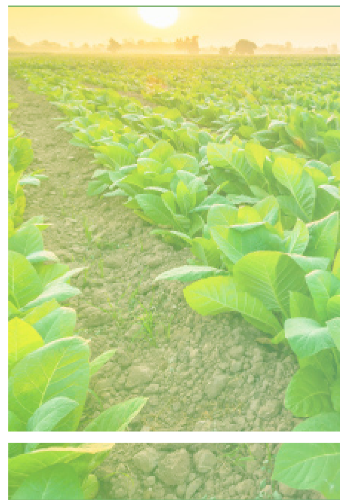
Commonwealth of Virginia
September 14, 2020

Report to the Governor and the General Assembly of Virginia

Infrastructure and Regional Incentives
Economic Development Incentives Evaluation Series



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JLARC Report 536
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Commission draft

This Commission draft of the JLARC report, *Infrastructure and Regional Incentives*, has been assembled for discussion, verification, and review. Do not quote, publish, or release any of the material contained in this draft until it has been received by the Commission and posted on the JLARC website.

Joint Legislative Audit and Review Commission
September 14, 2020

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Summary: Infrastructure and Regional Incentives

Virginia provides 10 incentives to promote business growth through financial incentives for infrastructure development and to encourage business activity in distressed regions of the state. Spending on these incentives totaled $690 million between FY10 and FY18. Nearly half of this amount was for two tax credits designed to boost coal mining in the state. Both coal tax credits are among the state's 10 largest incentives, with one—the Coalfield Employment Enhancement Tax Credit—being the state's second-largest incentive.

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 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 fourth in the series of in-depth reports on the effectiveness of individual incentives and focuses on Virginia's infrastructure and regional incentives.

WHAT WE FOUND

Coal tax credits are no longer relevant and should be eliminated

Virginia's coal tax credits—the Coalfield Employment Enhancement Tax Credit and the Coal Employment and Production Incentive Tax Credit—should be eliminated. The tax credits are among the state's largest incentives, but they generate economic losses for the state and no longer appear relevant. The Coalfield Employment Enhancement Tax Credit is no longer warranted to maintain competitiveness because Virginia's coal mining productivity has met that of other nearby coal-producing states. The Coal Employment and Production Incentive Tax Credit, which is designed to encourage electricity generators to use Virginia coal, no longer serves a purpose because all but one of Virginia's coal-fired plants will close by 2025, and the remaining plant is already dependent on Virginia coal.

Enterprise zone grants and program reported as useful, but poor targeting and design characteristics limit their effectiveness

Virginia's enterprise zone grants—the Real Property Investment Grant and Job Creation Grant—are designed to reduce regional economic disparities and encourage community revitalization by incentivizing real property investment and job creation in designated distressed areas of the state. Local economic development staff rate the grants as useful, but they appear to have little effect on employment, income, and other economic indicators, according to statistical analysis and other research. The effectiveness of grants in helping to improve economic conditions has likely been limited because enterprise zones are not well targeted to the most economically distressed localities, and the program and grants are not adequately designed to improve economic conditions in enterprise zones. The Real Property Investment Grant has relatively low eco-

nomic benefits per $1 million in state spending compared with other incentives. Benefits are moderate for the Job Creation Grant, which is better targeted to businesses expected to have high economic impacts.

Tobacco Region Opportunity Fund influences few business decisions, and only two industrial sites funded by megasite grants have tenants

Two of the Tobacco Region Revitalization Commission's programs—the Tobacco Region Opportunity Fund (TROF) and the megasite program—have not achieved their goals. TROF likely influences only a small percentage of business decisions, and a high percentage of projects did not materialize, so grant awards were canceled before funds were disbursed or funds were recaptured. TROF has a moderate economic benefit per $1 million in state spending compared with other incentives because it is moderately well targeted to projects in industries that have a higher economic impact. However, the benefits are lower than those estimated for Virginia grants, on average, because of poor performance of early projects.

Although the tobacco commission's megasite program has spent more than $90 million, only two of the nine business sites funded by megasite grants have tenants. Full build out will likely take decades and will be dependent on economic conditions. Even with the build-out, only half of future employment at the sites is likely to be "net new" employment for the state, with the other half representing relocated employees from elsewhere in the region or the state. Economic benefits for the megasite program are low and are expected to remain low compared with other incentives even if occupancy of the industrial sites increases.

Business Ready Sites Program has provided useful information on business site readiness but is too new to have economic impact

The most beneficial outcome of the Business Ready Sites Program so far is the collection of more accurate information on Virginia's existing business sites and identification of those that are "business ready." This catalog will provide useful information to target grant awards to business sites with the best potential for future development. It is too early to assess the impact of the site development grants on the Virginia economy because only eight grants have been awarded to business sites, and some sites are not business-ready. As more grants are awarded and sites become occupied, the program's economic benefits will likely grow but will remain low compared with other incentives. These lower economic impacts should be expected because the program's primary goal is to improve site readiness to attract future business, and awards are small in relation to total site development costs.

Transportation infrastructure grants have mixed success in achieving their goals

The transportation infrastructure grants—Transportation Partnership Opportunity Fund (TPOF), Economic Development Access Program (road access program), and

Rail Industrial Access Program (rail access program)—have mixed success in achieving their economic development goals. TPOF and the road access program have low economic benefits per $1 million in state spending, despite being generally well targeted to projects expected to have high economic impacts. Completed TPOF projects did not maintain employment levels, which reduced their economic benefits. The program's economic benefits should improve because of changes made in 2015. The rail access grant has a well-defined scoring system to select projects, and its economic benefits are moderate compared with other incentives.

Economic benefits of infrastructure and regional incentives varies from moderate to negligible

Program	Spending FY10–FY18	Incentive type	Economic benefit per $1M of spending
Coalfield Employment Enhancement Tax Credit	$225.5M	Tax credit	Negligible
Virginia Coal Employment and Production Incentive Tax Credit	89.1	Tax credit	Negligible
Transportation Partnership Opportunity Fund	35.2	Grant	Negligible
Tobacco Region Megasite Grant	97.3	Grant	Low
Real Property Investment Grant (Enterprise zone)	93.7	Grant	Low
Economic Development Access Program	18.2	Grant	Low
Tobacco Region Opportunity Fund	98.7	Grant	Moderate
Job Creation Grant (Enterprise zone)	22.5	Grant	Moderate
Rail Industrial Access Program	8.9	Grant	Moderate
Business Ready Sites Program	1.2	Grant	n.a.

Negligible ●○○○ Low ●●○○ Moderate ●●●○ High ●●●●

SOURCE: Weldon Cooper Center economic impact analysis of incentives.
NOTE: The economic benefits of each incentive is assessed relative to the economic benefits of other incentives evaluated in this series to date. Economic benefits can range from negligible to high. See Appendix C for methodology for categorizing the economic benefits of each incentive. Substantial changes were made to the Transportation Partnership Opportunity Fund in 2015; the program's economic benefit should improve because of these changes. The Business Ready Sites Program is new, and therefore the benefits of the program may not be fully realized. n.a.: not available

WHAT WE RECOMMEND

Legislative action

- Eliminate the Coalfield Employment Enhancement Tax Credit and Coal Employment and Production Incentive Tax Credit.
- Eliminate the Real Property Investment Grant or better target awards to support property investment for projects in higher multiplier, export-base industries or projects likely to have substantial local benefits.
- Direct the Commonwealth Transportation Board to develop guidelines and criteria for awarding grants from the Economic Development Access Program that include provisions for the number of jobs, capital investment, or other relevant criteria, in addition to the existing export-base requirement.

Executive action

- The Department of Housing and Community Development should review and revise the process for designating and renewing enterprise zones to better target distressed areas in the state.
- The Tobacco Region Revitalization Commission should strengthen due diligence procedures to increase the economic impact of the Tobacco Region Opportunity Fund.
- The Commonwealth Transportation Board should revise the program guidelines for the Economic Development Access Program to align with VEDP's project selection criteria, which are designed to enhance economic benefits.

The complete list of recommendations and options is available on page v.

Recommendations and Policy Options: Infrastructure and Regional Incentives

JLARC staff typically make recommendations to address findings during reviews. Staff also sometimes propose policy options rather than recommendations. The three most common reasons staff propose policy options rather than recommendations are: (1) the action proposed is a policy judgment best made by the General Assembly or other elected officials, (2) the evidence indicates that addressing a report finding is not necessarily required, but doing so could be beneficial, or (3) there are multiple ways in which a report finding could be addressed and there is insufficient evidence of a single best way to address the finding.

Recommendations

RECOMMENDATION 1
The General Assembly may wish to consider eliminating the Coalfield Employment Enhancement Tax Credit.

RECOMMENDATION 2
The General Assembly may wish to consider eliminating the Coal Production and Employment Incentive Tax Credit.

RECOMMENDATION 3
The Department of Housing and Community Development should review and revise the process for designating and renewing enterprise zones to ensure that the enterprise zone program targets distressed areas in the state.

RECOMMENDATION 4
If the General Assembly decides to maintain the Real Property Investment Grant, it may wish to consider amending § 59.1-548 of the Code of Virginia to restrict awards to projects in higher multiplier, export-base industries or to projects that would contribute to community revitalization.

RECOMMENDATION 5
The Department of Housing and Community Development (DHCD) should determine how to best incentivize long-term job creation and retention through the Job Creation Grant. DHCD should report on its proposal to the governor and the chairs of the House Appropriations and Senate Finance & Appropriations Committees no later than November 1, 2021.

RECOMMENDATION 6
The Department of Housing and Community Development should automate and standardize the collection of wage data from all Job Creation Grant applicants.

RECOMMENDATION 7
The Tobacco Region Revitalization Commission should adopt a checklist of standard information required of Tobacco Region Opportunity Fund grant applicants to strengthen the due diligence process for awarding the grant and require that all grant applicants submit this information for consideration as part of the application process.

RECOMMENDATION 8
The Tobacco Region Revitalization Commission should collaborate with the Virginia Economic Development Partnership (VEDP) to develop a process for sharing the results of the VEDP Project Review and Credit Committee for projects that are seeking grants from one of the VEDP programs and the Tobacco Region Opportunity Fund.

RECOMMENDATION 9
The Tobacco Region Revitalization Commission should require industrial sites that received megasite program funding to regularly report performance information such as job creation and capital investments by businesses that locate or expand in the industrial sites.

RECOMMENDATION 10
The Tobacco Region Revitalization Commission should adopt a transparent prioritization framework for awarding megasite grants that accounts for factors such as market demand, costs of development, and other objective factors.

RECOMMENDATION 11
The Virginia Economic Development Partnership should require that businesses renew their certification status at least every five years.

RECOMMENDATION 12
The General Assembly may wish to consider amending § 33.2-1509 of the Code of Virginia to direct the Commonwealth Transportation Board, in consultation with the Secretary of Transportation and Secretary of Commerce and Trade, to develop guidelines and criteria for awarding grants from the Economic Development Access Program that include provisions for the number of jobs, capital investment, or other relevant criteria, in addition to the existing export-base requirement.

RECOMMENDATION 13

The Commonwealth Transportation Board should revise the program guidelines for the Economic Development Access Program to align with 1) criteria for the Commonwealth's Opportunity Fund or Virginia Investment Program for non-speculative projects and 2) project prioritization guidelines for the Virginia Business Ready Sites Program for speculative projects, once the prioritization process is finalized.

RECOMMENDATION 14

The Virginia Department of Transportation should collect job creation projections from all Economic Development Access Program applicants and collect data on actual jobs created from each project that received a grant award at the end of the project performance period.

RECOMMENDATION 15

The Department of Rail and Public Transportation should collect data on actual jobs created from each project that received a Rail Industrial Access Program grant award at the end of the project performance period.

RECOMMENDATION 16

The General Assembly may wish to consider amending § 33.2-1509 of the Code of Virginia to remove the requirement for the Virginia Economic Development Partnership to consult with the Department of Small Business and Supplier Diversity to determine if projects seeking an award from the Economic Development Access Program are basic employers.

Policy options to consider

POLICY OPTION 1

The General Assembly could consider eliminating the Real Property Investment Grant by repealing § 59.1-548 of the Code of Virginia.

POLICY OPTION 2

The Tobacco Region Revitalization Commission could require all Tobacco Region Opportunity Fund grant awards be paid only after performance.

POLICY OPTION 3

The General Assembly could consider amending the Code of Virginia to require that job creation performance be one of the factors considered to determine if grant awards from the Economic Development Access Program and Rail Industrial Access Program should be recaptured.

Regional and Infrastructure Incentives

Economic Development Incentives Evaluation Series

Virginia provides economic development incentives to encourage business growth 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 conduct, on a continuing basis, a review and evaluation of the effectiveness and economic benefits of economic development incentives such as grants, tax preferences, and other assistance. (See Appendix A for the study mandate.) This report is part of a series of annual reports that provide comprehensive information about the effectiveness and economic benefits of individual economic development incentives offered by the state. JLARC contracted with the University of Virginia's Weldon Cooper Center for Public Service to perform the evaluation.

This report focuses on 10 incentives (Table). Four incentives provide financial assistance for infrastructure development to attract business growth and expansion. These incentives help fund road access, rail access, or other transportation infrastructure needs, and industrial site planning and development.

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

Six incentives are designed to encourage business activity in the state's economically distressed regions. Four of the incentives are targeted to activity in the coalfield and tobacco regions in Southern and Southwestern Virginia by incentivizing businesses to locate or expand their operations there or by incentivizing coal production from the coalfield region's mines. The remaining two incentives are targeted to business growth in the state's enterprise zones.

State spending on these 10 incentives totaled $690 million (FY10 to FY18). The Coalfield Employment Enhancement Tax Credit is by far the largest of the incentives evaluated in this report and is the state's second-largest incentive in terms of spending. This tax credit currently represents 10 percent of Virginia's total spending on incentives ($2.3 billion) between FY10 and FY18. (See *Economic Development Incentive*s, JLARC 2019).

These 10 infrastructure and regional development incentives comprised almost half of spending on economic development incentives in FY10 ($69 million out of $140 million), but their share of spending decreased to 17 percent in FY18 ($49 million out of $287 million). The decrease reflects lower spending on some of these incentives. Fewer coal tax credits are being claimed because of industry shrinkage, and funds dedicated to the Tobacco Region Megasite Grant are nearly exhausted (only $3 million remains in the fund). In addition, spending has increased for other state economic development incentives, particularly the data center exemption.

TABLE: Ten incentives that provide financial assistance for infrastructure development or promote business activity in certain regions are included in this report

Program	Spending FY10–FY18	Purpose: Infrastructure development	Purpose: Encourage growth in distressed regions
Coalfield Employment Enhancement Tax Credit	$225.5M		✓
Tobacco Region Opportunity Fund	98.7		✓
Tobacco Region Megasite Grant	97.3	✓	✓
Real Property Investment Grant (Enterprise zone)	93.7		✓
Virginia Coal Employment and Production Incentive Tax Credit	89.1		✓
Transportation Partnership Opportunity Fund	35.2	✓	
Job Creation Grant (Enterprise zone)	22.5		✓
Economic Development Access Program	18.2	✓	
Rail Industrial Access Program	8.9	✓	
Business Ready Sites Program	1.2	✓	
All programs	**$690.2M**		

SOURCE: Weldon Cooper Center review of Code of Virginia and agency documents
NOTE: Grant spending includes amounts for projects that have completed or have reached milestones and received payments, and tax credits include amounts claimed.

Spending on the coal tax credits is expected to decrease further because of legislative changes that restricted eligible users of the Coalfield Employment Enhancement Tax Credit. Use of the Coal Employment and Production Incentive Tax Credit should also decrease with further contraction of thermal coal mining used to generate electricity because of the closure of all but one coal-fired power plant in the state.

1. Coal Tax Credits

Virginia provides two tax credits to encourage coal production or coal use: the Coalfield Employment Enhancement Tax Credit (coalfield tax credit) and the Virginia Coal Employment and Production Incentive Tax Credit (electricity generator tax credit). Virginia's coal production occurs principally in the coalfield region of Southwest Virginia (Buchanan, Dickenson, Lee, Russell, Scott, Tazewell, and Wise counties and the City of Norton). Over 95 percent of coal production occurs in Buchanan, Dickenson, and Wise counties. (See Appendix D for a map of the region.) Virginia is among the 15 states (out of 23 that produced coal in 2018) that offer tax credits to the coal industry. (See Appendix D for more information on state coal tax credits).

The coal mined in the Southwest Virginia Coalfield is mostly **metallurgical coal** used to make steel or **thermal coal** used for electricity or "power" generation.

Metallurgical coal is a higher grade coal because of its high carbon and low sulfur, ash, and moisture content. It is used to make "coke," which is the raw material used to make steel.

Thermal coal has a lower carbon content and higher moisture content than metallurgical coal.

The coalfield tax credit was adopted in 1995 to encourage coal production and coal employment and provides a tax credit to "any person who has an economic interest in coal" mined in the state, which generally is the mining company that extracted the coal (Table 1-1). The amount of the coalfield tax credit varies by mining method (surface versus underground) and changes in employment levels. The coalfield tax credit also provides a tax credit for coalbed methane—1¢ per million BTUs (British Thermal Units)—which is natural gas extracted from coalbeds. Originally, both metallurgical and thermal coal were eligible for the coalfield tax credit, but legislative changes now restrict eligibility to the production of metallurgical coal and coalbed methane.

Unlike many of Virginia's tax credits, the coalfield tax credit is refundable, which means recipients who qualify for credits that exceed the taxes they owe can receive a refund for the difference. Coalfield tax credit recipients are eligible to receive 85 percent of the refunded amount, with the other 15 percent earmarked for the Virginia Coalfield Economic Development Authority (VCEDA).

Recent legislative changes to the coalfield tax credit restrict eligibility to the production of metallurgical coal and coalbed methane. The coalfield tax credit was allowed to expire on January 1, 2017, but legislation in 2018 reinstated it with a more limited scope. The legislation also extended the expiration date to January 1, 2023.

The electricity generator tax credit was adopted in 1999 to encourage the use of Virginia-mined coal for power generation. The credit allows electricity generators to claim a $3 per ton credit for Virginia-mined coal they purchase and use. Legislative changes in 2006 allowed electricity generators to allocate the credit to taxpayers with "an economic interest in coal"—usually the mining company from which the coal was purchased. Credits are allocated through the purchase agreement between the electricity generator and the mining company; therefore, the electricity generator still benefits from the credit because of a lower purchase price for coal. However, the provision allowing allocated credits to be refundable expired on or after July 1, 2016, making it less likely that credits will be allocated.

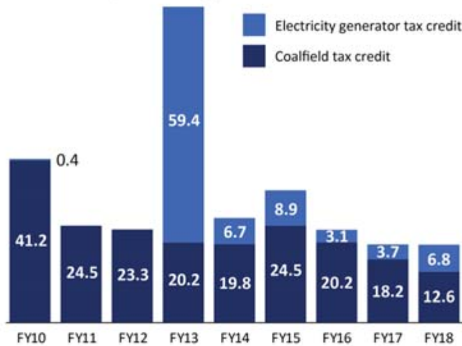
COAL TAX CREDITS

Encourage coal productions and use of Virginia-mined coal.

VALUE TO BENEFICIARIES

FY10-18

Beneficiary savings: $291.5M total



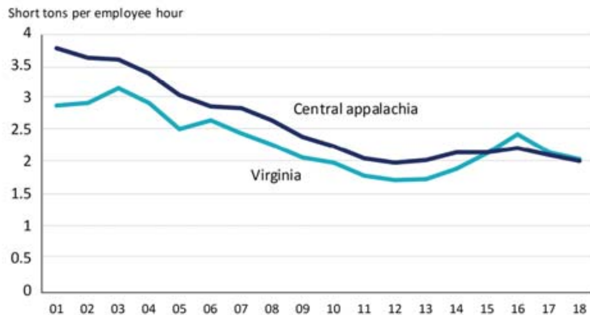
Beneficiaries (returns)

377 tax returns
Coal mining companies

35 tax returns
Electricity generators

ACHIEVEMENT OF PURPOSE

Virginia coal production is now competitive with nearby states suggesting coalfield tax credit no longer warranted



Electricity generator tax credit no longer needed because all but one of Virginia's existing coal-fired plants will close by 2025

IMPACT TO STATE ECONOMY

FY 10-18

Economic benefit per $1M in credits
Jobs, state GDP, and personal income

Return in revenue
per $1 spent

●●●● High
●●●○ Moderate
●●○○ Low
●○○○ Negligible

Coalfield tax credit

Electricity generator tax credit

NOTE: Beneficiary savings exclude the $23 million in refundable coalfield tax credits provided to the Virginia Coalfield Economic Development Authority, which brings the total amount of forgone revenue from the tax credits to $314 million. The Department of Taxation includes the portion earmarked for VCEDA in the amount of Coalfield Employment Enhancement Tax Credits claimed in its annual reports.

TABLE 1-1
Virginia provides two tax credits to encourage coal production and use

	Coalfield Employment Enhancement Tax Credit (coalfield tax credit)
Purpose	Encourage mining of Virginia metallurgical coal and coalbed methane and coal employment.
Eligibility	Person who has economic interest in metallurgical coal mined or coalbed methane produced in the state (prior to 2017 it was not restricted to metallurgical coal).
Credit features	Tax credit amount varies by mining method. - Underground mining: $2 per ton for seam thickness of 36" or less and $1 per ton for seam thickness above 36." - Surface mining: 40¢ per ton of coal sold. - Coalbed methane: 1¢ per million BTUs of coalbed methane produced in the Commonwealth Tax credit amount also varies by employment levels: the value of the credit is multiplied by an employment factor—the taxpayer's coal mining jobs in the year the credit was earned as a percentage of the taxpayer's coal mining jobs in the previous year—to arrive at the final credit amount. Refundable at 85% of refunded value with the other 15% earmarked for the Virginia Coalfield Economic Development Authority. Claimed against corporate income tax, or any other tax imposed by the state. Claimed the 3rd year after a company earns it, (e.g., if a company earns the credit in 2018, it can claim it on its 2021 return). Cannot claim Coalfield Employment Enhancement Tax Credit and Virginia Coal Employment and Production Incentive Credit on the same ton of coal.
	Virginia Coal Employment and Production Incentive Credit (electricity generator tax credit)
Purpose	Encourage use of Virginia coal for power generation to increase coal production and employment.
Eligibility	Electricity generators that purchase Virginia coal to produce power.
Credit features	Tax credit of $3 per ton of Virginia coal that can be claimed against the corporate income tax or the modified net income tax imposed on certain cooperative electric suppliers. Electricity generator can allocate their credits back to the Virginia mine (through the purchase contract) from which the coal was purchased. These allocated credits were refundable if earned prior to July 1, 2016. Carryover period of 10 years.

SOURCE: Weldon Cooper Center review of the Code of Virginia and agency documents.
NOTE: Authorized by §§ 58.1-439.2 and 58.1-433.1.

Virginia's coal tax credits are among the state's 10 largest credits

Coal mining companies and electricity generators saved $291.5 million in income taxes because of the coal tax credits between FY10 and FY18. Both of the coal tax credits are among the state's 10 largest incentives, with the coalfield tax credit being the second-largest incentive (see *Economic Development Incentives 2019*, JLARC 2019). The majority (72 percent) of the savings were through the coalfield tax credit, through which mining companies saved $22 million in taxes per year, on average, during the time period. In contrast, savings from the electricity generator tax credit have generally been

much lower with the exception of FY13 when tax savings spiked to $59 million because businesses claimed large amounts of carryover credits that year.

VCEDA received $23 million from refunded coal tax credits from FY10–FY18

The majority of the **$23 million** VCEDA received from refunded tax credits is likely from the coalfield tax credit even though VCEDA also would get 15 percent of electricity generator tax credits that are allocated and refunded.

