analysis of loan program effects. (See *Workforce and Small Business Incentives*, JLARC 2018.)

Some REMI policy variables require industry level data aggregated into 70 REMI industry categories. NAICS codes were obtained or assigned and then cross-walked to REMI industry categories. NAICS-level industry information was obtained for grant projects as described in Appendix B. Tax credit projects were assigned NAICS codes based on available corporate tax filer industry characteristics when corporate users made up a large portion of filers or other information was not available. Thus, industries of corporate filers are assumed to be similar to other pass-through entities that file through the individual income tax system. Most sales and use tax exemptions are fairly narrowly targeted to individual industries, and industry assignment was relatively straightforward. In some instances, secondary data was used. For the Pollution Control Equipment exemption, utilization was assigned to industries using industry information from the U.S. Census Bureau's Pollution Abatement Costs and Expenditures: 2005 survey (issued in 2008) on pollution abatement capital expenditures for the state of Virginia (Table 8 of the survey report). For the Research and Development Exemption, industry information was drawn from the National Science Foundation Business Research and Innovation: 2013 on corporate R&D expenditures by industry (Table 30 of that report).

Table H-2
REMI industry assignments for modeling impacts of tax credits and sales and use tax exemptions

Programs	Industries
Tax Credit Programs	
Barge and Rail Usage Tax Credit	Corporate tax credit utilization files from Virginia Tax
Biodiesel and Green Diesel Fuels Producers Tax Credit	Chemical manufacturing
Coalfield Employment Enhancement Tax Credit	Mining
Farm Wineries and Vineyards Tax Credit	Beverage and tobacco product manufacturing
Green Job Creation Tax Credit	Construction
International Trade Facility Tax Credit	Corporate tax credit utilization files from Virginia Tax
Major Business Facility Job Tax Credit	Corporate tax credit utilization files from Virginia Tax
Motion Picture Production Tax Credit	Motion picture and sound recording industries
Qualified Equity and Subordinated Debt Investment Tax Credit	Corporate tax credit firm beneficiary files from Virginia Tax for TY2017-TY2020
Recyclable Materials Processing Equipment Tax Credit	Corporate tax credit utilization files from Virginia Tax
Research and Development Expenses Tax Credit	Not applicable
Telework Expenses Tax Credit	Corporate tax credit utilization files from Virginia Tax
Virginia Coal Production and Employment Incentive Tax Credit	Corporate tax credit utilization files from Virginia Tax
Virginia Port Volume Increase Tax Credit	Corporate tax credit utilization files from Virginia Tax
Worker Retraining Tax Credit	Corporate tax credit utilization files from Virginia Tax
Sales and Use Tax Exemptions	
Airline Common Carriers Exemption	Air transportation
Aircraft Parts, Engines, and Supplies Exemption	Air transportation
Certain Printed Materials for Out-of-State Distribution Exemption	Printing and related support activities
Contractor Temporary Storage Exemption	Warehousing and storage
Data Centers (Broad) Exemption	Internet publishing and broadcasting; ISPs, search portals, and data processing; Other information services (50%); Other information services and telecommunications (50%)

Programs	Industries
Electrostatic Duplicators Exemption	Administrative and support services
Film, Television, & Audio Production Inputs Exemption	Motion picture and sound recording industries
Media Provider Equipment Exemption	Broadcasting except internet
Out-of-state Nuclear Facility Repair Exemption	Construction
Pollution Control Equipment & Facilities Exemption	U.S. Census Bureau PACE Survey
Railroad Common Carriers Exemption	Rail transportation
Railroad Rolling Stock Exemption	31% Mining (4), 21% Chemical manufacturing (26), 20% Wholesale Trade (28), and remainder to other railroad rolling stock using industries.
Research & Development Exemption	National Science Foundation Business Research and Innovation
Semiconductor Manufacturers Exemption	Computer and electronic product manufacturing
Semiconductor Wafers Exemption	Computer and electronic product manufacturing
Ships and Vessels Exemption	Water transportation
Taxi Parts & Radios Exemption	Transit and ground transportation
Uniform Rental & Laundry Businesses Exemption	Personal and laundry services
Virginia Spaceport Users Exemption	Air transportation
Other Incentives	
Data Center Single Sales Factor Apportionment	Internet publishing and broadcasting; ISPs, search portals, and data processing; Other information services
Manufacturing Single Sales Factor Apportionment	Manufacturing (REMI industry aggregation)
Qualified Business Long-Term Capital Gain Subtraction	Corporate tax credit firm beneficiary files for Qualified Equity and Subordinated Debt Investment Tax Credit from Virginia Tax for TY2017-TY2020
Zero G Zero Tax Act (Part II) Subtraction	Air transportation

SOURCE: Weldon Cooper Center.

For the purposes of the economic impact analysis, only completed grant and other incentive projects (i.e., loans, gap funding) were counted. Outcomes and expenditures were grouped for analysis based on the date/year when awards were completed.

When modeling firm employment increases, the REMI firm employment option is used. This option assumes that firm sales associated with incentivized job creation may displace to various degrees the sales of other Virginia-based firms in the same industry based on industry market-area characteristics.

To generate input data to capture the effect of firm retraining for the Virginia Jobs Investment Program, data for wages and salaries and value-added by industry were obtained from the Virginia REMI PI+ model. Ratios of value-added per wages were formed for each REMI industry. These ratios were then multiplied by estimated wage increases (1.5 percent) that resulted from firm retraining for the firms that were assumed to have been incentivized by the VJIP retraining grant.

The results by year were assigned to the REMI policy variables "Industry Sales/Exogenous Production" by REMI industry. Estimated wage increases were assigned to the compensation policy variable. This method is the same as used in an intensive review of the VJIP program. (See *Workforce and Small Business Incentives*, JLARC 2018.)

Two sales and use tax exemptions affect the Virginia economy through reducing the costs of goods sold to out-of-state buyers rather than Virginia-based firms. Thus, the sales tax exemption was modeled as an increase in sales for the Virginia warehousing and storage industry (contractor temporary storage exemption) and construction industry (out-of-state nuclear facility repair exemption) caused by the de-facto price reduction. Industry demand for production inputs was assumed to be relatively inelastic (0.5).

The data center exemption was modeled using employment and capital investment information from VEDP MOUs. Based on analysis included in an in-depth review (*Data Centers and Manufacturing Incentives*, JLARC 2019), approximately 90 percent of data center economic activity was attributed to the existence of the sales and use exemption. However, recently revised estimates for the data center exemption are several times as large as the estimates used in that study and would likely tip the balance for the remaining 10 percent of projects. Therefore, for this report it is assumed that 100 percent of the projects are attributed to the incentive. Data center employment was modeled as equally split between the telecommunications sector and internet publishing and broadcasting; ISPs search portals and data processing; and other information services. In addition to the employment and capital investment figures estimated using information from VEDP MOU data, it was assumed that 22.3 percent of capital investment costs were building and equipment and 77.7 percent sales and use tax exemption eligible equipment based on the expenditure pattern of a standard data center. These expenditures are represented as sales to the construction and wholesale trade sectors (wholesale margins only for the latter). Full-build out of data center employment and investment occurs over a three-year period. Allowance is made for an equipment refresh cycle of every five years, which is modeled as generating sales for the wholesale trade sector (again, only wholesale margin spending occurs in the state).

For each economic impact analysis, the opportunity cost of state funds was accounted for by raising personal income taxes. Personal income taxes are the largest source of tax revenue for the general fund, and thus seemed appropriate as a source for offsetting the cost of the incentive programs.

REMI PI+ discontinued tax revenue estimation as part of its base package beginning with the 2.0 version and moved improved revenue modeling capabilities into its new REMI Tax PI model. To conduct tax revenue analysis, this study scaled revenues to economic outputs using the procedure described in Regional Economic Models, Inc. (2012). State tax revenues were derived from the Census of Government's State and Local Government Finance and Annual Survey of State Tax Collections. Revenue estimates are calculated by multiplying state revenue rates by the corresponding base quantity, which included state-level demand for selected industries (general sales tax, selective sales tax, license taxes), state-level personal income less transfer payments (individual income tax), corporate income tax (gross domestic product), and personal income (other taxes). The tax revenue impact analysis does not include the effect of economic development incentives on other revenues, including non-general revenues. Nor does it estimate the effect on local tax revenues. Lastly, it does not estimate the effect of economic development incentives on government expenditures at the state or local level.

Economic impact estimates

Tables H-3 through H-14 provide estimates of the total economic activity induced by each group of incentives (i.e., grants, sales and use tax exemptions, tax credits, and other incentives), and the net impact (total activity adjusted for the reduction). Economic activity reported in the tables is defined as follows:

- Total employment – private and public employment,
- Private employment – private non-farm employment,
- Virginia GDP – Gross domestic product for Virginia (the market value of goods and services produced by labor and property in Virginia), and
- Personal income – received by persons from all sources.