Between FY10 and FY18, VCEDA received $23 million from refunded coal tax credits (15 percent of the total refundable portion). This amount brings the total forgone state revenue from the two tax credits to $315 million during the study period. VCEDA, which was created in 1988, is tasked with revitalizing and diversifying the coalfield region's economy. The region has historically had substantially higher poverty and unemployment rates and substantially lower per capita income than the statewide averages. Refunded coal tax credit revenue made up one-third of VCEDA's total revenue between FY10 and FY18 ($81 million) with the remaining sources of revenue coming from local severance taxes.

VCEDA finances various economic development projects in the region. Its primary financing program is a revolving loan fund that provides low-interest loans for businesses' fixed-asset financing. VCEDA also provides grant and loan financing for industrial park development and other public facilities to promote tourism and economic development and began offering a seed capital matching grant program in 2017 for small business development.

VCEDA made 10 grant and loan awards totaling $20.7 million between FY10 and FY18 from coal tax credit revenues. Two of the awards were canceled before disbursements were made. The remaining eight funded projects fell into three categories: economic development low interest loans for business location and expansion (53 percent), regional industrial park development (20 percent), and education and workforce development (27 percent). Few of the projects can be fully evaluated at this time since they are either still underway or represent industrial park development, training, and other infrastructure construction that are long-term investments designed to attract future business activity and improve worker productivity. (See Appendix E for more information on the eight projects.)

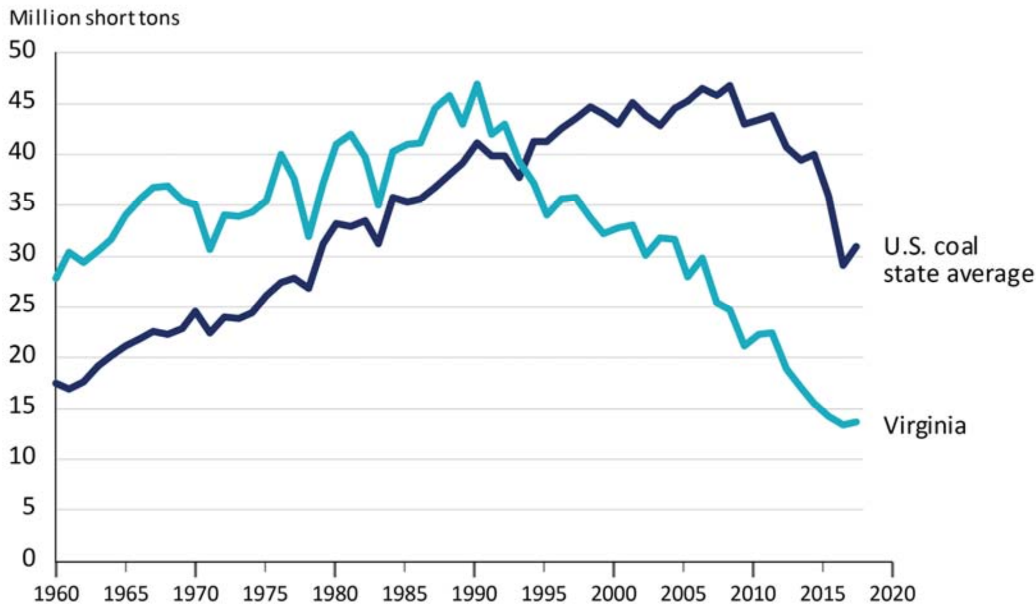
Tax savings for coal mining companies and electricity generators are expected to decline

State spending on the coal tax credits is expected to decline in the future for several reasons. Statutory changes to the coalfield tax credit in 2018 limited the credit to metallurgical coal and coalbed methane, excluding thermal coal. The Department of Taxation estimated that businesses will claim an average of $5.8 million in tax savings per year through the coalfield tax credit between FY22 and FY24 because of the statutory changes. This amount is much less than the annual average ($22 million) between FY10 and FY18. This change will also reduce refundable amounts earmarked for VCEDA. The electricity generators tax credit will also decline because the state's electricity generators are switching from coal-powered plants to natural gas or other clean alternatives, as discussed in more detail later in this report.

Coalfield tax credit no longer warranted to maintain competitiveness with other coal-producing states

The motivation for the coalfield tax credit likely was to maintain Virginia's competitiveness in the coal industry. While coal production rose in the last century in both Virginia and nationally because of industrial (steel, power, and heat) and residential (electrical power) demand, Virginia's coal production peaked sooner (in 1990) and declined at a much faster rate than national production (Figure 1-1). Virginia's rapid decline occurred because of the state's decrease in economically recoverable coal reserves (remaining reserves had more challenging mining geology), reductions in coal power generation, and increased competition in the thermal coal market from mining companies in the western U.S., where thermal coal could be mined at lower costs. The credit was created after a 1994 study found Virginia mining companies were less competitive in metallurgical and thermal coal markets than other Central Appalachian companies because the state's thicker coal reserves had been exhausted, and remaining reserves were thinner and more geologically difficult to access. Several factors, however, suggest this credit is no longer necessary for Virginia to be competitive with other coal-producing states.

FIGURE 1-1
Virginia coal production peaked in 1990 and has fallen rapidly since



SOURCE: U.S. Energy Information Administration, State Energy Data System.

Virginia is more competitive in the metallurgical coal market, where quality and demand are more influential than the tax credit

Statutory changes in 2018 restricted the coalfield tax credit to metallurgical coal and coalbed methane, excluding thermal coal. Virginia faces fewer regional competitors in

the metallurgical coal market than the thermal market, where it competed with lower cost, lower sulfur coal from western states. West Virginia is the only nearby state with significant metallurgical coal reserves, and Virginia compares favorably with West Virginia for metallurgical coal.

The competitiveness of coal is determined by coal quality (e.g., sulfur and heat content), geological accessibility of deposits, and transportation costs. Virginia metallurgical coal is considered high quality. The coal's quality is a more important factor than mine productivity, making the credit less influential on business decisions. Virginia also has good access to export markets via nearby ports in Hampton Roads and Baltimore.

Effects of coal incentives on coal production and employment are small, according to most studies. Studies typically find small effects of taxes and incentives on production and employment because they assume that demand for coal is relatively price inelastic (i.e., quantity demanded is relatively unresponsive to price changes). Coal mining companies face relatively inelastic demand because end users such as electricity generators are sensitive to coal property differences (e.g., sulfur, ash, and heat levels) and must engage in costly refits to accommodate changes in suppliers. Companies also rely to some degree on long-term contracts with suppliers and are constrained by regulatory agencies in altering production mixes.

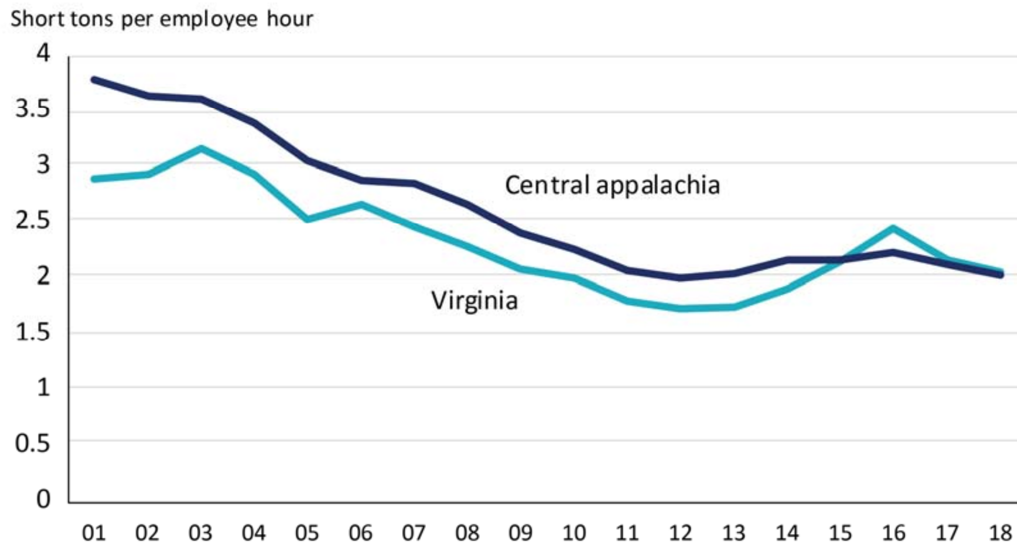
Demand for Virginia metallurgical coal has been more stable, unlike demand for thermal coal. This trend is the result of increasing demand for metallurgical coal internationally for infrastructure and building projects, though demand has slowed recently. Market prices for metallurgical coal, which are driven by demand, may also have a greater impact on coal production and employment than tax credits. (See *Review of the Effectiveness of Virginia Tax Preferences*, JLARC, 2012). International exports of coal, which are mainly metallurgical coal, now account for approximately half of Virginia coal shipments, with 70 percent of the value going to Europe between 2014 and 2018.

Forecasts from the West Virginia University Bureau of Business and Economic Research indicate that Virginia's metallurgical coal production should remain fairly steady over the next 20 years. Long-term global growth and continued demand for steel should support Virginia metallurgical coal production. However, the industry will be affected by periodic fluctuations in demand from changes in exchange rates, economic activity, trade policies, and technological changes in industries that use coal.

Virginia coal productivity is now more competitive with neighboring states

While both coal mining employment and coal production in Virginia have rapidly declined since 1990 (74 percent and 71 percent decline, respectively), coal mining productivity (measured as short tons per employee hour) has converged with the productivity of Central Appalachia mines (Figure 1-2), reducing the need for the tax credit. Productivity at mines located in West Virginia and eastern Kentucky has declined because of the need to access geologically more difficult reserves. However, Virginia mine closures have preserved the state's most productive mines.

FIGURE 1-2
Virginia coal production per employee has converged with Central Appalachian production



SOURCE: Energy Information Administration, Annual Coal Reports.

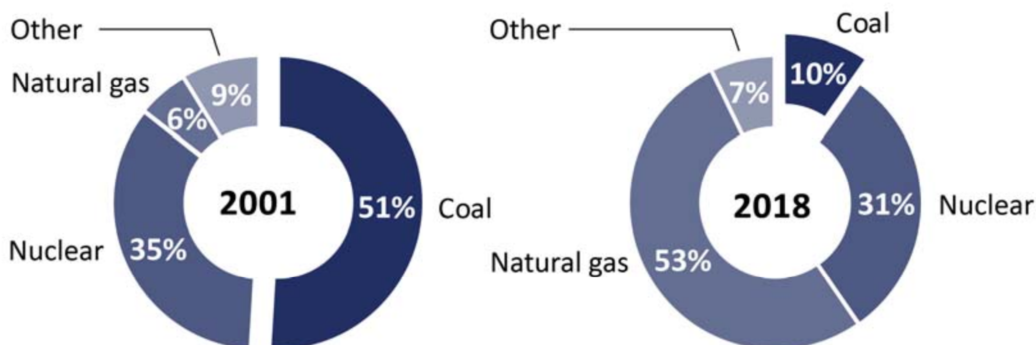
Credit no longer supports small, marginal coal mining companies

The 1994 study supporting creation of the coalfield tax credit indicated the tax credit would benefit the small, marginal coal mining companies in Virginia, but this rationale is no longer supported. Many of the smaller companies are no longer operating because they either went out of business or were acquired by larger mining companies to remain competitive. This trend has occurred nationally, not just in Virginia, with 52 percent of U.S. coal production attributed to the top five mining companies in 2018 compared with 37 percent in 1995.

Electricity generator tax credit is not relevant and has had little effect on decisions to use Virginia-mined coal

The electricity generator tax credit is designed to encourage Virginia electricity generators to use Virginia-mined coal rather than import other coal. However, power generation in Virginia and nationally has moved away from coal toward cheaper natural gas. Between 2001 and 2018, natural gas replaced coal as the major fuel source for power generation in Virginia (Figure 1-3). Clean energy alternatives are also replacing coal power generation because of international and national regulations and state renewable mandates/targets.

Figure 1-3
Between 2001 and 2018, natural gas has replaced coal as the major fuel source for power generation in Virginia



SOURCE: U.S. Energy Information Administration, Electric Power Annual 2001–2018.

All but one of Virginia's coal-fired plants will likely close by 2025

Retired coal-fired plants
Altavista (closed 2010, now biomass)
Bremo Bluff (closed 2013, now gas)
Hopewell (closed 2013, now biomass)
Southampton (closed 2013, now biomass)
Clinch River (closed 2015, now gas)
Glen Lyn (closed 2015)
Chesapeake (closed 2015)
Mecklenburg ("cold reserve storage" in 2018)
York units 1 and 2 (closed 2019)
Chesterfield units 3 and 4 (closed 2019)

The Virginia Clean Economy Act of 2020 requires the retirement of Virginia's coal-fired power plants by the end of 2024 unless they are located in the coalfield region or jointly owned by an electric cooperative. Because Virginia electricity generators have mostly replaced coal power generation with natural gas, only three coal-fired plants remained in operation in Virginia in 2019 (Chesterfield, units 5 and 6; Clover; and Virginia City Hybrid Center, which opened in 2012). The Chesterfield power plant must be retired by 2024 pursuant to the Virginia Clean Economy Act. Virginia City Hybrid Center, which is located in the coalfield region, is allowed to remain open. This plant was founded on the premise that it would leave a smaller ecological footprint than other power plants by burning biomass and using waste or gob coal (coal that had too much rock and dirt mixed in for power generation and other uses and was often left piled along streams and creeks at a mine site). Clover is jointly owned with an electric cooperative and also allowed to remain open, but it is operating at low capacity and is expected to close by 2025, according to the integrated resource plan of one of the owners.

Coal-fired power plants' use of Virginia-mined coal has fluctuated since adoption of credit, suggesting other factors are more influential

The amount of Virginia-mined coal used by Virginia's coal-fired power plants has fluctuated over time, suggesting other factors have more influence over where companies purchase coal. According to the 1994 study for the coal industry, 44 percent of coal purchased by Virginia power plants came from Virginia sources in 1986 when the electricity generator tax credit was enacted. The percentage of coal purchased from Virginia sources increased to 50 percent in the first half of 1994, dropped to less than 20 percent in 2010 (before the opening of Virginia City Hybrid and during the recession), and then rose to 45 percent in 2018.

Virginia City Hybrid is the only power plant that purchases its coal primarily from Virginia sources. The plant obtains 99 percent of its waste or gob coal from a nearby abandoned mine. The Chesterfield power plant purchases all of its coal from out of state. Clover purchased only 26 percent of its coal from Virginia in 2018. The rest of the coal was purchased from West Virginia and Kentucky.

Coal tax credits have negligible economic benefit and negligible returns in state revenue

Unlike most other incentives evaluated so far in this series, the coal tax credits do not generate additional activity for the Virginia economy, adjusting for the opportunity cost of increasing taxes to pay for the credits. This occurs because any additional activity such as jobs induced by the credits is eroded by the reduction in economic activity that occurs because of tax increases to pay for the credits. It is estimated that the Virginia economy lost 35 jobs, $21 million in Virginia GDP, and $5 million in personal income because of the credits (Table 1-2).

Economic impact analysis of incentive spending between FY10 and FY18 was conducted using economic modeling software developed by REMI, Inc.

(See Appendix O [online only] for the economic impact analysis used in this study.)

TABLE 1-2

Economic benefits of coal tax credits and VCEDA are negligible and returns in state revenue are negligible (FY10–FY18)

	Annual average FY10–FY18		
	Coalfield tax credit	Electricity generator tax credit	VCEDA
Net impact to Virginia economy			
Private employment	(3 jobs)	(32 jobs)	6 jobs
Virginia GDP	($13.5M)	($7.1M)	$0.7M
Personal income	($3.1M)	($2.5M)	$0.4M
Impact to Virginia economy per $1 million of incentives			
Private employment	8 jobs	5 jobs	13 jobs
Virginia GDP	$0.5M	$0.4M	$1.6M
Personal income	$0.7M	$0.6M	$1.0M
Impact to state revenue			
Total revenue	$1.0M	$0.3M	$0.1M
Incentive awards	$25.1M	$9.9M	$1.0M
Revenue net of awards	($24.1M)	($9.6M)	($1.0M)
Return in revenue	4¢ for every $1 spent	3¢ for every $1 spent	6¢ for every $1 spent

SOURCE: Weldon Cooper Center economic impact analysis of amount of incentive spending between FY10 and FY18.
NOTE: Includes direct, indirect, and induced impacts. Gross impact on Virginia's economy is used to calculate impact per $1 million in incentive awards. This is consistent with how the economic development research literature typically calculates these impacts. (See Appendix O [online only] for 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.) Estimates for VCEDA are related to projects funded with refundable coal tax credit amounts.

The economic benefits of the coal tax credits are negligible compared with the economic benefits of other incentives, when benefits are assessed per $1 million spent on the incentives. Overall, Virginia's economic development incentives are estimated to collectively generate 35 jobs, $5.1 million in Virginia GDP, and $3.2 million in income per $1 million spent on incentives. (See *Economic Development Incentives 2018*, JLARC

Net impact is the increase in economic activity induced by the incentives after adjusting for the opportunity cost of increasing taxes to pay for the incentives.

(See Appendix P [online only] for information on the total economic impact and the opportunity cost of increasing taxes.)

2018.) Both the coalfield tax credit and the electricity generator tax credit generate well under these amounts per $1 million spent (Table 1-2). These tax credits also generate among the lowest amounts of jobs, Virginia GDP, and income per $1 million spent among all incentives evaluated to date. (See Appendix C for more detail on the comparison of economic benefits generated by Virginia incentives.)

The returns in state revenue for the coalfield tax credit (4¢ per $1 spent) and the electricity generators tax credit (3¢ per $1 spent) are also negligible. These amounts are substantially lower than the 19¢ return in state revenue per $1 spent for all incentives, on average, but are in line with the return in state revenue for tax credits. (See *Economic Development Incentives 2018*, JLARC 2018.)

The economic benefits and return in state revenue generated by VCEDA are also negligible. These benefits include VCEDA expenditures of refundable tax credits mainly on industrial site improvements and, to some extent, educational services between FY10 and FY18. For comparison purposes, VCEDA spending is most similar to spending by the Tobacco Commission megasite grant and the Virginia Business Ready Sites Program, which also fund industrial site development and are discussed later in this report. The economic benefits per $1 million spent and returns in state revenue per $1 spent by VCEDA are similar to the estimates for both the megasite grant and business ready site development grants, though slightly lower. These economic benefits and returns in revenue may increase over time if additional businesses occupy the industrial sites. These findings are in contrast with a 2018 study that found that VCEDA had a substantial impact on the regional economy, including the creation of 37,000 additional jobs, which represents 75 percent of the current employment in the coalfield region. The VCEDA economic impact study likely overestimates the impacts because the study assumes that all projects receiving funding from VCEDA would not have occurred without VCEDA's assistance. Research of incentives nationally suggests that a more realistic assumption is that between 2 percent and 25 percent of projects would not occur without incentives (Bartik 2018).

Coal tax credits should be repealed, and the economic benefits of VCEDA should be thoroughly evaluated

Both of the coal tax credits should be eliminated because they are no longer warranted to maintain competitiveness with other coal producing states or are no longer relevant. In addition, the coal tax credits generate net losses in economic activity such as jobs. The effectiveness of VCEDA should also be evaluated to determine if it should be discontinued, particularly if the coalfield tax credit—one of its major funding sources—is eliminated.

The coalfield tax credit should be eliminated

The Coalfield Employment Enhancement Tax Credit—the coalfield tax credit—should be eliminated because the rationale for creating it in 1996 is no longer applicable. The tax credit was motivated by industry studies showing Virginia mines were less

competitive than other Central Appalachian mines. Over time, Virginia's competitiveness has converged with that of other Central Appalachian mines because

- numerous Virginia coal mines have closed leaving the more productive mines open and
- the credit is now limited to metallurgical coal and coalbed methane, for which Virginia has certain competitive advantages.

Eliminating the credit would reduce its negative revenue impact by $5 million to $6 million per year, according to the Department of Taxation.

If the credit is not eliminated, consideration should be given to increasing the share of the refunded tax credit amount that goes to VCEDA until the credit expires, contingent upon a comprehensive evaluation of the effectiveness of VCEDA. The economic benefits generated by VCEDA are estimated to be higher than those generated by the tax credit. However, VCEDA will receive less funding from the tax credit as the coal industry continues to decline and because the credit is no longer applicable to thermal coal. At the same time, VCEDA's budget will be adversely affected by reduced contributions from severance tax revenues due to the decline in the coal industry.

RECOMMENDATION 1
The General Assembly may wish to consider eliminating the Coalfield Employment Enhancement Tax Credit.

The electricity generator tax credit should be eliminated

The Coal Production and Employment Incentive Tax Credit—the electricity generator tax credit—should also be eliminated because it is no longer relevant. Coal is no longer a major source of electricity for the state, and Virginia will only have one coal power plant in operation (Virginia City Hybrid) by 2025. This plant is located close to the Virginia mine where it sources nearly all of its coal, so it will likely continue purchasing Virginia coal regardless of the tax credit. Several other states with similar credits have eliminated their credits, including Ohio (2004), Colorado (2005), and Kentucky (2018). The electricity generator tax credit does not have an expiration date; therefore, the credit would need to be repealed through legislation.

RECOMMENDATION 2
The General Assembly may wish to consider eliminating the Coal Production and Employment Incentive Tax Credit.

Evaluate the effectiveness of VCEDA in stimulating economic development

A comprehensive evaluation of VCEDA's effectiveness in stimulating economic development for the coalfield region should be performed, particularly if the state deter-

mines more funding should be allocated to VCEDA for improving economic conditions in the region. Some studies suggest that well-funded and properly designed regional development agencies can have a positive impact on regional economic development over relatively long periods of time. VCEDA sponsored a recent economic analysis of its impact on the coalfield region in 2018, but the economic impacts appear substantially overstated.

A more comprehensive and robust evaluation of VCEDA's organization, strategies, spending, and outcomes should be completed to determine whether changes could improve its economic development outcomes. For example, consideration might be given to decreasing the representation of the coal industry on the authority's board because of coal's declining economic influence and replacing it with representatives of industries with faster growth potential in the region.

2. Enterprise Zone Grants

Virginia is among the 26 states that have an enterprise zone program through which the state and local governments partner to encourage economic development in distressed areas. (See Appendix G for information on enterprise zone programs in other states.) Enterprise zone programs are designed to reduce regional disparity throughout a state. Virginia's program is designed to attract business investment and employment opportunities to areas designated as enterprise zones, where businesses are eligible for incentives, including two state grants and a variety of local incentives.

Virginia's enterprise zone program is administered by the Department of Housing and Community Development (DHCD) in conjunction with local enterprise zone administrators. DHCD administers two state incentives to businesses operating within these zones, the Real Property Investment Grant and the Job Creation Grant (Table 2-1). Both grants are provided to businesses over a consecutive five-year period, during which businesses have to maintain eligibility to receive a grant in all five years. Although Virginia's enterprise zone program was created in 1982, the grants have existed only since 2005 when legislation—the Enterprise Zone Grant Act—converted existing state enterprise zone tax credits to grants and reduced the number and duration of enterprise zones.

The Real Property Investment Grant provides grants to businesses that make investments in industrial, commercial, or mixed-use properties within enterprise zone boundaries. (A mixed-use property must devote at least 30 percent of the building's or facility's usable floor space to commercial, industrial, or office use.) The award amount is up to 20 percent of the qualifying investment, but is capped at $100,000 if the total investment is less than $5 million and at $200,000 if the total investment is $5 million or more. According to DHCD staff, the grant does not focus on economic development exclusively. It is also designed to encourage community revitalization in enterprise zones.

The Job Creation Grant provides grants to businesses operating in enterprise zones that create at least five new positions. The award is $800 per job for jobs paying $14.50 or more per hour or $500 per job for jobs paying $12.69 to $14.49 per hour. If the business maintains eligibility for all five years, the maximum award per job is $4,000. Each business can receive grant funding for up to 350 jobs per year, so the maximum award per business is $280,000 per year.

Virginia has 45 enterprise zones that encompass approximately 245 square miles in 20 cities, 34 counties, and 12 towns within those counties. (See Appendix D for map of localities with enterprise zones.) Statutory changes in 2005 limited the number of enterprise zones to 30 but allowed existing zones to remain in the program until they expired. This change was made to better target localities with the greatest need and ability to use the zones. Following the legislative changes, the number of enterprise zones in Virginia has been decreasing as older zones expire and should drop to 30 by 2030 unless some zones are renewed.

Enterprise zone is a broad term used to characterize "place-based" policies that offer tax and other economic incentives to encourage growth and development in designated economically distressed areas.

Similar programs have also been implemented by the federal government, such as Empowerment Zones in 1994 and Opportunity Zones in 2017.

Virginia's enterprise zone program was created by the Enterprise Zone Act of 1982. This Act provided income tax credits and a five-year state sales and use tax exemption for new business activity in qualifying areas. The General Assembly made substantive revisions to the program in 1995 and again in 2005 when it converted the tax credits to grants, reduced the number of zones, and reduced the length of time an area can be designated as an enterprise zone to 10 years. Although tax credits that were earned prior to the legislative changes in 2005 could still be claimed after 2005, they are not included in this analysis.

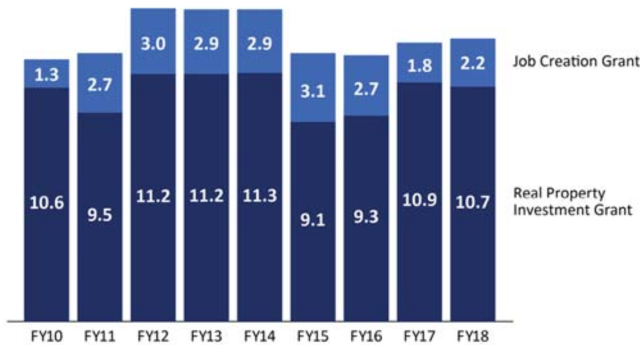
ENTERPRISE ZONE GRANTS

Reduce regional disparity and encourage community revitalization by attracting jobs and investment to distressed areas.

VALUE TO BENEFICIARIES

FY10-18

Grant awards: $116.3M total



Beneficiaries

1,435 Real Property Investment Grant projects

505 Job Creation Grant projects

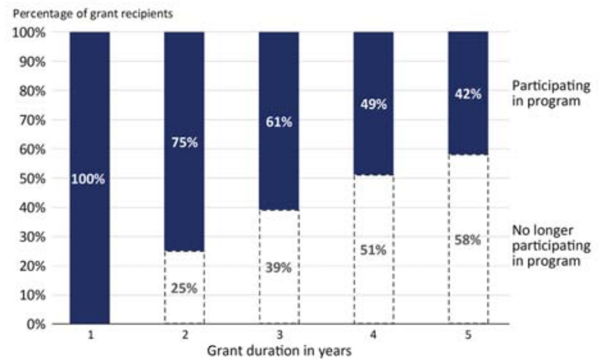
ACHIEVEMENT OF PURPOSE

Real Property Investment Grant has funded-projects that may not contribute to local property values

Funeral home

Storage shed businesses

Many businesses do not receive Job Creation Grant for all five years, suggesting job creation levels are not maintained.



IMPACT TO STATE ECONOMY

FY 10-18

Economic benefit per $1M in grants

Jobs, state GDP, and personal income

Return in revenue

per $1 spent

●●●● High
●●●○ Moderate
●●○○ Low
●○○○ Negligible

Real Property Investment Grant

Job Creation Grant

TABLE 2-1
Virginia's enterprise zone program provides two grants to reduce regional disparity by encouraging economic development in designated areas

	Real Property Investment Grant
Purpose	Reduce regional economic disparity and encourage community revitalization by incentivizing real property investment in designated distressed areas.
Eligibility	Must be private business or person (owner, developer, tenant) that incurs cost of investment in industrial, commercial, or mixed-use properties within boundaries of enterprise zone. Solely residential properties are not eligible. Investment must involve rehabilitation or expansion of existing structure or new construction. Investment must be in real property improvements (improvement to land or structure) and may not include machinery and tools. For rehabilitation/expansion projects, investment must exceed threshold of $100,000; for new construction projects, it must exceed threshold of $200,000. Solar projects allowed to qualify in 2019, with lower thresholds than other projects. Solar only improvements of $50,000 to $100,000 have no threshold. Solar as part of a larger project lowers the threshold by $50,000.
Program features	5-year grant period; limit of 1 award per property. Non-discretionary grant; award is up to 20% of the qualifying investment capped at $100,000 total over the 5-year period. If the total investment is more than $5 million; it is capped at $200,000 total. The amount of investment eligible for the grant is the amount over the threshold, so if a business invests $150,000 for rehabilitating a building, its award is 20% of $50,000 (the amount over the $100,000 threshold).
	Job Creation Grant
Purpose	Reduce regional economic disparity by incentivizing creation of high-wage jobs with benefits in designated distressed areas.
Eligible projects	Businesses located in enterprise zones that create permanent, full-time jobs over a four job threshold. Job creation must be over the base year (either of the two calendar years immediately preceding a business's first year of grant eligibility). Positions must pay at least 175% of the federal minimum wage and cover at least 50% of employees' health insurance premium. This threshold is reduced to 150% if the zone is in a locality with an unemployment rate 1.5 times the state average.
Program features	5-year grant period, but to be eligible, the business must maintain or increase its employment over the base year. Positions eligible for the grant are the ones over the threshold. Non-discretionary cash grant of $500 per job created, per year, if wage is below 200% of federal minimum wage; grant is $800 per job created, per year, if wage is 200% of federal minimum wage or higher. Limited to 350 positions per year. Cannot be used for positions in government or local service industries such as personal services, food and beverage, or retail.

SOURCE: Weldon Cooper Center review of the Code of Virginia and agency documents.
NOTE: Authorized by §§59.1-538 through 59.1-549.

A **competitive process to designate new enterprise zones** cannot be held until zones designated under the 2005 statute, the Enterprise Zone Grant Act, begin to expire. As of January 2016, the governor had designated 30 new enterprise zones—the maximum number of new zones under the new act.

Enterprise zone boundaries and area included must meet certain guidelines. Each zone can have up to three areas that have non-contiguous boundaries. For example, a county may have one enterprise zone that incorporates multiple towns whose boundaries do not touch.

If the zone is in a town or city, it must: have an area of 0.25–1 square miles; be less than 7 percent of the total land area of the locality; or be less than 7 percent of the total population of the locality, whichever is smaller. If the zone is in an unincorporated area of a locality, the land area of the zone can be from 0.5–6 square miles.

As enterprise zone designations expire, DHCD holds a competitive process to designate new enterprise zones, and localities must submit an application to DHCD. DHCD makes recommendations to the governor, who officially makes enterprise zone designations, based on its assessment of the applications. Because the enterprise zone program is targeted to distressed areas, statute requires that three factors combined must be given at least 50 percent weight in making designations:

- the unemployment rate,
- average adjusted gross income, and
- the proportion of school children eligible for free or reduced school lunches.

The remaining portion of the decision is based on DHCD's assessment of other factors reported in the locality's application for zone designation and include

- local strategy for economic development and businesses to target,
- local incentives and the extent they align with local economic development strategy,
- rationale for boundaries selected for zone,
- how enterprise zone fits within community priorities, and
- efforts of the locality to market distressed areas.

If a locality receives an enterprise zone designation, it can put the zone boundaries anywhere it chooses within the locality, as long as the boundaries and the area in the zone meet certain guidelines. Localities with enterprise zones are expected to offer locally funded incentives that complement state incentives. However, localities are not statutorily obligated to provide specific incentives or budget a certain amount. Thus, local incentives can vary greatly among enterprise zones. The most common local incentives are expedited permit processing and fee waivers, tax abatements, and reduction in regulations. A handful of localities offer grants for real property investment or job creation or workforce training, loan, and technical assistance. Localities may offer local incentives to any business in the zone, not just those that qualify for state incentives.

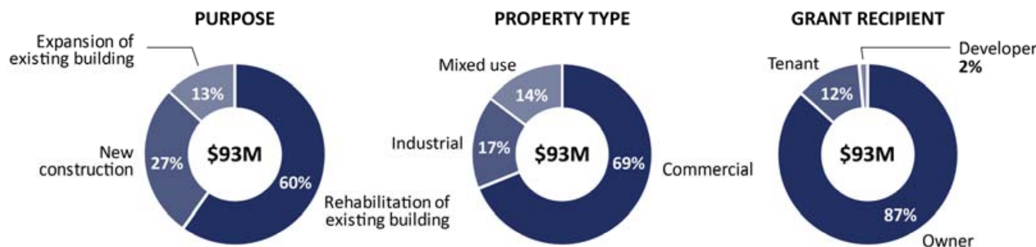
The 2005 statutory changes allowed enterprise zone designations to be renewed for up to two, five-year renewal periods, and 2019 legislation allowed for a third, five-year renewal. These renewals must be granted by the governor, based on recommendations by DHCD. Decisions are based on a locality's performance of its enterprise zone responsibilities (e.g., providing local incentives, submitting timely reports to DHCD, verifying only businesses located in zones are receiving enterprise zone incentives), the continued need for the zone, and its effectiveness in creating jobs and capital investment.

Enterprise zone program awarded $116.2 million in grants to encourage job growth and private investment (FY10–FY18)

Virginia's enterprise zone program awarded $116.2 million in grants between FY10 and FY18. The Real Property Investment Grant is the larger of the two grant programs, awarding $93.7 million ($10.4 million per year, on average). The Job Creation Grant awarded $22.5 million ($2.5 million per year, on average). The Real Property Investment Grant provided 1,435 awards that averaged about $66,000 per award. The Job Creation Grant provided 505 awards that averaged about $45,000 per award.

The businesses that receive awards from each grant program differ. The majority of Real Property Investment Grant awards go to building owners for projects that rehabilitate existing buildings, and the majority of the projects are for commercial rather than industrial properties (Figure 2-1). Unlike most of Virginia's economic development incentive grant programs, most Real Property Investment Grant awards are given to businesses in the real estate and leasing industry sector, with only 10 percent of awards distributed to manufacturers. In contrast, the majority of awards through the Job Creation Grant program go to manufacturers.

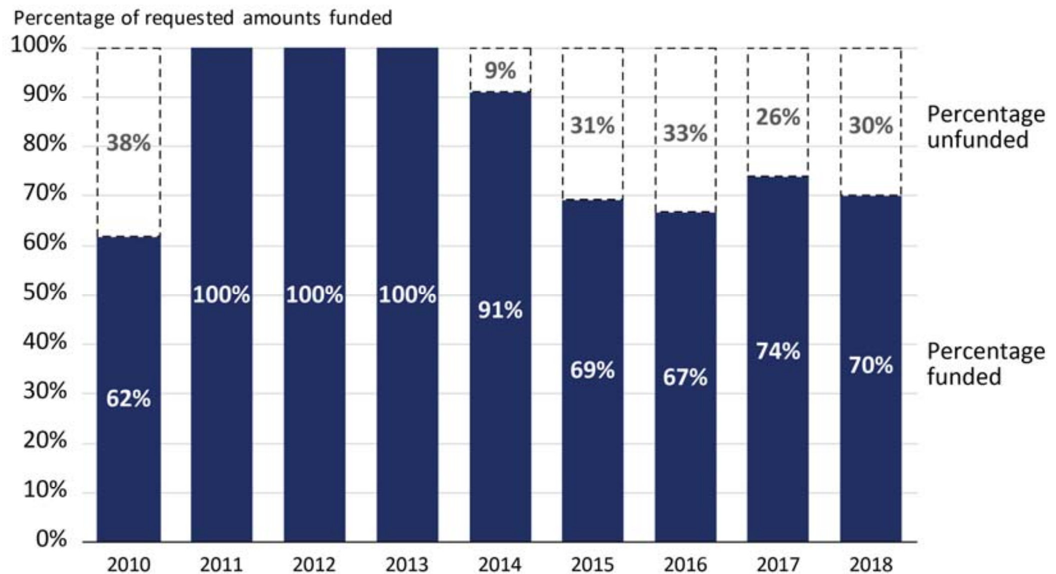
FIGURE 2-1
Real Property Investment Grant awards are predominantly for rehabilitation, commercial, and applicant-owned projects FY10–FY18



SOURCE: Weldon Cooper Center analysis of information from DHCD.
NOTE: Of the owners, 44 percent are occupant owners and 43 percent are non-occupant owners.

Demand for enterprise zone grants exceeded available funding in some years of the study period, particularly for the Real Property Investment Grant. By statute, requests for Job Creation Grants take precedence, and, starting in FY11, this grant has been fully funded. However, the Real Property Investment Grant program was able to fund only 79 percent of the amount requested between FY10 and FY18. Grant requests were fully funded in FY11, FY12, and FY13, but awards were prorated in the other years (Figure 2-2).

FIGURE 2-2
Real Property Investment Grant has only been able to fund the amount requested in three of the years between FY10 and FY18



SOURCE: Weldon Cooper Center analysis of information from DHCD.

The geographic distribution of Real Property Investment Grant and Job Creation Grant awards on a per capita basis differs. (See Appendix H for maps of the distribution of awards.) Real Property Investment Grant awards are more widely dispersed. Higher usage occurs in urban areas, including the cities of Richmond, Roanoke, Lynchburg, Danville, Martinsville, and Petersburg. This pattern occurs because of the high percentage of projects that are commercial or mixed use, which are more abundant in urban areas.

Job Creation Grants are awarded to businesses in fewer localities, and in fact many localities with enterprise zones have no awards. However, some areas such as the tobacco region, have a high concentration of Job Creation Grant awards, including the City of Danville, Wythe County, and Prince Edward County. Isle of Wight County, adjacent to the region, has the highest award amount. This pattern may suggest more active marketing of the program in the region, better opportunity to pair the program with other regional economic incentives such as the Tobacco Region Opportunity Fund, or greater ability to divert projects and jobs from neighboring states into Virginia because of their incentives.

Enterprise zone grants and programs reported as useful, but poor targeting and design characteristics limit their effectiveness

Some evidence suggests that the grants and the enterprise zone program have positive benefits. For example, local economic development staff generally view the enterprise

zone grants as useful and rate them as effective in achieving certain objectives. However, Virginia's zones are not well targeted to the most distressed areas, and program and grant design may limit effectiveness.

Local economic developers generally rate the enterprise zone grants as useful and effective at achieving certain objectives

Local economic development staff responding to a survey for this study generally rated the enterprise zone grants as useful for economic development. Both grants were rated useful on a scale of one (not useful) to four (very useful) by respondents, regardless of whether they had enterprise zones within their localities. The Job Creation Grant received a rating of 3.79, on average, by respondents with enterprise zones and a rating of 3.06, on average, by respondents without them. The Real Property Investment Grant received a rating of 3.71, on average, by respondents with enterprise zones and a rating of 2.85, on average, by respondents without them. Both groups of respondents rated the Job Creation Grant as more useful than the Real Property Investment Grant, perhaps because adjacent localities would still benefit from job creation nearby.

Local economic developers also reported that the enterprise zone program is more effective at accomplishing certain objectives than others. Economic developers with enterprise zones in their localities rated the program as most effective, on average, in improving the overall business climate (ranked first out of 14 objectives), creating new jobs (ranked second), and retaining and expanding existing businesses (ranked third). However, they viewed enterprise zone programs as less effective in removing regulatory barriers, improving infrastructure, and creating job opportunities for economically disadvantaged residents. (See Appendix M for more detail on survey results.)

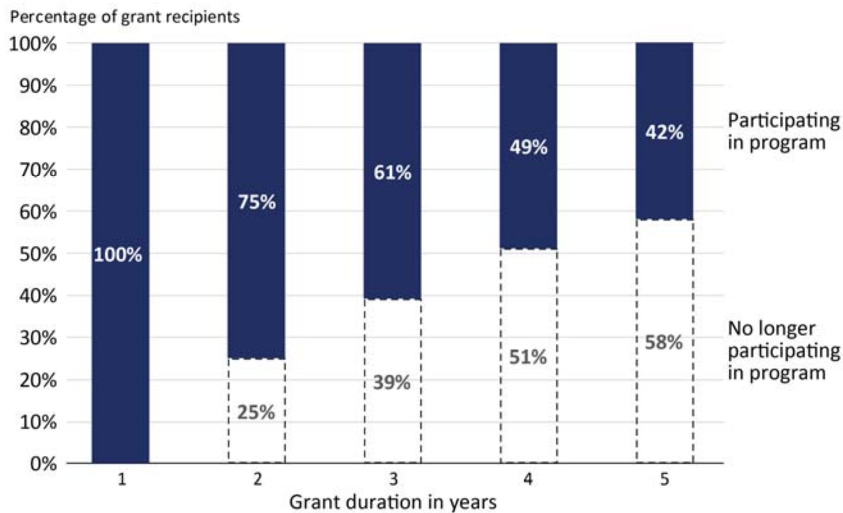
Weldon Cooper Center staff surveyed local economic development staff for each of Virginia's 133 counties and independent cities to assess the importance of incentives to attract businesses, estimate the supply and demand for business ready sites, and assess the importance of various industrial location and expansion factors. The response rate was slightly over 50 percent.

(See Appendix B for more information on the survey and Appendix M for select survey results.)

Many businesses do not receive Job Creation Grant for all five years, suggesting job creation levels are not maintained

Many businesses that receive Job Creation Grants appear to only create jobs temporarily. Businesses are eligible to receive Job Creation Grants for up to five years but only receive funds in each year they maintain or increase their number of employees over a four-job threshold in the base year. Over the five-year period, many businesses stop participating in the program. One-fourth of businesses use the program for only one year, and fewer than half (42 percent) of program users receive grant funding all five years (Figure 2-3).

FIGURE 2-3
Fewer than half of Job Creation Grant recipients participate in the program for all five years (FY10–FY18)



SOURCE: Weldon Cooper Center analysis of information from DHCD.

The reason businesses stop participating in the program is not documented, but it is likely that some do not participate because job creation was not maintained and they were ineligible. Some businesses may have found the application process too burdensome or forgotten to apply even if they maintained the jobs created.

Enterprise zones have little effect on employment, income, and other economic indicators, according to statistical analysis and other research

The geographical areas containing enterprise zones did not show better economic outcomes on employment, income, home price, and free and reduced school lunch eligibility than other similar geographical areas, according to a statistical analysis conducted for this study that controlled for other factors. Overall, the analysis, which involved basic regressions and a variety of quasi-experimental methods, found no evidence of positive effects for enterprise zones as a whole, or for the Job Creation Grant or Real Property Investment Grant programs when assessed separately. (See Appendix O for more detail about the statistical analysis.)

These findings are consistent with the overall findings of previous studies of enterprise zones in Virginia and other states. A 2016 study analyzed the Job Creation Grant, Real Property Investment Grant, and local incentives for enterprise zones separately. The study compared job growth in enterprise zones with comparison areas rather than the rest of the state, but the results were ultimately inconclusive: sometimes job growth in enterprise zones was faster, and sometimes it was slower. Three other studies (in 2000, 2004, and 2020) concluded that Virginia's enterprise zones had no positive impact on employment growth. A recent empirical analysis by Neumark and Young

(2019) found that enterprise zones have generally been "ineffective at reducing urban poverty or improving labor market outcomes in the United States."

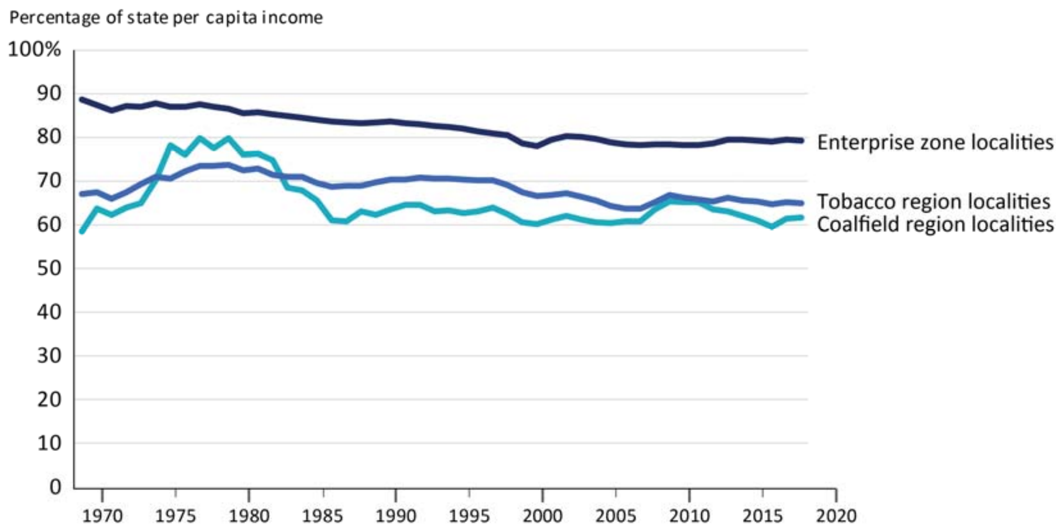
Enterprise zones are not well targeted to the most economically distressed localities, which may limit the program's ability to alleviate regional disparity

Virginia's enterprise zones are located in some localities that would not generally meet criteria for being economically distressed and exclude many localities that would meet the criteria. Since 2000, the per capita income of enterprise zone localities has been about 80 percent of statewide per capita income. In 2018, two localities with enterprise zones exceeded statewide per capita income (Henrico County, 116 percent, and Lancaster County, 104 percent).

Per capita income as a percentage of statewide per capita income has also been substantially higher than the per capita income for the state's other two regional development programs that target distressed areas—the coalfield region and the tobacco region programs (Figure 2-4). Unlike the enterprise zone program, neither of these regions has a locality for which per capita income exceeds statewide per capita income. Fourteen low-income localities (i.e., less than 75 percent of the state average per capita income) are not served by either the enterprise zone, tobacco region, or coalfield region programs, including several localities in the West Central/Shenandoah Valley region of the state.

FIGURE 2-4

Per capita income as a percentage of statewide per capita income has been higher for enterprise zone localities than for other distressed areas over time



SOURCE: Bureau of Economic Analysis, Local Area Personal Income.

Ideally, enterprise zone grant funding would be concentrated in the most economically distressed areas to best reduce disparity. However, grant awards are not concentrated

in the most distressed areas, according to an analysis of awards made between FY10 and FY18. The Job Creation Grant reduces the minimum wage requirements for high unemployment areas to help target more distressed areas. However, in practice it slightly benefits higher-income areas more than distressed areas, according to an analysis of grant awards and per capita income. The Real Property Investment Grant, however, slightly favored economically distressed areas.

Enterprise zone program and grant design may hinder effectiveness

Several characteristics of the enterprise program and the grants may reduce their effectiveness in improving economic conditions in enterprise zones. Even though the state's goal for the program is to reduce regional disparity, localities can draw the lines for the enterprise zone boundaries, meaning that the most distressed areas within the locality may not be in the zone. Both the Real Property Investment Grant and Job Creation Grant are non-discretionary and do not target competitive projects (i.e., economic development projects where businesses are considering sites outside the state for expansion.) Therefore, the program may award business investments that would have occurred without state financial assistance. In addition, property improvements and increased business activity from enterprise zone incentives likely extend to areas outside of the enterprise zones. Jobs created within enterprise zones may benefit workers in nearby localities rather than zone residents, resulting in dispersed effects that limit the positive impact on the community within the zone.