TABLE H-3
Impact of economic development grant programs to the Virginia economy

Impact	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Economic activity induced by grant program										
Total employment	696	1,480	2,207	3,679	4,973	6,884	7,676	8,493	10,548	10,776
Private employment	661	1,392	2,055	3,421	4,593	6,353	7,022	7,735	9,636	9,772
Virginia GDP	$94,563,788	$212,688,795	$337,084,456	$595,850,567	$878,222,749	$1,230,828,785	$1,491,767,905	$1,711,466,178	$2,137,370,387	$2,306,863,097
Personal income	$47,513,579	$103,573,093	$167,891,954	$295,397,353	$438,635,919	$634,985,229	$778,380,665	$911,753,901	$1,157,552,956	$1,267,386,377
Reduction in economic activity because of the tax increase to fund grant program costs										
Total employment	(202)	(234)	(230)	(345)	(331)	(353)	(489)	(285)	(501)	(264)
Private employment	(192)	(219)	(211)	(319)	(301)	(321)	(448)	(250)	(456)	(227)
Virginia GDP	-$20,909,015	-$27,583,438	-$28,579,311	-$43,116,916	-$44,568,139	-$48,824,709	-$67,971,598	-$45,171,723	-$72,719,944	-$44,789,860
Personal income	-$14,137,945	-$18,023,548	-$19,652,803	-$30,511,849	-$31,941,287	-$36,472,943	-$51,187,874	-$36,208,757	-$58,601,189	-$38,932,382
Net economic impact of grant program										
Total employment	494	1,246	1,977	3,334	4,643	6,531	7,187	8,208	10,047	10,511
Private employment	469	1,173	1,844	3,103	4,292	6,032	6,574	7,485	9,179	9,544
Virginia GDP	$73,654,773	$185,105,356	$308,505,146	$552,733,651	$833,654,609	$1,182,004,076	$1,423,796,306	$1,666,294,455	$2,064,650,442	$2,262,073,237
Personal income	$33,375,634	$85,549,546	$148,239,151	$264,885,503	$406,694,632	$598,512,286	$727,192,791	$875,545,144	$1,098,951,768	$1,228,453,995

TABLE H-4
Revenue collections from economic development grant programs and their return in revenue

Impact	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Revenue tax collections induced by economic development grant programs										
General sales tax	$1,101,300	$2,206,061	$3,686,081	$6,431,024	$8,508,260	$14,090,892	$18,433,686	$20,975,904	$25,463,983	$28,871,940
Selective sales tax	$765,501	$1,571,357	$2,763,995	$4,772,023	$7,537,831	$10,242,821	$14,006,342	$16,684,105	$20,931,410	$25,662,251
License taxes	$120,902	$237,666	$378,315	$679,429	$922,486	$1,188,840	$1,501,203	$1,647,168	$2,064,554	$2,797,962
Individual income tax	$1,430,959	$3,236,613	$5,195,218	$9,372,135	$14,448,134	$21,002,914	$25,350,654	$31,726,462	$43,394,777	$38,055,037
Corporate income tax	$145,599	$354,036	$505,229	$948,943	$1,878,376	$2,694,142	$3,615,204	$4,390,480	$6,269,687	$14,320,398
Other taxes	$53,541	$116,001	$192,779	$348,101	$421,123	$684,165	$964,948	$1,540,087	$1,887,362	$1,378,786
Total revenue	$3,617,803	$7,721,734	$12,721,616	$22,551,655	$33,716,210	$49,903,775	$63,872,037	$76,964,207	$100,011,774	$111,086,374
Program cost	$21,557,485	$22,592,637	$21,418,042	$36,525,160	$35,235,817	$40,446,649	$61,634,652	$34,371,613	$72,418,598	$37,381,742
Net revenue	-$17,939,683	-$14,870,903	-$8,696,426	-$13,973,506	-$1,519,607	$9,457,126	$2,237,385	$42,592,594	$27,593,176	$73,704,632
Return on investment										
Return per $1 spent	$0.17	$0.34	$0.59	$0.62	$0.96	$1.23	$1.04	$2.24	$1.38	$2.97