Unlike most other economic development grants, the Real Property Investment Grant does not target high-multiplier, export-base businesses such as manufacturers. This is likely because of its dual purpose of community revitalization. Under the existing program, personal service, retail, and food businesses are eligible for grant awards. Investments in these types of businesses generally displace existing activity rather than generate additional activity. Real Property Investment Grant awards are mostly given to businesses classified as real estate and leasing and only 10 percent of awards is distributed to manufacturers.

In some instances, the Real Property Investment Grant has funded projects that may not contribute positively to local property values, one of the stated aims of the program, according to DHCD staff. For example, address searches revealed that the program provided grants for improvements to an adult book and novelty items store in Richmond, funeral homes in South Boston and Petersburg, and at least 11 storage shed businesses in various locations. There are no eligibility restrictions for the current program that would limit investments from being used for businesses such as payday loan providers, tattoo parlors, strip clubs, pawn shops, and smoke shops. The evidence of the effect of these businesses on nearby property values is mixed, according to several studies.

Economic benefits of Job Creation Grant are moderate, while economic benefits of Real Property Investment Grant are low

The enterprise zone grants are estimated to have generated additional economic activity for the state between FY10 and FY18. Estimates show that each year private sector employment increased by 576 jobs, Virginia GDP increased by $85 million, and statewide personal income increased by $49.8 million, on average, because of the enterprise zone grants (Table 2-2). This analysis only accounts for the economic activity generated because of the state-funded grants and does not account for additional economic activity generated because of locally funded enterprise zone incentives.

The majority of these net impacts are generated by the Real Property Investment Grant because it approves a substantially higher number of awards than the Job Creation Grant. These estimates assume that only a portion (22 percent for the Real Property Investment grant and 1.2 percent for the Job Creation Grant) of the total economic activity generated by the incentivized businesses is attributed to the enterprise zone grants. However, the Job Creation Grant is estimated to generate higher economic benefits when the cost of the grants is taken into account.

Economic impact analysis of expenditures by grant recipients between FY10 and FY18 was conducted using economic modeling software developed by REMI, Inc.

This analysis does not include economic activity generated from any locality-funded enterprise zone incentives.

(See Appendix O [online only] for the economic impact analysis used in this study.)

The economic benefits of the Job Creation Grant are moderate compared with the economic benefits of other incentives, when benefits are assessed per $1 million spent on incentives. In contrast, the economic benefits generated by the Real Property Investment Grant per $1 million spent are low. In fact, the Job Creation Grant generates twice as much Virginia GDP as the Real Property Investment Grant per $1 million in spending on the grants (Table 2-2). (See Appendix C for more detail on the comparison of economic benefits generated by Virginia incentives.)

Both grants have a moderate return in state revenue for every $1 spent on the grants compared with the return in revenue for other Virginia incentives. The return in revenue for the Job Creation and Real Property Investment grants are 44¢ per $1 spent and 34¢ per $1 spent, respectively. This analysis only accounts for the return in state revenue and does not account for any additional local tax revenue that may occur because of property improvements and other activity that may increase local property taxes.

Net impact is the increase in economic activity induced by the incentive after adjusting for the opportunity cost of increasing taxes to pay for the grants.

(See Appendix P [online only] for information on the total economic impact and the opportunity cost of increasing taxes.)

When compared with just grants—which tend to have higher economic benefits and returns in revenue than other types of incentives—the economic benefits and returns in revenue for both enterprise zone grants are low. As indicated above, the Real Property Investment Grant is not well targeted to businesses with high economic impacts. The Job Creation Grant is better targeted, but businesses are required only to create at least five new jobs to receive the grant, a minimum threshold which is smaller than many other programs. Further, most recipients do not maintain the new positions for the full five years of the program.

TABLE 2-2
Economic benefits of the Job Creation Grant are moderate, but economic benefits are low for the Real Property Investment Grant (FY10–FY18)

	Annual average FY10–FY18		
	Job Creation Grant	**Real Property Investment Grant**	**Enterprise zone grants (combined)**
Net impact to Virginia economy			
Private employment	150 jobs	426 jobs	576 jobs
Virginia GDP	$28.5M	$56.6M	$85.0M
Personal income	$13.7M	$36.1M	$49.8M
Impact to Virginia economy per $1 million of grants			
Private employment	68 jobs	49 jobs	53 jobs
Virginia GDP	$12.4M	$6.5M	$7.6M
Personal income	$6.3M	$4.3M	$4.7M
Impact to state revenue			
Total revenue	$1.1M	$3.5M	$4.6M
Grant awards	$2.5M	$10.4M	$12.9M
Revenue net of awards	($1.4M)	($6.9M)	($8.3M)
Return in revenue	44¢ for every $1 spent	34¢ for every $1 spent	36¢ for every $1 spent

SOURCE: Weldon Cooper Center economic impact analysis of the economic activity of completed grant projects (FY10–FY18) that were induced by incentives.
NOTE: Includes direct, indirect, and induced impacts. Assumes that 22 percent of the economic activity from Real Property Investment Grant projects and 1.2 percent of the economic activity from Job Creation Grant projects are attributable to the grants. Gross impact on Virginia's economy is used to calculate impact per $1 million in incentive awards. This is consistent with how the economic development research literature typically calculates these impacts. (See Appendix P [online only] for detailed results on total impact of the grants, impact of raising income taxes by the amount of the grants [opportunity cost], and revenue generated by source.) Numbers may not sum because of rounding.

Several changes could improve the effectiveness and economic benefits of Virginia's enterprise program and grants

There are several actions that could improve the effectiveness and the economic benefits of Virginia's enterprise zone program and grants. Still, the extent to which Virginia's enterprise zone program and grants can spur economic growth and reduce regional disparity are likely limited, according to analysis for this report and other research. Alternatively, Virginia could choose to eliminate its enterprise zone program like several other states (Arkansas, Arizona, California, Florida, and Kentucky) that repealed their programs either as direct responses to negative reports about the effectiveness of the programs or because of broad budget reduction efforts. In fact, recent research suggests that state policymakers should consider abandoning enterprise zone programs as "we have done them in the past" to focus on (1) policies that target a broader labor market area rather than neighborhoods or (2) incentives that are "people-based" (based on individual characteristics) rather than "place-based" (Neumark 2020).

DHCD cannot hold a **competitive process to designate new enterprise zones** until 2024 at the earliest because of the Code's maximum limit of 30 zones. Five zones designated under the new act will expire in 2024, unless they are renewed for a third five-year designation.

Enterprise zones should better target economically distressed localities

DHCD should better target economically distressed localities through its competitive process to designate new enterprise zones. This may help to more effectively address

regional disparities, which is the intent of the program. By statute, at least 50 percent of the decision to designate an enterprise zone must be based on factors indicating distress. Other factors considered may favor localities with greater planning capacity and resources for developing zone applications but that do not meet criteria for economic distress. To address this, DHCD should revise how it weights factors considered in zone designation. Currently, 750 points out of 1,500 points are awarded based on the three distress factors, with 750 points awarded based on factors other than distress. Local economic development strategy is given the most weight (maximum score of 300) followed by local enterprise zone incentives and zone boundaries (150 points each). DHCD could give more weight to the three distress factors and local enterprise incentives.

Enterprise zone designations can be renewed for up to three, five-year periods for designations made in 2005 and after and for one five-year period for designations made before 2005.

DHCD should also modify the enterprise zone renewal process to ensure that renewals go to areas that continue to have high levels of economic distress. The current renewal process does not encourage "graduation" from the program for areas that achieve and maintain stronger economic conditions, which prevents new localities that may have higher levels of distress from entering the program. For an enterprise zone to be considered for renewal, localities must submit to DHCD information on the area conditions, the continued need for the enterprise zone, the zone's long-term effectiveness in creating jobs and capital investment, and the locality's long-term performance of enterprise zone responsibilities. Enterprise zone designations are renewed if required information is provided, and no zones have been taken out early, according to DHCD staff. DHCD should revise criteria used for renewal of enterprise zone designations and identification of localities that should exit the program. This process could allow enterprise zones that have achieved stronger economic conditions to be renewed but limit subsequent renewals if the strong economic conditions are maintained.

Ultimately, results or scores of the designation and renewal assessments should be made publicly available. Making this information publicly available would increase program transparency and improve future evaluations of the incentives' effectiveness and economic impacts.

RECOMMENDATION 3

The Department of Housing and Community Development should review and revise the process for designating and renewing enterprise zones to ensure that the enterprise zone program targets distressed areas in the state.

Real Property Investment Program should be canceled or revised to target investments likely to have higher economic benefits

Consideration should be given to canceling the Real Property Investment Program. It is among the state's 10 largest incentives in terms of spending (ranked 7th between FY10 and FY18). (See *Economic Development Incentives* 2019, JLARC, 2019.) However, a review of the literature and additional original empirical analysis for this report suggest that the grant is unlikely to have measurable effects on local or statewide economic

activity. An economic impact analysis for the Real Property Investment Grant shows some positive impacts, but the economic benefits generated by the grant are significantly smaller than other economic incentive grant programs because it is not well targeted to businesses expected to have high economic benefits.

The need for a state real estate investment program is also lessened by the creation of a federal real estate investment incentive for economically distressed communities in 2017. The Opportunity Zone program provides capital gain tax deferrals and waivers based on length of time investments remain in the zones. Most of the state's localities with enterprise zones also have Opportunity Zone designations, though zone boundaries may not overlap.

POLICY OPTION 1

The General Assembly could consider eliminating the Real Property Investment Grant by repealing § 59.1-548 of the Code of Virginia.

Policy options for consideration. Staff typically propose policy options rather than make recommendations when (i) the action is a policy judgment best made by elected officials—especially the General Assembly, (ii) evidence suggests action could potentially be beneficial, or (iii) a report finding could be addressed in multiple ways.

If the General Assembly continues the Real Property Investment Grant, the program should better target projects likely to have a high economic impact. Awards should support property investments for industrial projects in higher multiplier, export-base industries. Better targeting the grants to these businesses would increase the economic activity generated by the grant. Awards could also support commercial and mixed-use properties if they are likely to have substantial local benefits, such as projects to develop grocery stores in food deserts or community facilities, or projects that would further the revitalization strategies outlined in the locality's community development plans. Better targeting the grants to these businesses would likely increase the local benefits generated by the grant. The program should not target commercial and mixed uses that likely result in substantial displacement of other economic activity and little net new economic activity. Better targeting the grant would also reduce the number of eligible applicants substantially, improving the ability to fund grant applicants at full value without the need for proration or additional legislative appropriations.

RECOMMENDATION 4

If the General Assembly decides to maintain the Real Property Investment Grant, it may wish to consider amending § 59.1-548 of the Code of Virginia to restrict awards to projects in higher multiplier, export-base industries or to projects that would contribute to community revitalization.

Job Creation Grant should be modified to better incentivize long-term job creation

The General Assembly should consider modifying the Job Creation Grant to better incentivize long-term job creation. The additional economic activity generated by new jobs erodes when the jobs are not sustained. A significant amount of Job Creation Grant awards are made to businesses that create jobs for a short period of time, with

fewer than half of businesses receiving the grant for the full five years, and 25 percent receiving the grant for only one year.

DHCD should assess how it might best incentivize long-term job creation and retention. Several methods could be considered, including

- increasing reimbursement rates for job retention in later years of the program;
- withholding job creation and maintenance payments until the fifth year of the program; and
- creating performance agreements with recapture provisions or disqualifying businesses from future participation if they do not maintain program participation for the full five years.

DHCD should also assess the downsides of these methods, some of which may be significant, because they would increase program complexity and administrative burden for businesses. DHCD should report the findings of its assessment and report options for better incentivizing long-term job creation to the governor and General Assembly.

RECOMMENDATION 5

The Department of Housing and Community Development (DHCD) should determine how to best incentivize long-term job creation and retention through the Job Creation Grant. DHCD should report on its proposal to the governor and the chairs of the House Appropriations and Senate Finance & Appropriations Committees no later than November 1, 2021.

DHCD should automate wage collection data from Job Creation Grant applicants to improve performance reporting and evaluation

DHCD should automate the collection of wage data from Job Creation Grant applicants so this information is available electronically for performance reporting and evaluation. DHCD currently collects detailed wage information on new employees from businesses applying for the Job Creation Grant. This information is used to verify that employees meet the full-time position status, wage levels for one of the two award tiers, and health benefit requirements. However, the collection of this information is not standardized and not uniformly available in one format. Instead, the information is collected in spreadsheets or other formats, such as a word processing document or PDF. This prevents DHCD from reporting average wage information for performance reporting like many other agencies do. The current application process should be modified to either uniformly collect spreadsheets in a standard format from applicants, or require applicants to submit the wage information online. This would enable average wage information for the grant to be included in future JLARC economic incentive reports and would increase the precision of economic impact evaluations.

RECOMMENDATION 6
The Department of Housing and Community Development should automate and standardize the collection of wage data from all Job Creation Grant applicants.

3. Tobacco Region Incentives

Virginia's Tobacco Region Revitalization Commission was created to help revitalize communities that were impacted by declines in tobacco production. Two of the commission's programs, the Tobacco Region Opportunity Fund (TROF) and the Megasite Program, provide grants to help attract businesses to locate or expand in the 40 counties and cities in Southern and Southwest Virginia that make up the tobacco region (Appendix D). While the Tobacco Commission administers several other programs designed to help revitalize the tobacco region, these programs are not specifically focused on business attraction and expansion.

The **Tobacco Region Revitalization Commission** (a 28-member body, 10 of which are legislators) was established by the General Assembly in 1999 to help tobacco growers affected by regulatory changes transition from tobacco cultivation to other agricultural products and to promote economic development in the region. Half of Virginia's portion of the Tobacco Master Settlement Agreement is used to fund the commission and its programs.

The TROF program was created by the commission in 2001 to provide performance-based grants or loans for business locations or expansions in the region that result in new jobs and capital investment (Table 3-1). The program is designed to support the Tobacco Commission's goal to "develop a diverse economy in Southern and Southwest Virginia." The majority of assistance is provided through grants to industrial projects expected to create jobs, though loans can also be provided.

Loans are also available from the TROF program. Most awards during the study period were grants; therefore this evaluation focuses on grants.

The Megasite Program was created by the commission in FY11 and provides grants to local governments or local or regional entities, such as an industrial development authority, to create large industrial sites in the region. The Tobacco Commission created the grant program because it had identified a lack of business site inventory in the region, and it believed high impact, transformative projects should be pursued to improve the region's economic development. The grants are used to make these sites as infrastructure ready as possible, which has become a key element to attract businesses. For example, grants could be used for site acquisition, zoning and other permitting costs, infrastructure development, and other necessary costs to shorten the timeframe within which a private industrial project could be open for business.

The megasite grants are not a direct incentive to businesses, but they benefit prospective companies because they enable localities or regional authorities to offer industrial site acreage at a free or discounted price. The cost of parcels in the industrial park are negotiated on a case-by-case basis, according to local and regional staff. Many communities offer the parcels below market and development costs or free-of-charge, depending on project characteristics and other aspects of the local incentive package.

A **megasite** is an industrial site of at least 1,000 acres.

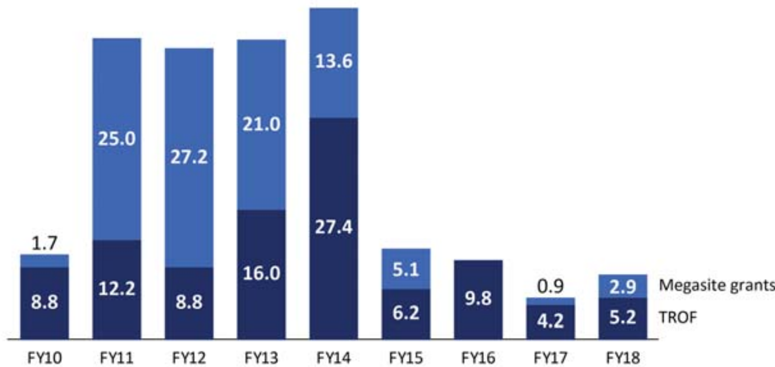
TOBACCO REGION INCENTIVES

Encourage business growth in the tobacco region

VALUE TO BENEFICIARIES

FY10-18

Grant awards: $195.8M total



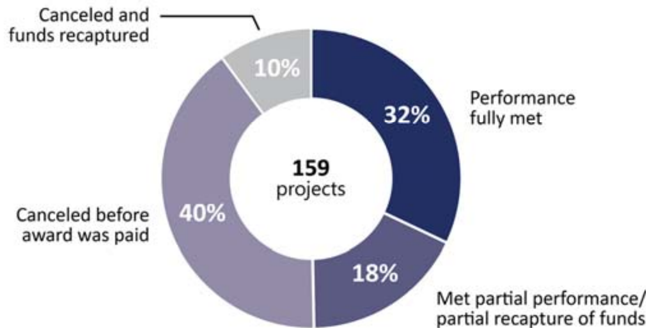
Beneficiaries

197 TROF projects

9 megasite projects

ACHIEVEMENT OF PURPOSE

A high percentage of TROF projects are canceled or face recapture



Only 2 sites funded by megasite grants have tenants and full build out will likely take decades

IMPACT TO STATE ECONOMY

FY 10-18

Economic benefit per $1M in grants

Jobs, state GDP, and personal income

Return in revenue

per $1 spent

TROF

Megasite grant

●●●● High
●●●○ Moderate
●●○○ Low
●○○○ Negligible

TABLE 3-1
Tobacco Region Revitalization Commission provides two incentives to encourage business growth in the tobacco region

	Tobacco Region Opportunity Fund
Purpose	Attract job creation and capital investment through business attraction and expansion in Southern and Southwest Virginia to revitalize and diversify the economy.
Eligible projects	Must make minimum private capital investment of $1 million and create at least 10 jobs within 36 months and pay weighted average salary equal to or above the locality's annual average wage. Must be in an economic sector approved by the commission (generally export-base or tradable sectors rather than local services such as retail, food services, and personal services). Must have matching funds (50-50 match) from the locality or other source and resolution of support from the locality. Matching funds cannot come from another Tobacco Commission program. Must have realistic alternative to locate outside of the tobacco region (evidenced by use of a site selection consultant) or have demonstrated need for financing to fill a funding gap.
Program features	Minimum awards of $10,000. Executive director can approve grant or loan requests of less than $1 million; TROF committee (3 member committee) must approve grant or loan requests of $1 million to $3 million unless committee cannot convene within 10 days of application. Tobacco Commission must approve amounts above $3 million. Recommended funding amount for each project determined using a formula based on (1) locality's unemployment rate, (2) number of expected new jobs, (3) number of jobs saved when relevant, (4) capital investment, (5) average wage for new/retained jobs, (6) employment multiplier of the industry, (7) Virginia Department of Housing and Community Development fiscal distress index score of locality, and (8) estimated income and sales tax revenue to be generated. Grant requests are initiated by the host locality. Awards are provided to the locality to disburse to the project. Recapture of funds, in full or in part, if performance targets are not met.
	Tobacco Region Megasite Program
Purpose	Develop large, business-ready and publicly owned industrial sites across the tobacco region to attract major job-creating and investment projects.
Eligible projects	Industrial sites located in the tobacco region that meet the criteria of a major employment and investment project (can support the creation of at least 400 new full-time jobs and new private capital investment of at least $250 million) and are expected to have measurable and transformative direct and indirect economic impacts for the region.
Program features	Local government or local or regional industrial development authority that is developing the industrial park must apply for grant. Must have non-commission financial support, including a local match of 50 percent.

SOURCE: Weldon Cooper Center review of the Code of Virginia and agency documents.
NOTE: Authorized by §§ 3.2-3103 and 3.2-3108. Local match was initially 10 percent, but increased to 50 percent in 2015.

Virginia is the only state to have economic development incentive programs that exclusively benefit a specific region like the Tobacco Commission, TROF, and megasite

The **Tobacco Trust Fund Commission** is a state commission that provides transitional funding to tobacco-dependent communities in North Carolina.

The **Golden LEAF Foundation** is a nonprofit organization that provides funding to tobacco-dependent areas as well as other economically distressed or rural localities in North Carolina.

programs. States have largely relied on enterprise zone programs or incentives that favor investment in rural areas as tools for mitigating regional inequalities. These programs, however, typically do not focus on large contiguous regions such as the tobacco region. The closest examples to Virginia's Tobacco Commission are the Tobacco Trust Fund Commission (TTFC) and Golden LEAF Foundation in North Carolina, both of which were established in 2000 with funding from the state's Master Settlement Agreement with large tobacco manufacturers. Neither program provides business incentives for industrial location and expansion, but the TTFC has programs similar to other programs established by Virginia's Tobacco Commission. A few states have set-aside revenues from coal-related taxes or other sources to fund regional diversification or mitigate economic and fiscal impacts of mining activities. These programs focus on general investments in public infrastructure and services to support economic development rather than cash incentives for business attraction and expansion.

Tobacco Commission spent $196 million on the TROF and megasite grant programs between FY10 and FY18

Other Tobacco Commission programs include the Agribusiness Program, Education Program, R&D Program, Southside Development Program, Southwest Development Program, and Special Projects Program. The Megasite grant is part of the Special Projects Program.

The Tobacco Commission spent $196 million on the TROF and megasite grant programs between FY10 and FY18, representing approximately 31 percent of the commission's total spending ($785 million) for all of its programs. In total, the Tobacco Commission approved $153 million in TROF grants to 277 projects during the study period (an average of $17 million in awards and 31 projects annually). However, the commission actually spent only $98.7 million in TROF grants. Because of project cancelations or underperformance, some funding was never paid out or was returned.

The majority of the total TROF amount awarded went to manufacturers (39 percent) and utilities (20 percent), with the remainder distributed widely across other sectors. The third-largest industry sector (construction) to receive TROF funding received only 7 percent of awards. All but four localities within the tobacco region received TROF funding, with Greensville, Halifax, Henry, and Mecklenburg counties receiving the largest funding on a per capita basis. (See Appendix I.)

Smaller sites are generally classified as **super sites** (500-999 acres), **large sites** (250-499), and **general industrial sites** (50-249).

The Tobacco Commission awarded $97.3 million in megasite grants to localities or industrial development authorities to help them prepare nine industrial sites in the tobacco region to be ready for business construction (Table 3-2). These sites include four megasites, one super site, two large sites, and two general industrial sites. Collectively, they encompass over 8,000 acres. Although some are technically not "megasites," they all meet Virginia's definition of a major employment and investment project. Seven of the sites are at least partly available for business occupancy, and most have at least some sites that are cleared, graded, and construction-ready.

TABLE 3-2
Tobacco Commission megasite program spent $97.3 million on nine industrial sites in the tobacco region

Name	Locality	Acres	Site type	Year opened	Grant funding
Mid-Atlantic Advanced Manufacturing Center (MAMaC)	Greensville	1,600	Megasite	2017	$25.3M
Southern Virginia Megasite at Berry Hill	Pittsylvania	3,528	Megasite	2017	16.6
Commonwealth Crossing Business Centre	Henry	720	Super	2012	16.2
Wildwood Commerce Park	Carroll	273	Large	2016	13.7
Sussex County Megasite	Sussex	1,130	Megasite	2018	10.2
Pathway Park	Smyth	70	General	2013	4.8
Oak Park Center for Business and Industry	Washington	302	Large	2016	4.7
Progress Park	Wythe	200	Megasite	TBD	3.0
Russell County Park	Russell	232	General	2021 (est.)	2.9
All sites		**8,055**			**$97.3M**

SOURCE: Weldon Cooper staff review of Tobacco Commission documents and local economic development department documents and interviews.
NOTE: Megasite grant funding was awarded for developing a 200-acre lot within Progress Park. Progress Park in its entirety encompasses 1,210 acres.