TABLE H-5
Impact of economic development tax credits to the Virginia economy

Impact	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Economic activity induced by the tax credit program										
Total employment	219	399	408	451	484	377	453	374	288	345
Private employment	209	376	378	415	444	339	412	335	253	310
Virginia GDP	-$11,449,833	-$1,010,459	$21,285,120	$27,437,803	$38,177,848	$42,285,046	$49,564,447	$45,569,228	$47,491,775	$41,432,671
Personal income	$14,388,590	$28,030,783	$31,805,337	$37,882,252	$43,645,757	$38,495,288	$47,540,344	$42,980,538	$37,118,960	$43,904,921
Reduction in economic activity because of the tax increase to fund tax credit										
Total employment	-377	-571	-485	-478	-441	-304	-392	-286	-139	-297
Private employment	-359	-535	-444	-434	-397	-265	-352	-250	-112	-266
Virginia GDP	-$39,083,070	-$65,729,001	-$61,207,127	-$62,378,874	-$60,076,056	-$44,393,804	-$54,626,820	-$43,100,805	-$22,382,650	-$42,551,741
Personal income	-$26,426,891	-$43,347,605	-$41,602,971	-$44,798,141	-$45,144,197	-$36,413,349	-$45,839,213	-$38,342,894	-$25,630,946	-$41,089,666
Net economic impact of tax credit program										
Total employment	-158	-172	-77	-28	43	74	61	88	148	47
Private employment	-150	-159	-66	-19	47	74	60	85	141	44
Virginia GDP	-$50,532,903	-$66,739,460	-$39,922,007	-$34,941,072	-$21,898,208	-$2,108,758	-$5,062,373	$2,468,423	$25,109,125	-$1,119,069
Personal income	-$12,038,301	-$15,316,822	-$9,797,634	-$6,915,890	-$1,498,439	$2,081,939	$1,701,131	$4,637,645	$11,488,014	$2,815,254

TABLE H-6
Revenue collections from economic development tax credits and their return in revenue

Impact	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Revenue tax collections induced by tax credit program										
General sales tax	$243,128	$450,236	$465,587	$515,187	$553,514	$556,313	$807,898	$686,386	$552,608	$697,824
Selective sales tax	$168,996	$320,699	$349,119	$382,285	$490,382	$404,390	$613,860	$545,947	$454,244	$620,247
License taxes	$26,691	$48,505	$47,785	$54,429	$60,013	$46,936	$65,794	$53,900	$44,804	$67,626
Individual income tax	$433,592	$868,571	$963,335	$1,167,901	$1,392,432	$1,207,405	$1,488,056	$1,416,423	$1,285,804	$1,246,351
Corporate income tax	-$17,629	-$1,682	$31,903	$43,697	$81,656	$92,557	$120,116	$116,900	$139,311	$257,203
Other taxes	$16,214	$31,394	$36,520	$44,641	$41,903	$41,477	$58,935	$72,600	$60,522	$47,764
Total revenue	$870,991	$1,717,724	$1,894,248	$2,208,140	$2,619,901	$2,349,077	$3,154,659	$2,892,157	$2,537,294	$2,937,016
Program cost	$40,295,087	$56,868,837	$44,145,808	$46,958,185	$47,130,867	$34,545,450	$53,027,156	$41,092,270	$23,594,117	$52,890,120
Net revenue	-$39,424,096	-$55,151,112	-$42,251,560	-$44,750,045	-$44,510,966	-$32,196,373	-$49,872,497	-$38,200,113	-$21,056,823	-$49,953,104
Return on investment										
Return per $1 spent	$0.02	$0.03	$0.04	$0.05	$0.06	$0.07	$0.06	$0.07	$0.11	$0.06

TABLE H-7
Impact of data center sales and use tax exemption to the Virginia economy

Impact	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Economic activity induced by the exemption										
Total employment	-	-	-	-	-	-	-	-	30,071	66,085
Private employment	-	-	-	-	-	-	-	-	28,905	63,019
Virginia GDP	$0	$0	$0	$0	$0	$0	$0	$0	$3,331,602,076	$7,678,438,385
Personal income	$0	$0	$0	$0	$0	$0	$0	$0	$1,996,467,421	$4,666,414,751
Reduction in economic activity because of the tax increase to fund the exemption										
Total employment	-	-	-	-	-	-	-	-	(3,853)	(6,783)
Private employment	-	-	-	-	-	-	-	-	(3,665)	(6,365)
Virginia GDP	$0	$0	$0	$0	$0	$0	$0	$0	-$399,160,740	-$772,400,945
Personal income	$0	$0	$0	$0	$0	$0	$0	$0	-$269,959,050	-$511,782,313
	0	0	0	0	0	0	0	0	3331602076	7678438385
Net economic impact of the exemption										
Total employment	-	-	-	-	-	-	-	-	26,218	59,302
Private employment	-	-	-	-	-	-	-	-	25,241	56,654
Virginia GDP	$0	$0	$0	$0	$0	$0	$0	$0	$2,932,441,336	$6,906,037,440
Personal income	$0	$0	$0	$0	$0	$0	$0	$0	$1,726,508,370	$4,154,632,437