TROF has been unable to achieve goals

The Tobacco Commission's strategic plan states that the goals of TROF are increasing local employment, the local average wage, and capital assets, and supporting the revitalization goals of the Tobacco Commission. TROF has experienced low attainment of project specific job creation and capital investment goals, and a high percentage of projects did not materialize. Further analysis did not indicate the program has had a positive effect on revitalization, although labor market conditions in the tobacco region have improved in recent years because national business expansion trickled down to many rural and economically distressed areas. (See Appendix O for a description of the analysis.)

The **scale** estimating the amount of economic activity attributed to an incentive is based on the incentive amount as a percentage of the business's new or expanded operations over a 20-year period. The estimate is based on costs and does not account for other factors that may influence a business's location or expansion decisions. See Appendix O [online only] for more detail on the difficulty of precisely estimating incentives' effects and the methodology used in this report.

TROF likely influences only small percentage of business decisions

TROF grants likely sway only a small percentage of business decisions to locate or expand in the region. The grants typically represent a small fraction (0.62 percent) of the total cost of the new operations for the businesses that received grants. This low percentage is expected to induce 6 percent of the economic activity of the TROF projects, according to a scale developed by a leading researcher of incentives (Bartik 2018).

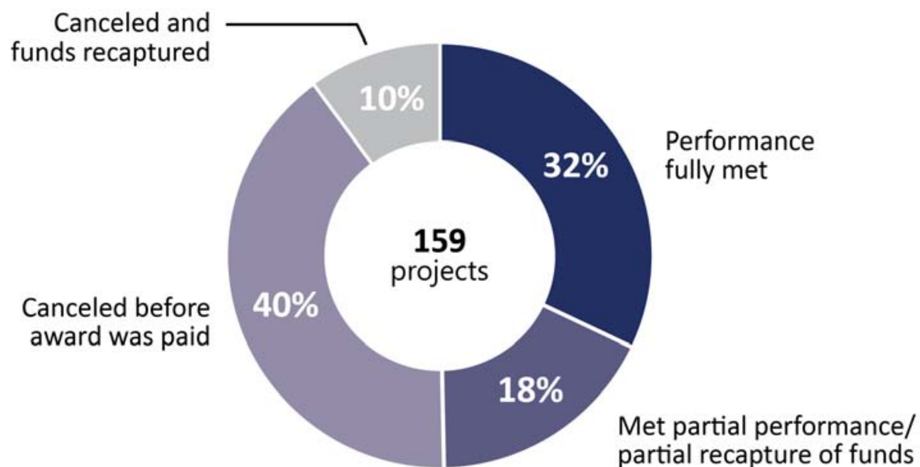
TROF has experienced low attainment of project specific performance goals

The TROF program has experienced relatively low attainment of project-specific performance goals. (See *Economic Development Incentives 2019*, JLARC, 2019.) Only 29 percent of 159 completed projects (including those that did not perform) between FY10 and FY18 met job creation goals, and 41 percent met average wage goals. (Completed projects include those whose grant performance period had ended during the time period analyzed.) The achievement rates for job creation and average wage goals are similar to the average achievement rates for grant programs overall. However, the achievement rate for capital investment goals and the achievement rate for all goals is substantially lower.

A high percentage of TROF projects are canceled, but funds are recaptured or not disbursed

A high percentage of TROF projects are canceled or do not achieve their project-specific goals, which led to all or a portion of awards being recaptured for some projects. Of the 159 completed projects, 50 percent (80 projects) did not materialize, and awards were not disbursed or were fully recaptured (Figure 3-1). These projects represented 58 percent of the total amount awarded. Another 18 percent (28 projects) of projects met only some performance measures and returned some awarded funds to the Tobacco Commission. Only 32 percent (51 projects) of projects achieved all performance expectations. These results suggest insufficient due diligence, pressure to deliver premature project announcements, or other defects in the project screening and award process.

FIGURE 3-1
Fifty percent of TROF projects did not materialize and funds were not disbursed or were recaptured



SOURCE: Weldon Cooper analysis of information reported by TROF and VEC employment data.
NOTE: Data limitations may explain why job creation figures could not be confirmed for some projects (See explanations in Appendix B).

Despite spending more than $90 million, only two sites funded by megasite grants have tenants and full build out will take decades

Interviews with local staff revealed that even though seven of the funded industrial sites are considered business-ready, only two have tenants.

- **Commonwealth Crossing**: Press Glass, a major European glass manufacturer, is expected to open a 280,000-square-foot manufacturing facility in 2020, creating 212 jobs and $43.6 million in capital investment. The Commonwealth Centre for Advanced Training (CCAT), a training center, is the only other tenant at this time. It is owned by the local economic development commission and Henry County and has 15 staff. The center provides training space for companies at the park.
- **Oak Park**: Blue Ridge Beverage, a wholesale beverage distribution company, acquired a lot with a 15.1-acre padded (cleared and graded) site. It started production in 2014 with 48 jobs and $4.8 million in capital investment.

Interviews with local economic development staff or county administrators were conducted to obtain information on megasite grant projects. Unlike the TROF program, industrial sites that receive megasite grant funding do not have specific job creation or capital investment goals to achieve in return for the funding. Localities are required to report little information about site progress to the Tobacco Commission.

Two additional business-ready sites have had prospects but have yet to secure a tenant.

- **Berry Hill**: considered by several companies, including Enviva, a wood pellet manufacturer, and Dominion Energy for a proposed gas turbine power plant. The Enviva project has been canceled.
- **MAMaC**: considered by several foreign automobile makers and was a finalist in both Volkswagen's and Volvo's plant site selection process. In each case, workforce availability concerns and larger incentives offered by competing states played a role in businesses choosing other locations.

Two sites are not yet considered business ready. One is an addition to Progress Park funded by Tobacco Commission funds (the remainder of this park is business ready and has tenants). Russell County Park will not be considered business ready until 2021.

Industrial parks funded by megasite program may accommodate 4,400 workers after 10 years and 22,000 at full build out

Although only two of the industrial parks funded by the megasite program currently have tenants, it is projected that the megasites will collectively experience 18 percent occupancy by 2029 and employ 4,406 workers. At full buildout, the parks are estimated to be able to accommodate 21,910 workers. However, full buildout is expected to take several decades and will be dependent on economic conditions. In addition, only half of the estimated park employment is likely to be "net new" employment for the state, with the other half representing relocated employees from elsewhere in the region or the state. (See Appendix O [online only] for the methodology to estimate future park employment.)

Limitations of industrial sites funded by megasite program will likely affect program's economic benefit

To ensure **workforce access of potential locations,** companies look for locations with an existing workforce 1,000% greater than the number of new jobs to be created by the project. Berry Hill, if fully built out at 10,000 employees, would need a labor pool of about 1 million, which is twice as high as the working-age population within 60 miles of the tobacco region's megasites, on average.

The tobacco region megasites have significant limitations when compared with megasites around the country that will affect their ability to attract businesses. The Tobacco Commission megasites have much more limited workforce access (i.e., population aged 18-64), particularly workers residing within 30 miles of the park (Table 3-3). Expanding to 60 miles improves the size of the workforce significantly, but it still lags behind the national benchmark. Educational attainment levels of county residents in the tobacco region are also significantly lower than average megasites around the country. Many of these limitations were pointed out in a study by a consultant in the early 2000s to help the Tobacco Commission identify a megasite to attract a foreign automobile manufacturer. The study examined 19 sites and found none were ideal. Even the best site (Sussex) still had substantial limitations.

TABLE 3-3
Tobacco Commission megasites lag national megasites in workforce availability but are similar in terms of interstate and rail access

Characteristics (averages)	Megasites nationally	Tobacco region megasites
Working-age population within 30 miles	125,681	35,065
Working-age population within 60 miles	573,042	402,058
Percentage of college-educated residents	21.5%	12.9%
USDA topography scale	5.6	8.5
USA urban-rural continuum scale	3.2	4.3
Megasite acreage	2,163	1,865
Percentage with interstate access	70.0%	75.0%
Percentage with rail access	93.2%	100.0%
Percentage with commercial air access	22.1%	0.0%

SOURCE: Weldon Cooper Center analysis of Virginia data and megasite information provided in Site Selection magazine.
NOTE: Only sites of at least 1,000 acres are included (190 megasites nationally, and four Tobacco Commission megasites). USDA, ERS land surface topography scale (1=flat plains,...,21= high mountains). USDA, ERS urban-rural continuum scale (1=highly urban,...,9 highly rural).

Tobacco Commission-funded megasites also lag megasites nationally on other features. The topography of Tobacco Commission megasites is more varied, likely making the costs of construction, such as grading, roads, and stormwater infrastructure, more expensive than national competitors. Further, none of the four Tobacco Commission megasites has a commercial airport within the locality, although they generally have similar interstate and mainline rail access as national competitors.

Tobacco Commission megasites have generally not focused on recruiting a key anchor tenant during park development that will attract supply chain businesses. The Urban Land Institute's *Business Park and Industrial Development Handbook* recommends targeting a high-quality company at the beginning of park development to enhance the image of the park and support a cluster-based strategy to attract related firms. Progress Park and Oak Park have attracted heterogeneous firms in manufacturing and distribution with no industry theme. Commonwealth Crossing has attracted Press Glass, a major European glass manufacturer, and Berry Hill announced an agreement with Enviva, a wood pellet manufacturer (the project was later canceled). However, these businesses do not have extensive supply chains like an equipment or electronic manufacturer would require.

Economic benefits and returns in revenue are moderate for TROF but low for the megasite grant

Both the TROF and megasite programs generate additional activity for the Virginia economy (Table 3-4). As expected, TROF generates more additional jobs, state GDP, and income than the megasite grant because the industrial parks funded by the megasite program only have two tenants to date.

Economic impact analysis of expenditures by incentive recipients was conducted using economic modeling software developed by REMI, Inc.

(See Appendix O [online only] for the economic impact analysis used in this study.)

TROF program has moderate economic benefit and moderate return in state revenue

The TROF program is estimated to have generated additional economic activity for the state between FY10 and FY18. Estimates show that each year private-sector employment increased by 238 jobs, Virginia GDP increased by $40 million, and statewide personal income increased by $22 million, on average, because of TROF (Table 3-4). These estimates assume that 6 percent of total economic activity generated by the incentivized projects is attributed to the grant.

Net impact is the increase in economic activity induced by the incentive after adjusting for the opportunity cost of increasing taxes to pay for the incentive.

(See Appendix P [online only] for information on the total economic impact and the opportunity cost of increasing taxes.)

This economic benefit is moderate when assessed per $1 million spent on the grant and compared with the economic benefits of other incentives. (See Appendix C for more detail on the comparison of economic benefits generated by Virginia incentives.) TROF is estimated to generate $11 million in Virginia GDP per $1 million spent, which is higher than the estimated additional Virginia GDP ($5 million) per $1 million spent on average for all Virginia incentives. TROF also has a moderate return in state revenue of 40¢ for every $1 spent on the grant. This return is higher than the average return in revenue (19¢) for all Virginia incentives. (See *Economic Development Incentives 2018*, JLARC 2018.)

TABLE 3-4
Economic benefits and returns in revenue are moderate for TROF but low for the megasite grant

	Annual average	
	TROF (FY10–FY18)	**Megasite grant (FY08–FY18)**
Net impact to Virginia economy		
Private employment	238 jobs	66 jobs
Virginia GDP	$40.4 M	$10.7 M
Personal income	$22.5 M	$7.0 M
Impact to Virginia economy per $1 million of grants		
Private employment	69 jobs	15 jobs
Virginia GDP	$11.4 M	$2.3 M
Personal income	$6.5 M	$1.7 M
Impact to state revenue		
Total revenue	$1.6 M	$0.7 M
Grant awards	$4.0 M	$8.8 M
Revenue net of awards	($2.4 M)	($8.1 M)
Return in revenue	40¢ for every $1 spent	8¢ for every $1 spent

SOURCE: Weldon Cooper Center economic impact analysis of projects that received awards during the period.
NOTE: Includes direct, indirect, and induced impacts. Assumes 6 percent of economic activity from TROF projects were attributable to the grant. Gross impact on Virginia's economy is used to calculate impact per $1 million in incentive awards. This is consistent with how the economic development research literature typically calculates these impacts. (See Appendix P [online only] for detailed results on total impact of the grants, impact of raising income taxes by the amount of the grants [opportunity cost], and revenue generated by source.) Economic benefits of the megasite program start in FY08 because some match funding for site development, which was included in the analysis, occurred as early as FY08.

Grants, on average, are estimated to generate an additional 94 jobs, $15 million in Virginia GDP, and $9 million in personal income per $1 million spent and have a return in revenue of 55¢ per $1 spent. (See *Economic Development Incentives 2018*, JLARC 2018.)

TROF's economic benefits and return in revenue are moderate even through the program influences only a small percentage of business decisions and a high percentage of TROF projects are canceled. This is because TROF grants are also moderately well targeted to projects in industries that have a higher economic impact. Approximately 64 percent of awards were made to projects in export-base industries, and 55 percent are made to projects in industries with high multipliers. Approximately one-third of projects and award amounts are in state-designated industry clusters, which is about the same rate as all economic development incentive grants, on average.

TROF's economic benefits and return in revenue, however, are lower than the estimated amounts for Virginia *grants*, on average. Poor performance of early projects contributed to lower economic benefits and return on revenue. Most projects awarded TROF grants at the beginning of the period studied (between FY10 and FY13) either failed to materialize or took longer than the 36-month period established in program guidelines to meet their performance goals. In fact, most (84 percent) TROF projects took longer than 36-months to achieve their goals.

Megasite program has low economic benefit and return in state revenue

The megasite program was estimated to generate additional economic activity for the state between FY10 and FY18. Estimates show that each year private-sector employment increased by 66 jobs, Virginia GDP increased by $11 million, and statewide personal income increased by $7 million, on average, because of the megasite grant (Table 3-4). This economic benefit is low, when assessed per $1 million spent on the grant and compared with the economic benefits of other incentives. (See Appendix C for more detail on the comparison of economic benefits generated by Virginia incentives.) The megasite program is estimated to generate only $2 million in Virginia GDP per $1 million in spending on the grant during the period studied compared with the average $5 million in additional Virginia GDP generated per $1 million spent on Virginia incentives. The megasite program is also estimated to have a low return in revenue of 8¢ for every $1 spent on the grant, which is also lower than the average return in revenue (19¢) for Virginia incentives. (See *Economic Development Incentives 2018*, JLARC 2018.)

The economic benefits and the return in revenue are the lowest compared with the economic benefits of other economic development incentive grants that have been assessed so far in this series. Both are low because only two of the industrial sites are occupied by one employer each. Megasite developments by nature are risky investments because, under most circumstances, it takes years to develop the site and attract a company to locate there. Therefore, the economic benefits of the megasite, beyond activity generated from constructing the site, will not accrue until that occurs.

Economic benefits and the return in state revenue are expected to increase if site occupancy increases (Table 3-5). However, they are estimated to remain low compared with other incentives, especially other grants. While the benefits overall of an occupied megasite can be substantial for a community, only a small portion of those benefits can reasonably be attributed to the grants. It is also assumed that half of the employment will be filled from employees relocating from elsewhere in the state.

TABLE 3-5
Economic benefits and return in revenue should increase if occupancy of megasite-funded sites increases

	Average annual	
	FY08–FY18	**FY20–FY29**
Private employment per $1M in grant spending	16 jobs	32 jobs
Virginia GDP per $1M in grant spending	$2.3 million	$5.9 million
Personal income per $1M in grant spending	$1.7 million	$3.0 million
Return in state revenue per $1 in grant spending	8¢	22¢

SOURCE: Weldon Cooper Center economic impact analysis of economic incentive programs.
NOTE: Assumes the park employs 4,400 workers by 2029 as projected. Assumes 10.7 percent of the economic activity of megasite grant projects can be attributed to the grant. See Appendix O [online only] for more detail on the methodology for this analysis. Economic benefits of the megasite program start in FY08 because some match funding for site development, which was included in the analysis, occurred as early as FY08.

Several actions could improve the economic benefits of TROF and megasite programs

As of FY19, $209 million remained in the endowment that finances the Tobacco Commission and its programs. Therefore, the Tobacco Commission still has the opportunity to award TROF grants to encourage businesses to locate or expand in the region and enhance the economy. Several changes to the TROF program could increase its economic benefit. Of the total endowment amount, $3 million remains in the megasite fund unless it receives additional funding. Although this amount is minimal, beneficial assistance can still be provided to help the region's industrial sites increase their occupancy.

Tobacco Commission should strengthen due diligence procedures to increase the TROF program's economic benefit

The Tobacco Commission should adopt a due diligence process for vetting TROF projects. The TROF program has historically awarded funds to a relatively high percentage (50 percent) of projects that have not materialized. This practice creates unnecessary administrative costs, potentially ties up funding that might be available for other deserving projects, and creates unrealistic community expectations for business growth and job opportunities. However, this practice has not led to the loss of funds to the program, according to Tobacco Commission staff, because funds were either not disbursed or have successfully been recaptured from the project. Still, the risk that funds cannot be recaptured still exists and the locality—which has to affirm it has adequate security (letter of credit, performance bond, etc.) to repay the grant if necessary—may have to reimburse the Tobacco Commission.

Ideally, the Tobacco Commission would develop a due diligence process similar to the process adopted by VEDP. However, this approach is not feasible because the Tobacco Commission—which has a small staff—would need to hire multiple additional staff to replicate this process. At a minimum, the Tobacco Commission should adopt a checklist of standard information that is similar to the checklist VEDP requires for its grant applicants and is more extensive than the current information collected from applicants. Applicants should be required to provide information such as audited financial statements, description of project needs, description of factors driving business decisions, and other data VEDP collects from businesses.

Tobacco Commission staff should work with VEDP staff responsible for vetting projects to develop the checklist and a modified project vetting process. This process should be one that can be performed with the Tobacco Commission's limited staff resources yet still help identify projects likely to succeed, increasing the program's economic benefit. Information on award denials should be filed for reference to help guide future assessments.

RECOMMENDATION 7

The Tobacco Region Revitalization Commission should adopt a checklist of standard information required of Tobacco Region Opportunity Fund grant applicants to strengthen the due diligence process for awarding the grant and require that all grant applicants submit this information for consideration as part of the application process.

Other actions could improve due diligence efforts without over burdening the Tobacco Commission's limited staff. Many projects that receive TROF grants also receive VEDP-administered grants. Therefore, the Tobacco Commission should work with VEDP staff to develop a process for sharing the findings of the VEDP project review process.

RECOMMENDATION 8

The Tobacco Region Revitalization Commission should collaborate with the Virginia Economic Development Partnership (VEDP) to develop a process for sharing the results of the VEDP Project Review and Credit Committee for projects that are seeking grants from one of the VEDP programs and the Tobacco Region Opportunity Fund.

The Tobacco Commission could also consider requiring that all awards be paid only after performance. Currently, the Tobacco Commission allows applicants to choose whether to receive grant awards up front or after performance. This change alone would not reduce the risk of the Tobacco Commission approving TROF awards to projects that do not materialize. However, it would reduce the administrative burden of having to recapture funding and would eliminate the potential that a locality may have to repay the grant. This change would also better position Tobacco Commission staff to focus more due diligence efforts on projects that would require a sizable commitment of funds, limiting the availability of funding for other projects.

Policy options for consideration. Staff typically propose policy options rather than make recommendations when (i) the action is a policy judgment best made by elected officials—especially the General Assembly, (ii) evidence suggests action could potentially be beneficial, or (iii) a report finding could be addressed in multiple ways.

POLICY OPTION 2

The Tobacco Region Revitalization Commission could require all Tobacco Region Opportunity Fund grant awards be paid only after performance.

Megasite program should focus on bringing smaller industrial parks to business-ready status

The Tobacco Commission should use remaining megasite funds to bring smaller industrial sites (100 to 500 acres) in the tobacco region to business-ready status. VEDP has identified the lack of business ready parks in the 100-plus acreage category as a significant constraint on business recruitment statewide. The program could be restructured to be similar to VEDP's program to help increase the availability of sites that are "business ready," and grants should target smaller industrial sites in the tobacco region. Tobacco Commission and VEDP staff could coordinate to ensure the best use of funds in the tobacco region from both programs.

Using the remaining megasite funds for this purpose would likely produce larger economic benefits than providing further assistance to the nine industrial parks that have received program funding to date. The Tobacco Commission likely would have saved funds, avoided overbuilding and redundancy, and better aligned industrial site inventory with the largest constraint on site absorption—workforce availability—if it had adopted, at the outset, the policy to fund a larger number of smaller parks owned by regional industrial authorities at a 50 percent local match rate (the current match rate for all Tobacco Commission programs). Instead, the policy focused on funding larger megasites and, initially, at a low (10 percent) local match rate. The limitations of the existing industrial sites funded by the megasite program likely stem from the lack of a comprehensive study of industrial park needs for the region to determine the optimal number, location, and size of the parks. (See *Review of the Tobacco Indemnification and Community Revitalization Commission*, JLARC, 2011.) Instead, the program was based on an assessment of 19 sites in the tobacco region to identify which ones would most feasibly accommodate a major auto assembly plant, which found that even the best site had substantial limitations.

Alternatively, rather than continuing to fund industrial sites, the Tobacco Commission could divert the remaining $3 million in megasite grant funding toward education and workforce initiatives, such as the Talent Attraction Program. This program provides loan repayment assistance to encourage recent graduates to live in the tobacco region and work in targeted, hard-to-fill occupations. Shifting additional funding toward education and workforce initiatives (which accounted for 18 percent of spending by the Tobacco Commission between FY10 and FY18 compared with 30 percent for the TROF and megasite grant programs) would be consistent with recommendations from a prior JLARC report. (See *Review of the Tobacco Indemnification and Community Revitalization Commission*, JLARC, 2011.)

Tobacco Commission should require megasite grantees to provide performance information and annual updates

The Tobacco Commission should require recipients of grant funding through the megasite program to regularly report performance information. Job creation and capital investment expectations are included in the grant application for each industrial site. However, no information related to job creation or capital investment is collected afterward. Sites that receive future awards from the megasite program should be required to provide annual performance updates on site occupancy, employment, and capital investment for up to 10 years after the grant was awarded.

RECOMMENDATION 9

The Tobacco Region Revitalization Commission should require industrial sites that received megasite program funding to regularly report performance information such as job creation and capital investments by businesses that locate or expand in the industrial sites.

Tobacco Commission should use VEDP prioritization standards for funding future industrial sites

The Tobacco Commission should also adopt a more transparent funding prioritization framework, similar to what VEDP is developing for industrial sites that are supported through the Virginia Business Ready Sites Program. The prioritization should be based on market demand, development costs, and other objective factors and can incorporate some of the Tobacco Commission's existing criteria, such as funding leverage, participation in a regional industrial facility authority, and area economic distress.

RECOMMENDATION 10

The Tobacco Region Revitalization Commission should adopt a transparent prioritization framework for awarding megasite grants that accounts for factors such as market demand, costs of development, and other objective factors.

4. Business Ready Sites Program

The **site readiness scale** consists of four tiers.

Tier 1: Raw land with interested seller.

Tier 2: Site controlled and marketed for development.

Tier 3: Site has been zoned industrial or commercial, due diligence (wetlands survey, environmental survey, etc.) complete.

Tier 4: Infrastructure is in place or will be deliverable within 12 months.

Tier 5: "Shovel ready" with permits in place.