TABLE H-8
Revenue collections from the data center sales and use tax exemption and their return in revenue

Impact	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Revenue tax collections induced by exemption										
General sales tax	$0	$0	$0	$0	$0	$0	$0	$0	$35,273,585	$85,781,698
Selective sales tax	$0	$0	$0	$0	$0	$0	$0	$0	$28,994,909	$76,245,359
License taxes	$0	$0	$0	$0	$0	$0	$0	$0	$2,859,892	$8,313,051
Individual income tax	$0	$0	$0	$0	$0	$0	$0	$0	$79,077,140	$147,306,216
Corporate income tax	$0	$0	$0	$0	$0	$0	$0	$0	$9,772,805	$47,665,723
Other taxes	$0	$0	$0	$0	$0	$0	$0	$0	$3,255,191	$5,076,579
Total revenue	$0	$0	$0	$0	$0	$0	$0	$0	$159,233,521	$370,388,625
Program cost	$0	$0	$0	$0	$0	$0	$0	$0	$411,518,565	$685,194,946
Net revenue	$0	$0	$0	$0	$0	$0	$0	$0	-$252,285,044	-$314,806,321
Return on investment										
Return per $1 spent	--	--	--	--	--	--	--	--	$0.39	$0.54

TABLE H-9
Impact of economic development sales and use tax exemptions to the Virginia economy

Impact	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Economic activity induced by the exemptions										
Total employment	923	1,446	1,690	1,622	1,537	1,565	1,444	1,323	1,363	1,395
Private employment	884	1,366	1,578	1,495	1,406	1,427	1,306	1,189	1,227	1,256
Virginia GDP	$59,578,133	$135,349,867	$182,865,555	$197,668,050	$197,829,971	$205,730,762	$203,124,939	$194,685,913	$196,595,416	$208,662,341
Personal income	$61,082,420	$103,175,367	$130,951,170	$138,525,479	$143,047,621	$155,824,643	$155,380,294	$153,575,351	$164,419,276	$174,233,937
Reduction in economic activity because of the tax increase to fund the exemptions										
Total employment	(553)	(658)	(657)	(570)	(533)	(569)	(505)	(466)	(537)	(541)
Private employment	(526)	(613)	(603)	(516)	(479)	(512)	(449)	(413)	(480)	(482)
Virginia GDP	-$57,292,969	-$77,191,206	-$81,381,973	-$75,435,160	-$72,560,137	-$78,522,267	-$72,897,425	-$68,629,895	-$79,216,900	-$83,106,354
Personal income	-$38,740,338	-$50,484,524	-$55,909,900	-$54,120,808	-$55,079,792	-$61,675,879	-$59,734,302	-$59,165,473	-$68,513,102	-$72,280,789
Net economic impact of the exemptions										
Total employment	370	789	1,033	1,051	1,004	996	939	857	826	854
Private employment	358	753	975	979	927	915	856	776	747	774
Virginia GDP	$2,285,164	$58,158,661	$101,483,581	$122,232,890	$125,269,833	$127,208,495	$130,227,514	$126,056,018	$117,378,516	$125,555,988
Personal income	$22,342,081	$52,690,843	$75,041,271	$84,404,671	$87,967,829	$94,148,764	$95,645,992	$94,409,878	$95,906,173	$101,953,149

TABLE H-10
Revenue collections from the economic development sales and use tax exemptions and their return in revenue