The Virginia Business Ready Sites Program was created in 2015 to encourage industrial and commercial site development for business attraction, retention, and expansion. The program is administered by the Virginia Economic Development Partnership (VEDP) and provides financial support to localities and regions to:

- assess potential business sites using a site readiness scale,
- plan for site development, and
- improve site readiness.

The Business Ready Sites Program has two components—a site characterization program and a site development program (Table 4-1). Both programs provide grant funding to localities and industrial development authorities to help develop public or public-private owned business sites in their jurisdiction. Site characterization grants help defray the cost of hiring specialists, such as engineering firms or site selection consultants, to assess and characterize business sites based on a site readiness scale. Site development grants help localities or industrial development authorities defray "soft costs," such as architectural, engineering, and other consultant fees needed to plan site development and improve readiness tiers. Grant funding can be used for "hard costs," such as site grading or infrastructure development but soft costs are prioritized.

"**Business-ready**" sites are characterized as Tier 4 or 5 on the site readiness scale. Tier 5 sites are fully business ready.

TABLE 4-1
Virginia's Business Ready Sites Program provides financing to characterize industrial and commercial sites and increase their "business-ready" status

	Business Ready Sites Program
Purpose	Encourage the development of industrial and commercial sites and associated infrastructure for business attraction, retention, and expansion.
Eligible projects	Sites that are publicly or publicly/privately owned with at least 100 contiguous, developable acres. Must be zoned for industrial and commercial development and listed in VirginiaScan, an online GIS-enhanced site selection tool available on the Virginia Economic Development Partnership website for developers or any interested party to learn about industrial and commercial site availability. Locality or local economic development agency must provide local match and demonstrate it will develop the site.
Program features	Site characterization grants provide up to $5,000 to localities to employ a licensed engineer or site development specialist to assess and characterize the site using readiness tiers, and determine the necessary steps and cost estimates to advance the site to higher levels of readiness. Site development grants provide up to a 50-50 match for soft costs of site development, such as funding architectural, engineering, and other consultant fees. Award amounts are based on tier movement with a move from tier 1 to tier 2 eligible for a $100,000 grant, from tier 2 to tier 3 for a $250,000 grant, and from tier 3 to 4 or tier 4 to 5 for a $500,000 grant.

SOURCE: Weldon Cooper Center review of the Code of Virginia and agency documents.
NOTE: Authorized by §2.2-2238.

Virginia's Business Ready Sites Program is similar to the site certification programs offered in many other states, and the number of states offering site certification or readiness programs has grown rapidly in recent years. North Carolina offered one of the first programs in 2001. By 2018, 31 states reportedly had site certification or readiness programs. The characteristics and funding levels of these programs vary widely, though they all are designed to provide information on site readiness. (See Appendix J for site certification programs in other states.)

No national standard exists for what constitutes a certified or business-ready site. Generally, a certified site is said to be "shovel ready," meaning that the site is available for sale, zoned and permitted for industrial use, adequately served by transportation and utilities, and ready to be developed by private businesses for industrial and commercial operations. Many state programs also have common elements including

- a process for certification either in-house or externally,
- a checklist for documents needed to demonstrate full readiness,
- an online repository of site inventory, and
- a requirement that sites need to be recertified every two to five years.

In a 2019 survey of state Shovel-Ready site programs by Area Development magazine, Virginia ranked ninth along with Mississippi, Missouri, and Iowa in terms of program quality. Virginia's regional peers, Tennessee (ranked first), North Carolina (ranked fourth), and Kentucky (ranked seventh), ranked higher.

Business Ready Sites Program was created to provide adequate number of development-ready sites as business attraction tool

Virginia's Business Ready Sites Program was created to enhance the availability of business-ready industrial and commercial site inventory in the state. According to VEDP, Virginia lacks sufficient industrial and business site inventory to meet industry demand, resulting in missed business opportunities. Prior to program inception, VEDP estimated the lack of business-ready sites resulted in the loss of as many as 47 projects and $6.5 billion in capital investment from 2005 to 2014. More recently, VEDP estimated that Virginia lost as many as 65 projects—which were expected to result in 19,000 jobs and $5 billion in capital investment—between FY17 and FY19.

Availability of certified business-ready sites is important for competitiveness

The availability of certified business-ready sites is an important business attraction tool. According to VEDP staff, Virginia will be eliminated from competition in many cases if the state is not able to offer business-ready sites. These sites save companies time and money, according to local economic developers. Certification allows private and public industrial site property owners or controllers to verify and convey to interested developers and businesses that a piece of property meets certain requirements for industrial or commercial development. Certification can reduce uncertainty and save businesses time (up to six months or more) and money (up to $50,000 or more)

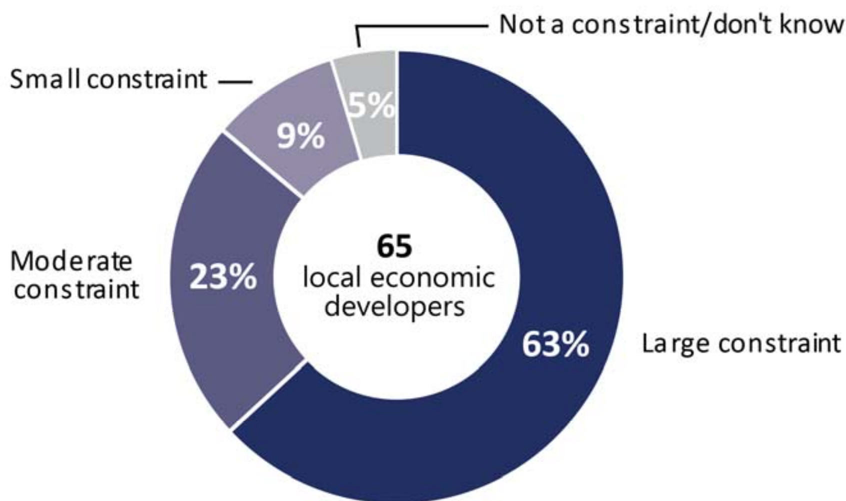
in the site location process, according to site selection consultants. Site certification removes a considerable amount of engineering, environmental, and legal analysis and reduces the need for additional investment in site grading, environmental and wetland remediation, and upgrading of utility and transportation infrastructure.

Weldon Cooper Center staff surveyed local economic development staff for each of Virginia's 133 counties and independent cities to assess the importance of incentives to attract businesses, estimate the supply and demand for business ready sites, and assess the importance of various industrial location and expansion factors. The response rate was slightly over 50 percent.

(See Appendix B for more information on the survey and Appendix M for select survey results.)

Local economic development staff indicated on a survey that the lack of business-ready site inventory in Virginia hampers economic development efforts, with 63 percent that responded to a survey indicating that it is a large constraint (Figure 4-1). Only 36 percent of local economic developers indicated they had business-ready sites in their jurisdiction. Another 30 percent indicated sites are in the planning or construction stage but not yet business ready, but only some (18 percent) of these respondents did not have at least one business-ready park in their jurisdiction. Out of 29 location factors, local economic developers ranked business or industrial park availability twelfth, which is higher than the ranking for state and local incentives and tax rates. (See Appendix M for rankings.)

FIGURE 4-1
Majority of local economic developers in Virginia rate lack of business ready sites as a large constraint on economic development



SOURCE: Weldon Cooper Center survey of local economic developers, 2020.
NOTE: Survey responses = 65.

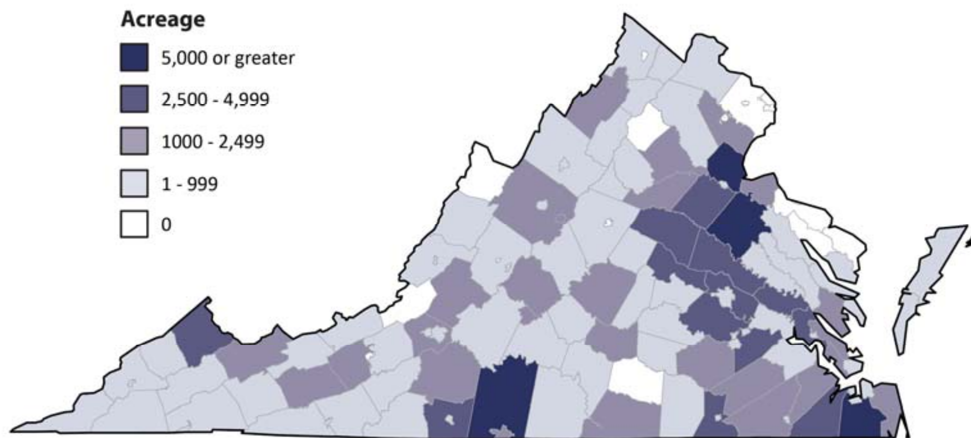
Virginia industrial and commercial sites are lacking, particularly in economically distressed areas

A key factor limiting the availability of business-ready sites is that Virginia lacks industrial and commercial site inventory, especially in rural economically distressed areas. Forty-two percent of local economic developers rated Virginia as "weak" regarding the availability of industrial park space in relation to other states. VEDP and Tobacco Commission staff also indicated that rural economically distressed areas lack industrial

site space. They also report that while private developers play a substantial role in providing marketable industrial and commercial space in the state, only a handful of privately owned business sites operate in more economically distressed regions.

Virginia's industrial and commercial site acreage is concentrated in the eastern and southern parts of Virginia (Figure 4-2). Available site acreage in the eastern part of Virginia likely reflects access to Richmond's and Hampton Roads' metropolitan work-forces and lower development costs for flat land. Several localities in the eastern part of the state are also experiencing population growth, and the private sector plays a more substantial role in providing marketable industrial and commercial space in growing regions, based on analysis of information in VirginiaScan. The eastern part of the state also has greater interstate and rail access. In Southern Virginia, megasite grant funding from the Tobacco Commission played a key role in the greater level of availability of business sites.

FIGURE 4-2
Virginia's business site acreage is concentrated in the eastern and southern parts of Virginia



SOURCE: VirginiaScan, Virginia Economic Development Partnership.
NOTE: Includes 1,183 business parks for which information is available in VirginiaScan.

Business Ready Sites Program has awarded over $1.2 million in grants to help increase the tier status of eight sites

The Business Ready Sites Program approved its first grant awards in FY17. The site development program has accounted for most of the expenditures, awarding $1.2 million in grants to eight business sites (Table 4-2). Collectively, these sites cover 3,362 acres, with size varying from 110 acres (Wood Haven Technology Park in Roanoke County) to 1,027 acres (Orrock-Simms Assemblage in Caroline County). Henry County received the largest award to help with planning costs for installing a water tower at Commonwealth Crossing. Once the tower and gas utilities are installed, site

officials indicated Commonwealth Crossing should be at Tier 5 status. The program also awarded 27 site characterization grants totaling $80,880 in FY17 and eight site characterization grants totaling $18,000 in FY18.

TABLE 4-2
Business Ready Sites Program awarded $1.2 million to enhance the business readiness of eight industrial and commercial sites

				Readiness tier	
Site	Locality	Amount awarded	Acres	Before grant	After grant
Commonwealth Crossing	Henry	$500,000	720	3	4
Summit View Business Park	Franklin	250,000	540	2	4
Nature's Crossing Tech Center	Waynesboro	216,500	170	3	3 [a]
Wood Haven Technology Park	Roanoke	100,000	110	1	4
King Property	Orange	40,300	147	1	3
Holland/Axselle Site	Hanover	29,500	277	2	4
Orrock-Simms Assemblage	Caroline	29,325	1,027	1	2
Mill Place Commerce Park	Augusta	21,988	371	2	4
Total/average		**$1,187,613**	**3,362**		

SOURCE: Virginia Economic Development Partnership, Business-Ready Site Program documents, and VirginiaScan.
NOTE: Readiness tier as of summer 2020. [a] Site is in progress to moving to tier 4.

In FY19, VEDP suspended both site characterization and site development grants to focus on a broader site characterization effort. The governor and General Assembly appropriated $2 million to the program for VEDP to hire engineering firms and site selection consultants to characterize 466 business sites over 25 acres, both privately and publicly owned, in 103 localities that were already in the VirginiaScan inventory. Earlier audits of sites in the database indicated that existing site information was often unreliable. Engineers compiled, reviewed, and assessed the physical potential of each site and estimated the cost to bring it to "business-ready" status. The site selection consultant assessed sites for location competitiveness and their suitability for eight targeted industrial sectors. This effort provided more robust data for marketing, planning, and assessment and more accurately estimated the costs of bringing sites to full readiness. Preliminary data analysis indicates that raising state inventory to full readiness would cost an estimated $0.5 billion to $1.4 billion. The range is large because there is still a great degree of uncertainty about some aspects of the sites, such as detailed geology.

Going forward, the program will continue providing site characterization grants for new sites but focus more, pending available funding, on providing site development grants. VEDP was appropriated $12 million for the Business Ready Sites Program in FY21, but this appropriation was 'unalloted' by the governor and could be reduced or eliminated depending on the revenue impact of the COVID-19 pandemic.

The Business Ready Sites Program has provided useful information on readiness of business sites

The most beneficial outcome of the Business Ready Sites Program so far is the collection of more accurate information on Virginia's existing business sites and identification of those that are "business ready." This catalog will provide useful information to ensure that site development grant awards are targeted to business sites that have high potential for future development. The site development grants have not had much impact on the Virginia economy because only eight grants have been awarded to business sites, and it often takes multiple years to bring a site to business-ready status.

Program's site characterization study confirms low percentage of industrial and commercial sites are business ready

The results of the Business Ready Sites Program's FY19 site characterization study confirmed that most sites are not considered business ready. The program assessed 466 sites that were more than 25 acres and characterized less than 10 percent as Tier 4 or Tier 5. The lack of business-ready sites also occurs across all regions of the state, with only the Southern region having more than 10 percent of its available sites characterized as business ready. Nearly all other business sites that were assessed are characterized as Tier 1 or Tier 2, meaning that substantial due diligence must be performed for the sites to be business ready.

The majority of Virginia's largest sites—the size that a large, transformational project would likely seek—are not business ready, according to analysis of site readiness information in VirginiaScan as of December 2019. Only four of the 22 megasites (1,000 acres or more) and only six of the 18 super sites (500 to 999 acres) are characterized as business ready. Some of these sites, however, may not be marketed solely for economic development projects or are relatively new and have yet to be characterized.

Program is too new to have much impact on Virginia economy

As of FY18, only eight site development grants have been awarded to industrial or commercial sites. The goal of the grants was to help each site move up to a higher readiness tier. According to VEDP, seven of the eight sites have moved up to a higher tier level because of the grant and one is making progress to moving up to a higher tier level (Table 4-2). Only two of the sites have had project announcements: Press Glass announced in August 2018 that it would locate in Commonwealth Crossing (212 jobs and $44 million in capital investment), and Traditional Medicinals announced in January 2020 that it would locate in Summit View Business Park (56 jobs and $30 million in capital investment).

The economic benefits of the site development grant and its return in state revenue are estimated to be low compared with other economic development incentives. Estimates show that each year private sector employment increased by seven jobs, Virginia

GDP increased by $1.2 million, and statewide personal income increased by $0.7 million, on average, because of the grant (Table 4-3). Estimates of economic benefits generated per $1 million in spending and the return in state revenue per $1 spent—while low—are slightly higher than the estimates for the Tobacco Commission megasite program. (See Appendix C for more detail on the comparison of economic benefits generated by Virginia incentives.)

Economic impact analysis of expenditures by incentive recipients between FY17 and FY18 was conducted using economic modeling software developed by REMI, Inc.

(See Appendix O [online only] for the economic impact analysis used in this study.)

Net impact is the increase in economic activity induced by the incentive, adjusted for the opportunity cost of increasing taxes to pay for the incentive.

(See Appendix P [online only] for information on the total economic impact and the opportunity cost of increasing taxes.)

TABLE 4-3
Business Ready Sites Program's site development grants have low economic benefits and a low return in state revenue

	Annual average FY17–FY18
Net impact to Virginia economy	
Private employment	7 jobs
Virginia GDP	$1.2M
Personal income	$0.7M
Impact to Virginia economy per $1 million of grant	
Private employment	19 jobs
Virginia GDP	$3.0M
Personal income	$2.0M
Impact to state revenue	
Total revenue	$0.1M
Cost of grant	$0.6M
Revenue net of awards	($0.5M)
Return in revenue	10¢ for every $1 spent

SOURCE: Weldon Cooper Center economic impact analysis induced by the incentive between FY17 and FY18.
NOTE: Includes direct, indirect, and induced impacts. Gross impact on Virginia's economy is used to calculate impact per $1 million in incentive awards. This is consistent with how the economic development research literature typically calculates these impacts. (See Appendix P [online only] for detailed results on total impact of the incentive, impact of raising income taxes by the amount of the incentive [opportunity cost], and revenue generated by source.)

Economic benefits and the return in revenue estimates for this new program should be expected to be low. The program is new and has awarded only eight grants to industrial sites, some of which are not open yet. It can take several years to bring a commercial site to business-ready status, and the analysis captures only the impact of program and local matching funds on planning and engineering services during the two-year period.

Over time, the economic benefits and return in revenue estimates will likely increase if the sites become occupied (Table 4-4). If these eight sites have a similar experience in occupancy as others in Virginia, they are projected to accommodate nearly 2,300 workers 10 years after opening and over 6,000 workers at full buildout. (See Appendix O [online only] for more details on this research.)

The economic benefits and returns in revenue will likely remain low because of the program's design. The Business Ready Sites Program is more of a facilitator to increase sites' readiness to attract businesses. Awards are small in relation to the total costs for

site development (0.022 percent of total project costs) and are expected to induce 0.10 percent of the economic activity of these projects, according to a scale developed by a leading researcher of incentives (Bartik 2018). Other incentives are generally more of a catalyst to development because they directly incentivize a business to locate, start up, or expand in the area, often within an 18- to 36-month period. Even the megasite grant, which also assists in business site development, is likely more of a catalyst given the substantial size of the grants (total funding per site ranged from $3 million to $25 million compared with $100,000 to $500,000 for the Business Ready Sites Program development grants).

The **scale** estimating the amount of economic activity attributed to an incentive is based on the incentive amount as a percentage of the business's new or expanded operations over a 20-year period. The estimate is based on costs and does not account for other factors that may influence a business's location or expansion decisions. See Appendix O [online only] for more detail on the difficulty of precisely estimating incentives' effects and the methodology used in this report.

TABLE 4-4
Economic benefits and return in revenue are estimated to increase as occupancy of the eight funded sites increases

	Average annual	
	FY17–FY18	FY20–FY29
Private employment per $1M in grant spending	19 jobs	21 jobs
Virginia GDP per $1M in grant spending	$3.0M	$3.9M
Personal income per $1M in grant spending	$2.0M	$2.0M
Return in state revenue per $1 in grant spending	10¢	13¢

SOURCE: Weldon Cooper Center economic impact analysis of economic incentive programs.
NOTE: Assumes the site employs 2,300 workers by 2029 as projected. Assumes 0.10 percent of the economic activity from grant funded projects can be attributed to the grant. See Appendix O for more detail on the methodology for this analysis.

Several changes to the Business Ready Sites Program would improve its effectiveness

VEDP has awarded only one round of grants through the site development program so far. Since then, VEDP has gained useful information through the site characterization study and is changing program guidelines to better target the grants. This should increase the program's economic benefit if it targets industrial and commercial sites with the greatest potential to be developed and occupied. Several additional changes would also improve the program's effectiveness but are contingent on available funding. At the time this report was printed, the budget for the 2021–2022 biennium had not been finalized. However, most of the program's $13 million appropriation for FY21 was unalloted and converted to budget reductions by the governor, so the program will only receive $0.6 million in appropriations during each year of the 2021–2022 biennium unless the General Assembly increases its appropriations. If the program receives more funding in the future, VEDP should perform additional analysis to help target future grant awards and also help localities understand their market potential for commercial and industrial sites. In addition, VEDP should increase efforts to ensure localities have adequate technical knowledge to develop and market their sites effectively. Regardless of funding, VEDP should require business sites to renew their site certification status.

VEDP could perform additional analysis to better target site development grant awards and help localities and regions target sites for development

VEDP could perform additional analysis to help identify the most strategic industrial and commercial site opportunities for Business Ready Sites Program funding. Currently, localities or regions drive additions to the state's business site inventory and select which sites to enhance readiness, rather than a top-down analysis at the state level. Analysis by VEDP could provide a more neutral look to identify the best opportunities among various sites across Virginia. This analysis could also help (1) the Tobacco Commission and the Go Virginia Board better target site development funding to sites likely to be developed and occupied and (2) inform local decisions for selecting sites to develop and bring to business-ready status.

This additional analysis appears critical because research indicates business site success is linked to adequate planning and demand. While VEDP staff said they encourage localities and regions to perform market analyses before developing or expanding business sites, it is unclear how frequently these analyses are performed, particularly for publicly owned sites. Inadequate site planning across the nation has led to poor location decisions and business sectors to target, inadequate infrastructure investment, and insufficient marketing. Business sites may not realize expected occupancy rates, and some are never filled or allow occupancy in non-intended uses because targeted sectors showed no interest.

Geographical information system (GIS) **public facility location-allocation modeling** is often used to select optimal locations for factories and distribution centers as well as public service facilities such as hospitals and schools.

The analysis could be informed by the substantial information that has already been collected and input into VirginiaScan, as well as site location coordinates. Additional information would need to be collected such as information on fully occupied sites (since turnover is expected to occur) and on brownfield developments (which would require teardown and rehabilitation). This information could then be processed using geographical information system (GIS) public facility location-allocation modeling to identify several factors. GIS could help determine if business site inventory gaps exist across the state and in each region, whether some areas have excess supply, and the sites that should be prioritized for public funding. The analysis should consider

- local market conditions;
- transportation access;
- configuration of existing business site inventory; and
- topography, hydrology, soil, and other geological characteristics that affect site construction costs.

VEDP should make additional technical assistance available to communities to increase the success of their business sites

While VEDP already provides technical assistance to localities, it should make additional technical assistance available to communities, particularly those with publicly owned business sites. This additional technical assistance should include a checklist of post-development guidelines and best-practices for business site success. VEDP

should also include technical assistance to help localities market their business sites. Some sites have limited marketing materials available for their sites, creating the possibility that an expensive economic asset developed with state assistance is not realizing its full potential. VEDP could also coordinate with existing professional organizations, such as the Virginia Economic Developers Association, Virginia Association of Counties, Virginia Municipal League, and Virginia Planners Association, to develop workshops to provide this additional technical assistance to localities.

VEDP should require business sites to renew their business-ready certification every two to five years

VEDP should adopt a renewal period of two to five years for recertification of business-ready status. Currently, there is no requirement that certification be renewed. A renewal requirement would apply to both publicly and privately owned sites that are included in VirginiaScan. Most states provide certification for a limited time period, usually between two and five years. The reason for recertification is that environmental reviews have a limited shelf life, and conditions at the proposed site can change. To maintain certification, site representatives would be required to submit additional documentation for the information that becomes outdated over time.

RECOMMENDATION 11

The Virginia Economic Development Partnership should require that businesses renew their certification status at least every five years.

5. Transportation Infrastructure Grants

TPOF originally provided grants and loans to other transportation projects (Public-Private Partnership Transportation Act projects and design-build transportation projects) in addition to economic development projects. In 2015, the program was changed and now makes awards only to economic development projects. Changes also included the addition of performance criteria and reporting and recapture provisions if performance goals are not attained.

Virginia offers three economic development incentive grant programs to ensure that businesses seeking to locate or expand in Virginia have adequate access to their site via road or rail (Table 5-1). Each program targets different types of infrastructure improvements:

- The Transportation Partnership Opportunity Fund (TPOF), adopted in 2005, is the broadest of the three programs and finances a wide array of improvements to transportation infrastructure, including road, rail, barge, or mass transit, to further economic development.
- The Economic Development Access Program (road access grant), which was adopted in 1956 and is Virginia's oldest economic development incentive, provides grant funding for roadway access to industrial parks or business sites.
- The Rail Industrial Access Program (rail access grant) was adopted in 1987 and provides grants to build or improve rail lines or spurs between existing common carrier railways and industrial or business sites. The program is also designed to encourage the diversion of freight traffic from roads to railways.

The three transportation infrastructure grants are administered by state transportation agencies. Both TPOF and the road access program are administered by the Department of Transportation (VDOT). The rail access grant is administered by the Department of Rail and Public Transportation (DRPT). The Commonwealth Transportation Board, which oversees transportation projects for the state, develops the guidelines for all three programs and approves awards for the road and rail access grants. The governor must approve TPOF grants.

TPOF is by far the largest of the three programs in terms of amount awarded, with a maximum grant award of $5 million. Funding can also be provided as an interest-free loan of up to $30 million per project, but few loans have been awarded, and several loans were later converted to grants. Therefore, the analysis in this chapter largely focuses on the TPOF grant awards. Awards for the road and rail access grants typically are much smaller because statute limits the maximum amount a locality can receive to $500,000 for road access grants and $450,000 for rail access grants each year.

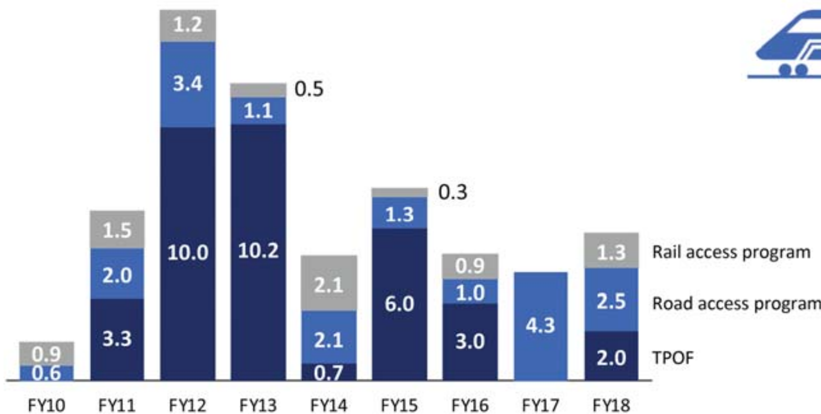
TRANSPORTATION INFRASTRUCTURE GRANTS

Encourage economic growth by addressing transportation needs of business location or expansion projects

VALUE TO BENEFICIARIES

FY10-18

Grant awards: $62.2M total



Beneficiaries

11 TPOF projects

36 road access projects

28 rail access projects

ACHIEVEMENT OF PURPOSE

All three grants: Have limited ability to boost economic activity
Can decrease companies' shipping costs and speed, reduce inventory costs, and improve productivity through reduced congestion and other time and travel cost savings.

TPOF and road access program: Generally missed employment expectations, limiting ability to generate additional economic activity.

Rail access program: Likely results in the shifting of some freight from truck to rail.

IMPACT TO STATE ECONOMY

FY 10-18

Economic benefit per $1M in grants

Jobs, state GDP, and personal income

Return in revenue

per $1 spent

●●●● High
●●●○ Moderate
●●○○ Low
●○○○ Negligible

Economic benefit	Return in revenue	
		TPOF
		Road access grant
		Rail access grant

TABLE 5-1
Virginia provides three incentives for transportation improvements for economic development projects

	Transportation Partnership Opportunity Fund (TPOF)
Purpose	Promote economic development by improving transportation access for business development projects.
Eligibility	Transportation: must address needs in state, regional, or local transportation plan. Economic development: must meet the criteria established for the Commonwealth's Opportunity Fund (50 new jobs and $25 million in capital investment, or 25 new jobs and $100 million in capital investment) for job creation projects or the Virginia Investment Partnership ($25 million in capital investment) for job retention projects. Must be an export-base industry and considering an out-of-state location.
Program features	Provides grants up to $5 million and interest-free loans up to $30 million to local governments or political subdivisions on behalf of the business. Award applications are reviewed by TPOF advisory panel: deputy secretaries of commerce and trade and transportation, chief financial officer of the Virginia Department of Transportation (VDOT), staff from the Department of Planning and Budget, and staff from the relevant agency based on mode of transportation. TPOF advisory panel reports findings to the secretary of commerce and trade and secretary of transportation, who make recommendations to the governor and approve awards. Grant funding is disbursed upfront, and there are recapture provisions if performance goals are not attained. The performance period is 3 years.
Use of incentive	Fund road, rail, port/barge, mass transit, or other transportation improvements. Fund transportation project-related studies and assessments such as environmental analysis, geotechnical assessments, design, and engineering.
	Economic Development Access Program (road access grant)
Purpose	Promote economic development by ensuring adequate road access is available to business sites.
Eligibility	Transportation: locality of project must demonstrate lack of adequate access to the project site. Economic development: businesses must be manufacturing, processing, or research and development facilities; distribution centers; regional service centers; corporate headquarters; or other establishments in an export-base industry. Can include speculative projects that involve industrial site improvements without a named business prospect.
Program features	Must be requested by locality and distributed as a reimbursement to the local government for its costs of designing or constructing the access road for an economic development project. Maximum awards per locality total $500,000 per year. Localities can use the amount for one or more projects, and the maximum award per project is up to 20% of the qualifying capital investment made by the business. If a project costs more than $500,000, localities can receive an additional $150,000 in grant funding with dollar-for-dollar matching funds from the locality. Projects are reviewed by VDOT staff and the Virginia Economic Development Partnership and must be approved by the Commonwealth Transportation Board. For speculative projects, the locality must provide a surety bond to enable VDOT to recover funds if the project does not materialize or generate the anticipated capital investment. Grant funding is generally disbursed after performance (projects have a 2-year performance period), but funds for speculative projects (5-year performance period) are disbursed up front.

Use of incentive	Improve existing public roads in the secondary highway system or city to accommodate increased traffic created by the new facility or expansion. Construct a new publicly owned access road from a publicly maintained road to the new facility. Can also be used to fund access improvements to airports.
	Rail Industrial Access Program (rail access grant)
Purpose	Promote economic development by supporting construction, reconstruction, or improvement of railroad tracks serving new or expanding industrial sites. Divert truck traffic to the freight rail network.
Eligibility	Transportation: project that needs access to a common carrier railroad. Economic development: new or substantially expanding businesses.
Program features	Maximum award of $450,000 with a 30 percent local match. Grantees can include local government entities, new or expanding businesses, and railroads. Applicants must have a local resolution of support, have a letter of support and approval from the common carrier, and demonstrate they will generate a certain number of railcars. Commonwealth Transportation Board approves awards and must consider rail traffic, capital investment, potential employment, and other economic and public benefits of the project. Department of Rail and Public Transportation staff and the board have developed a 100-point scoring system to approve awards. Scores are based on the number of new carloads, new full-time jobs, capital investment, local unemployment rates, and other factors. Projects must score at least 50 points to be approved. Funds are provided upfront with recapture provisions for performance shortfalls. Projects have a 3-year performance period.
Use of incentive	Used to help finance laying freight rail tracks between common carrier rail lines and industrial sites. Help finance construction, reconstruction, or improvements to parts of tracks.

SOURCE: Weldon Cooper Center review of the Code of Virginia and agency documents.
NOTE: Authorized by §33.2-1529,1, § 33.2-1509, and § 33.2-1600.

All three programs require projects to meet specific transportation and economic development eligibility criteria. The TPOF and rail access programs have much stricter economic development eligibility criteria and more rigorous approval processes than the road access grant. The TPOF program requires that projects be in export-base industries and create (or retain) a minimum number of jobs. Projects are reviewed by an advisory panel, which reports its findings to the secretary of transportation and secretary of commerce and trade, who then make a recommendation to the governor. For the rail access grant, DRPT staff score each project based on factors such as the numbers of new carloads and full-time jobs and make recommendation to the Commonwealth Transportation Board, which approves projects. In contrast, the sole economic development criterion for the road access grant is that projects must be affiliated with an export-base business. Staff at VDOT and the Virginia Economic Development Partnership (VEDP) review the project to confirm that it is an export-base employer and make a recommendation to the Commonwealth Transportation Board, which must approve projects. Statute directs VEDP to consult with the Department of Small Business and Supplier Diversity in its review.

TPOF was originally capitalized with a $50 million transfer from the general fund. Since then, it has received funding from several sources, including the Commonwealth Transportation Fund. Starting in 2015, it began receiving one-third of the interest, dividends, and appreciation accruing in the Transportation Trust Fund and the Highway Maintenance and Operating Fund.

About half of other states have at least one economic development incentive program to incentivize road infrastructure (25 states) or rail infrastructure (25 states) to attract business locations and expansion projects. Several states also provide loan assistance. (See Appendix K for more detail on programs by state.)

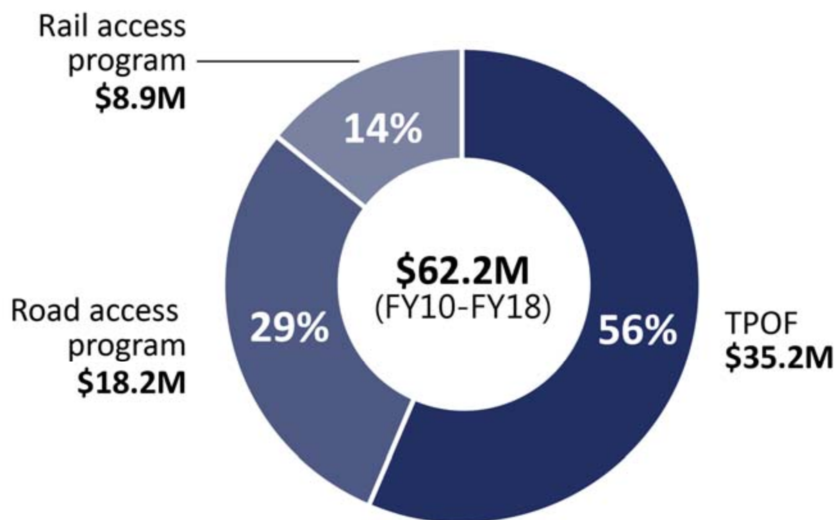
Virginia awarded $62 million in transportation infrastructure grants between FY10 and FY18

Virginia awarded $62.2 million in transportation infrastructure grants between FY10 and FY18 (Figure 5-1). More than half of this amount was awarded through the TPOF program. Unlike most other economic development incentive grants, these programs are funded with non-general funds. All three programs receive funding from the Commonwealth Transportation Fund, though TPOF was initially capitalized with general funds. Even though TPOF made fewer awards than the other two programs, the average award amount is substantially higher, and several projects received the maximum $5 million award. The majority of TPOF awards have benefited one entity, Orbital Sciences Corporation, for its operations at the Mid-Atlantic Regional Spaceport. Both the road and rail access grants generally involve the location or expansion of manufacturing or distribution companies.

Orbital Sciences Corporation was a multinational company headquartered in Dulles, Virginia. Its Dulles operations included building satellites and advanced space systems, and the company successfully bid for the NASA Space Station Resupply contract in 2008, using NASA's Wallops Island Flight Facility in Accomack County as its launch site.

Northrop Grumman acquired the company (then Orbital ATK) in 2018.

FIGURE 5-1
More than half of the spending on transportation infrastructure program awards was from TPOF (FY10-FY18)



SOURCE: Weldon Cooper Center analysis of grant award data from VDOT and DRPT.

Grant awards from the three transportation infrastructure programs mostly target rural areas of the state. (See Appendix L for maps of the distribution of awards by program.) Awards from the road access grant are more concentrated in Southwestern Virginia and Hampton Roads, particularly the City of Chesapeake. Nearly all of the

TPOF awards (80 percent) were in Accomack County and associated with the Mid-Atlantic Regional Spaceport.

Transportation infrastructure grants have mixed success in achieving their economic development goals

The transportation infrastructure grants have only mixed success in achieving their goals to encourage economic development. Awareness of the programs is low, and the road and rail access grants do not have much influence on business location and expansion decisions. The programs have had some success—particularly the rail access program—in creating the anticipated number of jobs that are reported on grant applications. The grants may also have additional benefits such as improving transportation logistics and increasing productivity through reduced congestion. The rail access grant also likely creates some social benefits by diverting trucks from the road. However, these additional benefits were not assessed as part of this study.

Familiarity and usefulness of the programs varies, according to local economic development staff

Local economic development staff had varying levels of awareness of the three transportation infrastructure programs, according to a survey. Nearly one-third (31 percent) of local staff reported they were unaware of the TPOF program, and one-fifth (20 percent) reported they were unaware of the rail access grant. This likely limits the use of these programs and, thus, their ability to generate economic benefits for the state. Only 10 percent of local staff reported they were unfamiliar with the road access grant, which is actually a higher level of awareness compared with other economic development incentives. (Across all incentives, on average, 15 percent of local economic development staff report they are unfamiliar with the incentive.)

The usefulness of the programs also varies somewhat, according to local economic development staff familiar with the programs. The road access grant is rated the most useful by local economic developers, who rated it 3.33 on average on a scale from 1 (not useful) to 4 (very useful) followed by TPOF (3.27 average rating). The rail access grant was rated slightly less useful (2.96 average rating).

Transportation grants likely do not generate much additional economic activity or influence business location and expansion decisions

Studies have found that large-scale transportation projects, like interregional improvements to the interstate highway system, can improve regional economies, but it is harder to measure the economic impact of smaller projects like those funded by TPOF and the road and rail access grants. For example, case studies assessing the abandonment of short-line railroad segments on communities indicate that the regional economic impacts are minimal. The road access grant generally involves grants to help finance road distances that are in "10ths of a mile" and involve secondary rather than primary roads, according to VDOT staff.

Studies of large-scale transportation projects show that these projects affect regional economies. Large-scale transportation projects have contributed to the decentralization of the population and population-linked service industries such as retail trade. However, these projects have also reinforced the advantages of larger urbanized areas in producing some types of tradable goods (goods that are often sold outside of the region where they are made). Studies have also found that new growth in areas that receive new highways is from diverted economic activity from bypassed areas.

The road and rail access grant awards are also relatively small ($0.6 million and $0.3 million, on average, respectively) in proportion to the operational costs of the projects, suggesting that the grants have a low ability to sway the location or expansion decision of companies. The grants typically represent a small fraction of recipients' total costs of new operations (1.3 percent and 0.7 percent for the road and rail access grants, respectively). These low percentages are expected to induce 12.6 percent of the economic activity for the access road projects and 6.8 percent of the economic activity for the rail projects, according to a scale developed by a leading researcher of incentives (Bartik 2018).

The **scale** estimating the amount of economic activity attributed to an incentive is based on the incentive amount as a percentage of the business's new or expanded operations over a 20-year period. The estimate is based on costs and does not account for other factors that may influence a business's location or expansion decisions. See Appendix O [online only] for more detail on the difficulty of precisely estimating incentives' effects and the methodology used in this report.

Still, the grant awards can have meaningful benefits to companies and the region. By improving road or rail access, the grants can marginally decrease companies' shipping costs and time, reduce inventory costs, and improve productivity through reduced congestion and other time and travel cost savings. International empirical studies have often found that improved road access (particularly highway access or highway proximity) has a positive effect on industrial property values.

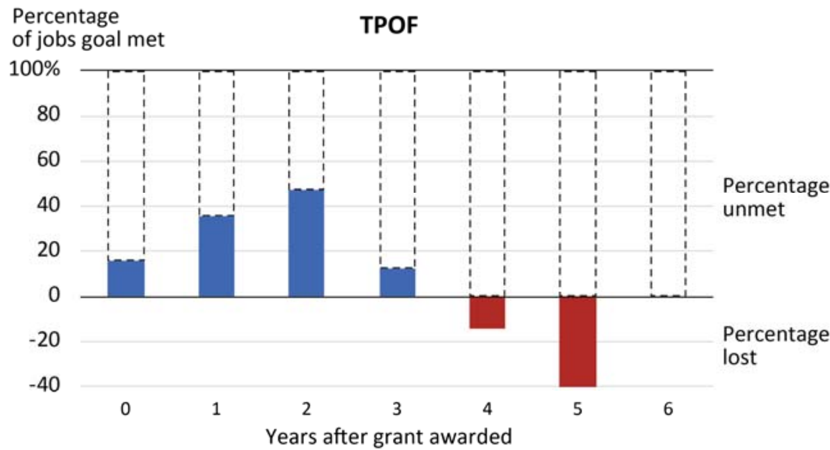
TPOF and the road access program have generally not met employment expectations, which has limited their economic impact

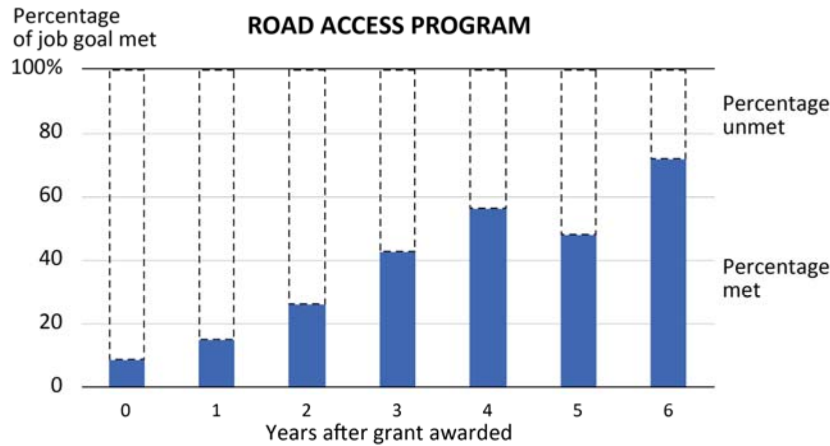
All three transportation infrastructure programs collect job creation expectations for projects as part of their criteria for grant awards. Only TPOF establishes actual project-specific job creation or retention goals, but TPOF did not require grant recipients to report job creation until 2015. For projects receiving TPOF awards since 2015, TPOF funds are forfeited or recaptured from the business if job creation (and capital investment) goals are not met. The road and rail access programs do not collect follow-up information on job creation to determine whether projects met their job creation expectations, likely because recapture provisions are not based on job creation.

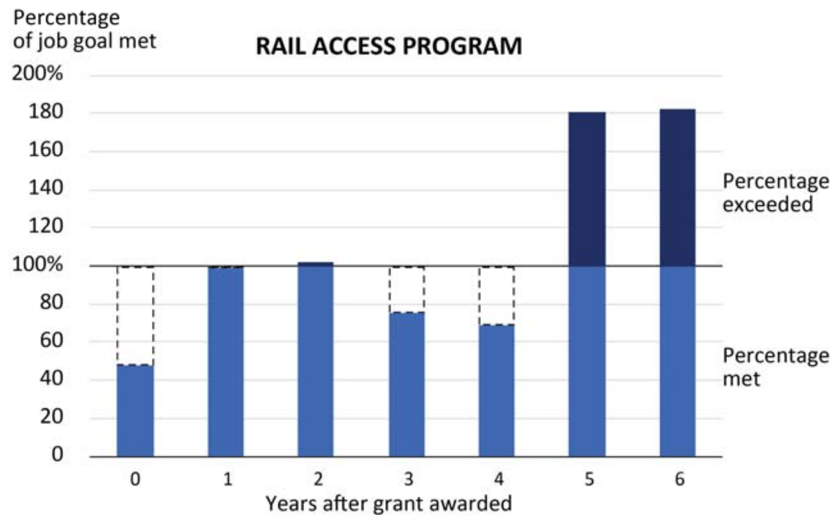
On a *project* basis, the rail access grant had the greatest percentage of projects that met job creation expectations reported in grant applications, based on analysis of Virginia Employment Commission payroll employment records. Fifty-three percent of completed rail access projects met their job creation expectations, and 44 percent of road access projects met their job creation expectations. There were only two completed TPOF projects during the study period, and only one (50 percent of projects) achieved its job creation goals.

When assessed collectively across completed projects over a six-year period, the road access and rail access grants' job creation performance improved, but TPOF job creation performance did not (Figure 5-2). When assessed collectively, the rail access grant is the only transportation incentive where projects met or exceeded total job creation expectations, and by year five, projects collectively achieved well over 100 percent of expected job creation levels. By year six, road access projects collectively met only 72 percent of their job creation goal. The two completed TPOF projects created enough jobs in the first two years after receiving awards to achieve almost half of the program's goal, but then all job creation gains eroded because of job losses.

FIGURE 5-2
Completed projects for TPOF and the road access program did not meet job creation expectations reported in grant applications (FY10–FY18)







SOURCE: Weldon Cooper Center analysis of information reported by VDOT and DRPT and VEC employment data.
NOTE: Includes projects matched to Virginia Employment Commission payroll employment records (TPOF, 2; road access program, 9; and rail access program, 13).

Rail access grant has minor impact on state rail activity but likely creates some social benefits

Studies of freight transportation generally indicate that the choice of transportation mode depends on transportation speed, frequency, and costs and commodity characteristics (value-to-weight ratio and perishability) in addition to the availability and quality of transportation infrastructure. Rail transportation becomes more feasible with bulkier products that are less time-sensitive and need to be shipped longer distances of 500 miles or more. Many goods such as coal and nonmetallic minerals are heavily dependent on rail transportation, while bulk and finished foods, lumber, paper, transportation equipment, and metal products offer relatively strong potential for shifting between transportation modes.

The rail access grant likely has little impact on state rail activity because of limited funding and business demand. Freight that received rail access grants made up only 1.5 percent of total freight carloads in Virginia from FY10 to FY18, according to an analysis of program data. However, one-third of the freight that received these grants likely would have shipped via truck without the grant because freight transportation studies suggest that these shipments (which included shipments from food, wood, chemical, plastic, and cement manufacturers) have a moderate or high potential to shift from truck to rail transportation.

According to the Virginia Statewide Rail Plan (2017), freight diversion from roads to rail offers quantifiable social benefits such as cost savings for road maintenance and reduced congestion, air pollutant and emissions reductions, and crash reductions. These benefits should be quantified when evaluating transportation investments. Other economic and social benefits likely exist but are more difficult to quantify. For example, rail access grants may help short-line railroads remain viable and available to transport goods for other businesses. Maintaining existing railway structure for future use also has value because re-establishing abandoned railways would require substantial investment and would likely face regulatory obstacles.

Economic benefits and revenue returns of transportation infrastructure grants range from moderate to negligible

The transportation infrastructure programs are estimated to have generated minimal additional economic activity for the state between FY10 and FY18 (Table 5-2). Of the three programs, the rail access grant is estimated to have generated the most additional economic activity each year during the time period (42 jobs, $6.8 million in Virginia GDP, and $3.7 million in personal income), while TPOF generated the least (4 jobs, $0.4 million in Virginia GDP, and a $0.2 million loss in personal income). The TPOF-generated activity is likely low because job creation levels for the projects were not maintained.