Impact	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Revenue tax collections induced by exemptions										
General sales tax	$997,493	$2,120,462	$2,865,345	$2,874,803	$2,829,478	$3,969,018	$4,121,538	$4,004,331	$3,952,629	$4,232,032
Selective sales tax	$693,346	$1,510,385	$2,148,568	$2,133,195	$2,506,756	$2,885,122	$3,131,640	$3,185,020	$3,249,064	$3,761,558
License taxes	$109,506	$228,445	$294,080	$303,719	$306,779	$334,864	$335,650	$314,447	$320,469	$410,124
Individual income tax	$1,835,532	$3,194,385	$3,989,102	$4,273,615	$4,543,766	$4,943,216	$4,823,713	$5,065,763	$5,829,066	$4,966,066
Corporate income tax	$91,732	$225,300	$274,083	$314,803	$423,126	$450,321	$492,260	$499,434	$576,686	$1,295,321
Other taxes	$68,831	$115,556	$150,362	$163,241	$137,336	$167,893	$192,623	$259,412	$268,082	$189,549
Total revenue	$3,796,441	$7,394,533	$9,721,540	$10,063,376	$10,747,241	$12,750,433	$13,097,424	$13,328,407	$14,195,996	$14,854,650
Program cost	$59,069,549	$63,568,662	$61,422,967	$55,048,996	$57,167,942	$68,260,359	$65,015,423	$65,468,882	$81,319,706	$85,166,503
Net revenue	-$55,273,108	-$56,174,130	-$51,701,427	-$44,985,620	-$46,420,701	-$55,509,926	-$51,917,999	-$52,140,475	-$67,123,709	-$70,311,853
Return on investment										
Return per $1 spent	$0.06	$0.12	$0.16	$0.18	$0.19	$0.19	$0.20	$0.20	$0.17	$0.17

TABLE H-11

Impact of other incentives (loan, gap financing, manufacturing single sale apportionment, and income tax subtractions) to the Virginia economy

Impact	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Economic activity induced by other incentives										
Total employment	$26.36	$178.75	$246.85	$299.48	334	367	379	415	438	465
Private employment	$25.02	$169.12	$229.63	$275.58	304	333	341	373	393	418
Virginia GDP	$101,209.31	$2,760,498.74	$16,303,217.22	$26,371,473.48	$35,706,567	$46,404,914	$50,867,162	$58,185,426	$64,806,908	$71,945,240
Personal income	$1,794,088.14	$12,810,252.43	$19,123,056.17	$24,975,788.69	$29,802,773	$34,866,905	$38,356,015	$43,475,299	$48,124,327	$53,522,280
Reduction in economic activity because of the tax increase to fund costs of other incentives										
Total employment	-$33.90	-$223.30	-$243.59	-$253.88	-241	-223	-210	-204	-201	-201
Private employment	-$32.24	-$211.61	-$226.13	-$232.86	-218	-201	-187	-182	-179	-178
Virginia GDP	-$3,511,968	-$24,238,716	-$29,692,331	-$32,743,996	-$32,663,784	-$31,471,966	-$30,318,485	-$30,093,210	-$30,308,466	-$31,052,910
Personal income	-$2,374,645	-$16,389,104	-$19,800,356	-$22,627,936	-$23,536,815	-$23,888,583	-$24,211,093	-$25,005,449	-$25,976,800	-$27,188,145
Net economic impact of other incentives										
Total employment	-$7.54	-$44.55	$3.26	$46	93	143	169	211	236	265
Private employment	-$7.23	-$42.48	$3.50	$43	86	132	154	192	214	239
Virginia GDP	-$3,410,758	-$21,478,217	-$13,389,114	-$6,372,523	$3,042,783	$14,932,949	$20,548,678	$28,092,216	$34,498,441	$40,892,330
Personal income	-$580,557	-$3,578,852	-$677,300	$2,347,853	$6,265,958	$10,978,322	$14,144,922	$18,469,850	$22,147,527	$26,334,135

TABLE H-12

Revenue collections from other incentives and their return in revenue

Impact	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Revenue tax collections induced by other incentives										
General sales tax	-$27,333	-$253,742	-$125,165	-$22,875	$49,274	$213,451	$290,782	$346,150	$395,603	$455,217
Selective sales tax	-$18,999	-$180,738	-$93,854	-$16,974	$43,654	$155,160	$220,943	$275,326	$325,186	$404,611
License taxes	-$3,001	-$27,337	-$12,846	-$2,417	$5,342	$18,009	$23,681	$27,182	$32,074	$44,115
Individual income tax	$53,852	$398,994	$583,352	$774,433	$954,521	$1,115,382	$1,205,324	$1,462,460	$1,735,500	$1,551,950
Corporate income tax	$156	$4,595	$24,436	$41,999	$76,371	$101,575	$123,273	$149,265	$190,102	$446,617
Other taxes	$2,022	$14,347	$21,958	$29,432	$28,613	$37,567	$47,549	$73,436	$78,466	$58,227
Total revenue	$6,697	-$43,881	$397,880	$803,597	$1,157,776	$1,641,144	$1,911,552	$2,333,820	$2,756,930	$2,960,737
Program cost	$3,620,896	$24,049,204	$23,844,576	$25,030,446	$24,863,136	$24,975,957	$25,911,383	$27,754,626	$29,591,496	$31,531,124
Net revenue	-$3,614,199	-$24,093,085	-$23,446,696	-$24,226,849	-$23,705,361	-$23,334,813	-$23,999,832	-$25,420,807	-$26,834,566	-$28,570,387
Return on investment										
Return per $1 spent	$0.00	$0.00	$0.02	$0.03	$0.05	$0.07	$0.07	$0.08	$0.09	$0.09

TABLE H-13
Impact of all economic development incentives to the Virginia economy

Impact	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Economic activity induced by all incentives										
Total employment	1,864	3,505	4,551	6,051	7,328	9,193	9,952	10,605	42,708	79,066
Private employment	1,779	3,303	4,241	5,607	6,747	8,451	9,081	9,632	40,415	74,774
Virginia GDP	142,793,297	349,788,702	557,538,348	847,327,893	1,149,937,135	1,525,249,507	1,795,324,453	2,009,906,744	5,777,866,561	10,307,341,735
Personal income	124,778,677	247,589,496	349,771,517	496,780,872	655,132,070	864,172,065	1,019,657,319	1,151,785,089	3,403,682,939	6,205,462,265
Reduction in economic activity because of the tax increase to fund the costs of all incentives										
Total employment	(1,166)	(1,687)	(1,616)	(1,648)	(1,546)	(1,449)	(1,596)	(1,242)	(5,232)	(8,087)
Private employment	(1,109)	(1,578)	(1,484)	(1,502)	(1,395)	(1,299)	(1,436)	(1,094)	(4,892)	(7,519)
Virginia GDP	(120,797,022)	(194,742,362)	(200,860,742)	(213,674,947)	(209,868,117)	(203,212,745)	(225,814,328)	(186,995,633)	(603,788,701)	(973,901,810)
Personal income	(81,679,820)	(128,244,781)	(136,966,030)	(152,058,734)	(155,702,091)	(158,450,755)	(180,972,482)	(158,722,572)	(448,681,087)	(691,273,295)
Net economic impact of all incentives										
Total employment	698	1,818	2,936	4,403	5,782	7,744	8,356	9,363	37,476	70,979
Private employment	670	1,725	2,756	4,105	5,352	7,152	7,645	8,538	35,522	67,254
Virginia GDP	21,996,275	155,046,340	356,677,606	633,652,946	940,069,018	1,322,036,762	1,569,510,125	1,822,911,112	5,174,077,860	9,333,439,925
Personal income	43,098,857	119,344,714	212,805,487	344,722,138	499,429,980	705,721,310	838,684,836	993,062,517	2,955,001,852	5,514,188,970

TABLE H-14
Revenue collections from all economic development incentives and their return in revenue

Impact	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Revenue tax collections induced by all incentives										
General sales tax	$2,314,589	$4,523,017	$6,891,848	$9,798,139	$11,940,527	$18,829,673	$23,653,904	$26,012,772	$65,638,408	$120,038,712
Selective sales tax	$1,608,844	$3,221,703	$5,167,827	$7,270,528	$10,578,623	$13,687,493	$17,972,785	$20,690,399	$53,954,813	$106,694,025
License taxes	$254,098	$487,280	$707,334	$1,035,161	$1,294,620	$1,588,648	$1,926,327	$2,042,697	$5,321,794	$11,632,877
Individual income tax	$3,753,935	$7,698,563	$10,731,007	$15,588,083	$21,338,854	$28,268,917	$32,867,746	$39,671,108	$131,322,287	$193,125,620
Corporate income tax	$219,858	$582,249	$835,650	$1,349,442	$2,459,528	$3,338,595	$4,350,854	$5,156,080	$16,948,591	$63,985,262
Other taxes	$140,608	$277,299	$401,619	$585,415	$628,976	$931,103	$1,264,056	$1,945,536	$5,549,622	$6,750,904
Total revenue	$8,291,932	$16,790,110	$24,735,284	$35,626,768	$48,241,128	$66,644,430	$82,035,672	$95,518,591	$278,735,515	$502,227,401
Program cost	$124,543,017	$167,079,340	$150,831,393	$163,562,787	$164,397,762	$168,228,416	$205,588,615	$168,687,392	$618,442,482	$892,164,435
Net revenue	-$116,251,085	-$150,289,230	-$126,096,108	-$127,936,019	-$116,156,635	-$101,583,986	-$123,552,943	-$73,168,801	-$339,706,967	-$389,937,034
Return on investment										
Return per $1 spent	$0.07	$0.10	$0.16	$0.22	$0.29	$0.40	$0.40	$0.57	$0.45	$0.56

Appendix I: Agency responses

As part of an extensive validation process, the state agencies and other entities that are subject to a JLARC assessment are given the opportunity to comment on an exposure draft of the report. JLARC staff sent an exposure draft of this report to the Virginia Economic Development Partnership, Virginia Tax, secretary of commerce and trade, secretary of finance, and secretary of transportation.

Appropriate corrections resulting from technical and substantive comments are incorporated in this version of the report. This appendix includes a response letter from the Virginia Economic Development Partnership and Virginia Tax.

COMMONWEALTH of VIRGINIA

Department of Taxation

November 6, 2024

Mr. Hal E. Greer, Director
Joint Legislative Audit and Review Commission
919 East Main Street, Suite 2101
Richmond, Virginia 23219

Dear Mr. Greer:

Thank you for the opportunity to review and comment on the exposure draft report: *Economic Development Incentives, 2024*. We believe the report is well done and will be useful to the members of the General Assembly going forward. We have no comments.

Thank you again for the opportunity to review the draft report. Should you have any additional questions, please feel free to contact me.

Sincerely,

James J. Alex
State Tax Commissioner
Commonwealth of Virginia

c: The Honorable Stephen E. Cummings, Secretary of Finance

VEDP | Virginia Economic Development Partnership

October 30, 2024

Mr. Hal E. Greer, Director
Joint Legislative Audit & Review Commission
919 East Main Street, Suite 2101
Richmond, VA 23219

Re: VEDP response to the draft JLARC report, *Economic Development Incentives 2024: Spending and Performance*

Dear Mr. Greer:

Thank you for providing an opportunity for us to comment on the Joint Legislative Audit & Review Commission's (JLARC's) draft report, *Economic Development Incentives 2024: Spending and Performance*.

The report provides a helpful overview of economic development incentive spending and performance in the Commonwealth. Among other things, we appreciate your analysis showing that projects that received grant awards between FY14 and FY23 and completed their location or expansion project collectively created an estimated 61,000 jobs and $14.7 billion in capital investment and other spending in Virginia.

Your report demonstrates the impact of VEDP's most important economic development incentive programs. Notably, completed projects that received Virginia Jobs Investment Program (VJIP) grants accounted for the largest share of jobs (39,304) and capital investment and other spending ($6.1 billion) associated with Virginia's economic development grant programs during this time. Similarly, projects funded through the Commonwealth's Development Opportunity Fund (COF) ranked third in job creation (11,806 jobs) and business spending ($4.5 billion). In addition, 66 percent of completed projects met or exceeded their project-specific goals for capital investment or other spending and COF recipients achieved 132 percent of wage goals. Your report also highlights the effectiveness of VEDP's VALET program, noting that program participants collectively increased international sales by 109 percent of the expected goal.

We understand that the goal of the report is to review and evaluate the effectiveness of economic development incentives, and we appreciate the level and quality of analysis that goes into this report each year. In this context, as noted in response to previous reports, it is important to note that the sidebar on page 16 makes a generalization about the effectiveness of economic development incentive programs that is not based on this analysis. In practice, the effectiveness of economic development incentives in influencing company location decisions varies by program design and the amount of incentives offered relative to job creation and investment, among other factors. VEDP agrees with the use of state-of-the-art research and modelling in the evaluation of the effectiveness of incentives, but it is important to keep in mind the limitations of these methodologies and how they may be predisposed to underestimate the competitive influence and economic impact of VEDP's incentive programs.

Regarding the data center retail sales and use tax exemption, we are pleased the enhanced reporting requirements are yielding a more accurate estimate of the full economic benefits of this exemption. While limited data is available at present, your report underlines that this exemption accounts for more than half of the net additional jobs and almost half of Virginia GDP and personal income from incentives. The impact of the program, as the report points out, is supported by the fact that the data center exemption is unique among *tax incentives* (as opposed to grants and most other types of incentive programs) in requiring verified job creation and investment. Finally, this report focuses exclusively on state fiscal impact, but it is important for readers to keep in mind that a significant portion of the fiscal impact of this program is at the local level. All these factors highlight the importance of this critical program.

As always, we appreciated the professionalism and engagement of JLARC staff during the project and compliment your team on its insightful analysis and reporting.

Sincerely,

Jason El Koubi
President & CEO

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