TABLE 5-2
Economic benefits and returns in revenue of transportation infrastructure grants varies widely (FY10–FY18)

	Annual average (FY10–FY18)			
	TPOF	**Road access grant**	**Rail access grant**	**All programs**
Net impact to Virginia economy				
Private employment	4 jobs	31 jobs	42 jobs	76 jobs
Virginia GDP	$0.4M	$6.2M	$6.8M	$13.5M
Personal income	($0.2M)	$2.9M	$3.7M	$6.5M
Impact to Virginia economy per $1 million in grants				
Private employment	10 jobs	48 jobs	62 jobs	25 jobs
Virginia GDP	$1.3M	$9.2M	$9.8M	$3.9M
Personal income	$0.9M	$4.6M	$5.5M	$2.2M
Impact to state revenue				
Total revenue	$0.1M	$0.2M	$0.3M	$0.6M
Cost of grants	$3.2M	$0.8M	$0.8M	$4.8M
Net revenue	($3.1M)	($0.5M)	($0.5M)	($4.1M)
Return in revenue for every $1 spent	5¢	29¢	33¢	13¢

SOURCE: Weldon Cooper Center economic impact analysis of the economic activity of completed grant projects (FY10–FY18) induced by the incentives.
NOTE: Includes direct, indirect, and induced impacts. Assumes 12.6 percent of the activity of road access grant projects and 6.7 percent of the rail access grant projects can be attributed to the grants. TPOF job creation was not sustained according to analysis of VEC data and additional information about job creation was not available. Economic activity generated by job creation was not modeled and the economic activity may be an underestimate. The gross impact on Virginia's economy is used to calculate the impact per $1 million in incentive awards. This is consistent with how the economic development research literature typically calculates these impacts. (See Appendix P [online only] for 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.)

Economic impact analysis of expenditures by incentive recipients between FY17 and FY18 was conducted using economic modeling software developed by REMI, Inc.

(See Appendix O [online only] for the economic impact analysis used in this study.)

Net impact is the increase in economic activity induced by the incentive, adjusted for the opportunity cost of increasing taxes to pay for the incentive.

(See Appendix P [online only] for information on the total economic impact and the opportunity cost of increasing taxes.)

The economic benefits of the transportation infrastructure programs range from moderate to negligible when assessed per $1 million spent and compared with other incentives. (See Appendix C for more detail on the comparison of economic benefits generated by Virginia incentives.) The rail access grant has moderate economic benefits because it generates higher levels of jobs (62), Virginia GDP ($9.8 million), and personal income ($5.5 million) per $1 million spent than the economic benefits generated by about half of Virginia's incentives reviewed to date and are higher than the average benefits generated by Virginia incentives. (See *Economic Development Incentives 2018*, JLARC, 2018.) The road access grant has low economic benefits. Even though it generates a similar amount of Virginia GDP ($9.2 million) as the rail access grant, the other economic benefits, particularly jobs, are lower than the rail access grant and other incentives reviewed to date. TPOF has negligible economic benefits because the additional jobs, Virginia GDP, and personal income generated per $1 million spent are

among the lowest among the incentives reviewed to date in this series. (See Appendix C for more detail on the comparison of economic benefits generated by Virginia incentives.)

The returns in state revenue per $1 in grants also range from moderate to negligible. Both the rail and the road access grants have moderate returns in revenue (33¢ and 29¢, respectively) per $1 spent. They generate higher returns in revenue than about half of the incentives reviewed to date, and returns are higher than the returns in revenue generated by all Virginia incentives, on average. (See *Economic Development Incentives 2018*, JLARC, 2018.) The return in revenue (5¢) per $1 spent for TPOF is negligible. It is among the lowest returns in revenue among all Virginia incentives reviewed to date in this series.

The economic benefits and returns in revenue generated by all three transportation infrastructure grants are lower than the economic benefits and returns in revenue from other grant programs in Virginia, even though they have some features that typically lead to a high economic impact. For example, more than 60 percent of grant recipients in each program were in industries with high employment multipliers. These percentages are well above the average for all economic development grants (47 percent between FY10 and FY18). The extent to which these programs target export-base businesses is also generally high relative to grant programs, on average. (See Appendix B for more detail on award targets by program.)

Of Virginia's incentives, TPOF is one of the best targeted at high impact industries, but it generates among the lowest economic benefits because projects did not maintain job creation levels. The TPOF program has among the highest rates of targeting high multiplier and export-base businesses, 90 percent and 64 percent respectively. The program's economic benefits and return in revenue likely would be much higher had job creation levels been maintained. Because TPOF requirements since 2015 require performance verification, grant projects funded after 2015 should be more likely to meet their goals. In addition, if projects do not meet their goals, the state may recapture funding. The effect of these changes was not reflected in this study's time period.

The lower economic benefits for the rail and road access grants relative to other grants also likely results from the low percentage of projects achieving their employment goals and the other factors considered in making awards. The rail access grant program's project selection scoring system considers employment creation and capital investment, but it also emphasizes modal shift from truck to rail, new rail carloads, nonstate contribution to track construction, and contribution to the viability of short-line railroads. The criteria for road access grant awards are the least well defined. The program relies on advice from VEDP on projects, and more recently the Virginia Business Ready Sites Program scoring system for speculative projects.

Several changes would increase accountability, efficiency, and economic benefits of the transportation infrastructure grants

The transportation infrastructure grant programs have mixed success in achievement of economic development goals, but, as noted previously, they may have other transportation or social benefits that were not assessed as part of this evaluation. The 2015 changes to the TPOF program should enhance its effectiveness and economic benefits. However, several additional changes could increase the economic benefits, accountability, or effectiveness of the programs.

Road access grant's project selection criteria should better align with VEDP programs to improve economic benefits

The road access grant should better align with VEDP's project selection criteria, which are designed to enhance economic benefits. This change would better align the program with many other incentive grants provided by the state. North Carolina and South Carolina, for example, use eligibility criteria such as job creation, capital investment, or competitiveness (considering locations in other states) for their road access programs.

The road access grant has the least well-defined eligibility criteria (the only eligibility restriction is that firms are export-base) of the three transportation infrastructure grant programs, and as a result, the lowest percentages of projects likely to have high economic impact. TPOF and the rail access programs have criteria that are more closely aligned with VEDP's criteria and also have higher percentages of projects likely to have high economic impact. TPOF adopted criteria used by VEDP's Commonwealth's Opportunity Fund and Virginia Investment Program, which restrict eligibility to export-base and competitive projects and require minimum job creation (or job retention) and capital investment levels. The rail access grant uses a formal scoring system that awards points if VEDP or a local economic development agency has been involved in attracting the project.

Strengthening the eligibility requirement for the road access grant will require statutory changes. The Virginia statutes governing the TPOF and rail access grant specify that eligibility should be based on job creation, capital investment, and other factors. The road access statute specifies only that projects must involve an export-base industry. The Code of Virginia could be amended to require that the Commonwealth Transportation Board, in consultation with the secretaries of transportation and commerce and trade, develop guidelines and criteria for grant awards that include provisions for the number of jobs, capital investment, or other relevant criteria, in addition to the existing export-base requirement.

RECOMMENDATION 12
The General Assembly may wish to consider amending § 33.2-1509 of the Code of Virginia to direct the Commonwealth Transportation Board, in consultation with the Secretary of Transportation and Secretary of Commerce and Trade, to develop guidelines and criteria for awarding grants from the Economic Development Access Program that include provisions for the number of jobs, capital investment, or other relevant criteria, in addition to the existing export-base requirement.

After the Commonwealth Transportation Board receives the statutory authority to include the number of jobs, capital investment, and other criteria in the guidelines and criteria for the road access program, the board should revise the program's eligibility criteria to match that of several existing VEDP programs. For non-speculative projects, the eligibility criteria should match the criteria for VEDP's Commonwealth's Opportunity Fund (job creation projects) or VEDP's Virginia Investment Program (job retention projects). For speculative projects, project prioritization guidelines being developed for VEDP's Virginia Business Ready Sites Program could be adopted. When developing the guidelines, the Commonwealth Transportation Board should also consult with VDOT staff that administer the TPOF program and VEDP staff that administer the Business Ready Sites Program.

RECOMMENDATION 13
The Commonwealth Transportation Board should revise the program guidelines for the Economic Development Access Program to align with 1) criteria for the Commonwealth's Opportunity Fund or Virginia Investment Program for non-speculative projects and 2) project prioritization guidelines for the Virginia Business Ready Sites Program for speculative projects, once the prioritization process is finalized.

Road and rail access grants should report both expected and actual employment creation to improve future evaluations

Staff at VDOT and DRPT that administer the road and rail access grants should collect job creation information both before making grant awards and at the end of the project performance period. Currently, program guidelines require job creation expectations be considered when making grant awards, though VDOT staff do not consistently collect job creation expectations for road access grant projects. Neither VDOT nor DRPT staff collect job creation data at the end of the project performance period. In contrast, both programs collect capital investment information both before making awards and at the end of the performance period because program guidelines require the recapture of funds if capital investment expectations are not met.

Staff for these programs should develop a system to collect and verify job creation levels, which would better align with the reporting requirements of other Virginia economic development incentives. Several projects receive other grants, in addition to the road or rail access grant, and likely already are required to report actual job creation.

Job creation reporting requirements would allow agencies to verify employment outcomes at the end of the project performance period, which could be useful in helping staff identify future projects likely to be successful for job creation. These reporting requirements may increase the likelihood that projects would achieve job creation goals, which would increase the economic benefits of the programs. They also would improve future evaluations of the road and rail access grants' economic benefits. The programs could obtain job creation data either by requesting payroll documentation directly from the companies or verifying reported employment from Virginia Employment Commission payroll employment records.

Job creation performance could also be adopted to help determine whether road and rail access grants should be recaptured. Including job creation as a recapture provision would better align these grants with several of the state's other economic development grants that have recapture provisions based on both job creation and capital investment performance. Statutory provisions are sufficiently broad that the Commonwealth Transportation Board could change program guidelines for the road and rail access grants. However, this change would include a fundamental shift in policy for these programs, which have not placed substantial attention on job creation to date. Therefore, legislative direction likely would be necessary.

RECOMMENDATION 14

The Virginia Department of Transportation should collect job creation projections from all Economic Development Access Program applicants and collect data on actual jobs created from each project that received a grant award at the end of the project performance period.

RECOMMENDATION 15

The Department of Rail and Public Transportation should collect data on actual jobs created from each project that received a Rail Industrial Access Program grant award at the end of the project performance period.

POLICY OPTION 3

The General Assembly could consider amending the Code of Virginia to require that job creation performance be one of the factors considered to determine if grant awards from the Economic Development Access Program and Rail Industrial Access Program should be recaptured.

Policy options for consideration. Staff typically propose policy options rather than make recommendations when (i) the action is a policy judgment best made by elected officials—especially the General Assembly, (ii) evidence suggests action could potentially be beneficial, or (iii) a report finding could be addressed in multiple ways.

VEDP should not be required to consult with Department of Small Business and Supplier Diversity for road access projects to improve administrative efficiency

Language in the Code of Virginia requiring VEDP to consult with the Department of Small Business and Supplier Diversity (SBSD) during its review of road access projects should be removed. Road access projects are reviewed by staff at VDOT and VEDP before submission to the Commonwealth Transportation Board for approval. Statute

requires VEDP to review projects to ensure they meet the program's "basic employer" (export-base) criteria and consult with SBSD in this review. However, this requirement dates back to when SBSD had a broader mandate as the Department of Business Assistance. SBSD also interacts with substantially smaller businesses (those with fewer than 250 employees, and for some programs, fewer than 50 employees) than those that typically receive road access grants, and it interacts with business for different purposes (such as certification for procurement). Thus, it does not appear that SBSD remains a relevant consultative agency for the program.

RECOMMENDATION 16

The General Assembly may wish to consider amending § 33.2-1509 of the Code of Virginia to remove the requirement for the Virginia Economic Development Partnership to consult with the Department of Small Business and Supplier Diversity to determine if projects seeking an award from the Economic Development Access Program are basic employers.

Appendix A: Study mandate

2020–2022 Appropriation Act
Passed as Chapter 1289 of the Acts Assembly, May 21, 2020

§ 1-11 Item 32 F

F.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 staff for this study included

- collection and analysis of national- and state-level financial and economic data and state agency incentive program data;
- analysis of incentive program industry targeting;
- program employment performance tracking;
- survey of local economic development staff;
- statistical analysis of incentive program effects and quantitative analysis of the economic and fiscal impacts of Virginia incentives using a dynamic economic model (See Appendix N, available online, for more detail on the analyses);
- interviews with agencies and stakeholders;
- review of other states' infrastructure and regional incentive programs; and
- review of documents and literature.

Collection and analysis of national- and state-level financial and economic data and state agency incentive program data

This report drew on several federal, state, and private industry sources of economic data. Some of this data was used primarily for descriptive purposes, including to highlight trends in state economic activity, such as coal mining employment and production (Table B-1).

Information from state agencies, including agencies that administer the grant programs reviewed, Virginia Employment Commission, and Department of Taxation was used for both descriptive and analytical purposes. Project-level information was aggregated to show characteristics of program users and features of the programs, including industry and employment size. Agency data was used in conjunction with other data, such as confidential Virginia Employment Commission (VEC) Quarterly Census of Employment and Wages (QCEW) payroll employment records, to track employment outcomes and conduct economic analyses. These analyses are described further in the sections that follow.

TABLE B-1
Multiple data sources were collected and used for a variety of analyses

Data source	Description of data	Analysis
Financial and economic data		
U.S. Energy Information Administration	Form EIA-860 ("Generator Data") 2003-2018; Domestic and foreign distribution of U.S. coal by state of origin, 2006–2018; Net power generation by source, 2001–2018; Coal productivity by state and mine type, 1990–2018	Analyze coal industry production, productivity, and distribution trends and power generation retirements.
Bureau of Economic Analysis	Local area personal income and employment	Analyze employment and income trends for enterprise zone localities, the tobacco region and coalfield region; quasi-experimental statistical analyses of VCEDA
Bureau of Labor Statistics, Local Area Unemployment Series	Local unemployed and labor force, 1990–2018	Analyze unemployment trends for enterprise zone localities, the tobacco region and coalfield region; quasi-experimental statistical analyses of enterprise zone and TROF programs
Bureau of Labor Statistics, Quarterly Census of Employment and Wages	County-level annual wage	Conduct quasi-experimental statistical analyses of enterprise zone and TROF programs
Bureau of Transportation Statistics, North American Transportation Atlas Database	Airports and North American Rail Lines	Analyze business site locations by rail and airport access
National Center for Educational Statistics Common Core of Data	Share of students in locality and zip code eligible for a discounted or free school lunch	Conduct quasi-experimental statistical analyses of enterprise zone program
U.S. Census Bureau, American Community Survey	Information on educational achievement levels of residents 25 years and older by county	Compute labor market characteristics of industrial parks
U.S. Census Bureau, American Community Survey	Poverty rate, share of population 25 years and older with college degree, share of population that is black for localities and zip codes	Conduct quasi-experimental statistical analyses of enterprise zone and TROF programs

Data source	Description of data	Analysis
U.S. Census Bureau, County Business Patterns, and Zip Code Business Patterns	Employment and average wages	Conduct quasi-experimental statistical analyses of enterprise zone, TROF, and VCEDA programs
U.S. Census Bureau, Population estimates program	Population by locality	Conduct quasi-experimental statistical analyses of enterprise zone and TROF programs
U.S. Census Bureau/ESRI ARCGIS Online	Working age population (18–64 year olds)	Analyze Tobacco Commission funded megasite access to working age labor force by drive time distances (30 and 60 minutes)
U.S. Department of Agriculture, Economic Research Service	Amenity index, Rural urban continuum, Urban influence codes	Analyze business site locations by topography and urban rural continuum. Model industrial park absorption rates. Conduct quasi-experimental statistical analyses of TROF program
Zillow	Home value index of all homes for localities and zip codes	Conduct quasi-experimental statistical analyses of enterprise zone program
Virginia incentive programs		
Department of Housing and Community Development	Real Property Investment Grant application data (Form EZ-RPIG)	Characterize Job Creation Grant and Real Property Investment Grant programs. Conduct quasi-experimental statistical analyses of enterprise zone program
Department of Rail and Public Transportation	Scores from scoresheet ratings of Rail Industrial Access Program applicants	Analyze score correlation with economic development and rail modal shift propensity
Department of Taxation	Tax credit utilization for the Coal Employment and Production Incentive and Coal Employment Enhancement tax credits	Computation of tax credit usage by fiscal year
Tobacco Region Revitalization Commission	Annual reports	Compute program spending by category
Virginia Economic Development Partnership	Shapefiles for Virginia industrial parks and enterprise zones	Compute characteristics of industrial parks and enterprise zones
Virginia Economic Development Partnership	Data on Virginia Business Ready Sites	Analysis of development costs, readiness assessment, and other characteristics of Virginia business sites
Other		
Census of Government, Annual Survey of State Government Finances	State tax revenue by tax category and fiscal year	Tax revenue impact analysis
IMPLAN	Regional SAM balances, institution industry demand, regional employment multipliers, study area industry data	Computation of export orientation and multiplier
REMI PI+	Demand by industry, GDP, personal income, and transfer receipts by year; value added and employment by industry	Tax revenue impact analysis. Computation of value-added per employee by industry for "but for" calculations
Site Selection magazine	List of U.S. Supersites, 2016	Benchmark comparison of Tobacco Commission megasites to other proposed and developed megasites
Virginia Employment Commission	Quarterly Census of Employment and Wages payroll employment records	Track employment performance and conduct quasi-experimental statistical analyses

SOURCE: Weldon Cooper Center.

Industry targeting analysis

Analysis of whether programs targeted projects likely to have the greatest economic impact was performed using data on location and industry of awarded projects and county level economic and industry data. All but one program met at least one indicator of high economic impact (Table B-2).

Project industry codes—based on North American Industry Classification System (NAICS) codes—were matched with IMPLAN industry codes using a NAICS/IMPLAN code crosswalk to assess the export orientation and magnitude of the employment multiplier for each project. Projects whose industries exported at least 50 percent of their output outside the state, and had Social Accounting Matrix (SAM) employment multipliers greater than two were judged to meet criteria for high economic impact. Project NAICS industry codes were matched with VEDP industry cluster targets to evaluate the extent to which projects align with the state's target industry strategy. These industries included corporate services, food and beverage processing, information/communications technologies, life sciences, manufacturing, supply chain management, and unmanned systems. Some industry targets (e.g. cyber security, logistics/distribution centers, and unmanned systems) are not well defined by NAICS codes.

TABLE B-2
All but one program met at least one indicator of high economic impact

	Indicators of high economic impact			State targeted industries		
Program	**% projects with high employment multiplier**	**% projects that are export-base**	**% projects that met at least 1 indicator**	**% of awards**	**% of projects**	**Number of grants/credits**
Coal Employment and Production Incentive Tax Credit	100%	48%	100%	3%	48%	23
Coalfield Employment Enhancement Tax Credit	72	40	72	6	7	99
Economic Development Access Program	63	38	79	52	54	24
Job Creation Grant	58	66	82	45	36	505
Rail Industrial Access Program	66	41	81	28	25	32
Real Property Investment Grant	14	11	20	7	6	1,435
Tobacco Region Opportunity Fund	55	64	91	32	34	277
Transportation Partnership Opportunity Fund	90	64	100	14	18	11
All programs	**46%**	**39%**	**59%**	**32%**	**29%**	**4,730**

SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: 'All programs' reflects FY10-FY18 projects where industry data available. See Economic Development Incentives 2019, JLARC, 2019. Economic Development Access Program projects include only those that received regular grants.

Employment performance tracking

Employment levels of businesses that received incentives between FY10 and FY18 were compared before (the year prior) and after businesses received incentives using VEC employment payroll records. Analyses were conducted at the program and project level.

Records matching

Program project records between FY10 and FY18 were matched with quarterly VEC payroll employment data between 2007 and 2018 using FEIN (Federal Employer Identification Number), company name, company location, and NAICS industry information provided by agencies.

Most grant programs provided the FEIN for each business. The FEIN is a unique nine-digit number that identifies a firm for federal tax purposes. Since firms often have multiple branch locations, a firm-level identifier is not adequate to identify a particular plant or establishment that benefitted from an economic development incentive. FEIN information, when available, was used in conjunction with other available project record information such as firm name, street and PO Box address, and industry code to identify the particular facility using an unemployment insurance account (UIACCOUNT) and reporting unit (REPTUNT), which are identifiers in the VEC data. If multiple establishments were co-located, the largest establishment employment record was selected.

The majority of projects for which FEIN information was available were matched to VEC data (Table B-3). It cannot be ruled out that some mismatches occurred as a result of this procedure. Mismatches were most likely to occur for large, complex firms with fragmented tax reporting involving multiple federal tax and unemployment insurance accounts.

TABLE B-3
Match rate between project records and VEC employment records

Program	Number project records	Number project records matched to VEC employment records	Match rate
Economic Development Access Program	22	13	59.1%
Transportation Partnership Opportunity Fund	3	2	66.7
Rail Industrial Access Program	26	19	73.1
Tobacco Region Opportunity Fund	82	64	78.0
Job Creation Grant	154	150	97.4
Total	**287**	**248**	**86.4%**

SOURCE: Weldon Cooper Center.

The total match rate was approximately 86.4 percent, which is slightly lower than the 92.6 percent rate obtained in an earlier analysis of small business and workforce programs (JLARC 2018) but compares favorably to other national and state establishment level studies.

Employment statistics

Two employment statistics were calculated. The first statistic showed how completed projects performed on an aggregate basis by program in terms of job creation attainment relative to what was reported in agency records. Projects were tracked before and after they received notification of award, between 2008 and 2018. Annual project cohorts were "stacked" by the year of award (-1, 0,+1,+2,+3,+4, etc.). Thus, for a FY12 award cohort, 2010 represents year -1, 2011 year 0, 2012 year 1, etc. Aggregate project employment change over the period (i.e., year 1, compared to the baseline year (-1) value). These employment change estimates were compared to aggregate job creation completion figures (or in the case of the transportation grant programs, job creation goals) and a percentage calculated, with 0% representing no aggregate reported job creation relative to the aggregate completion reported by agencies and 100% representing total completion of agency reported aggregate completion.

A second statistic computes the percentage of completed projects that had met the job completion benchmarks or job creation goals for each program. To simplify the analysis, this statistic was calculated by identifying the maximum employment change over the award year and comparing it with the project job creation baseline number.

These measures could either undercount or over count aggregate and project-level employment completion rates. First, failure to correctly match project records and VEC establishment data would introduce one source of bias. Second, the annualized unit used to verify employment goal attainment may not correspond to the exact benchmark starting and ending dates used in assessing job creation attainment. Thus, monthly or quarterly data would be more appropriate for appraising job creation completion than the annual averages used here. A third source of estimation error is the project completion statistic; projects are assessed based on maximum employment change with regard to the base year rather than exact start to finish dates, which in some instances are now available from program records.

Survey of local economic development staff

A survey of local economic development staff (or their equivalent) for each of Virginia's 133 counties and independent cities was conducted (Table B-4). The survey was designed to

- gauge the relative importance of Virginia incentives in local business recruitment and expansion efforts,
- assess utilization and importance of local incentives,
- estimate supply and demand for business ready sites, and
- assess state and local enterprise programs.

Survey respondents were also asked to assess the importance of various industrial location and expansion factors, including traditional economic location factors such as market accessibility, transportation access, labor availability, etc. on business decisions and to evaluate how well the state performed on those dimensions. Contacts were identified from a list of local economic development contacts published on the Virginia Economic Development Partnership's website. Only one contact was identified for each locality, usually the most senior contact (e.g., economic development director). For smaller and rural communities, the chief contact was sometimes a county administrator. The survey

was administered through Qualtrics online software with mail, email, and phone contacts and follow-ups. Sixty-seven completed responses were received for a response rate of slightly over 50 percent.

TABLE B-4
Local economic development staff survey questions

Question area/questions
State economic development incentive usefulness and improvements
Ratings of usefulness of incentive programs
Priorities for state economic development incentives
Programmatic or procedural improvements needed
Other economic development incentives needed
State economic development incentive use in local development
Usage of state economic development incentives
Types of state economic development incentives used
Amount and number of state economic development incentives used
Role of state economic incentives in firm location/expansion decisions
Number of times firm location/expansion failed because of lack of incentives
Other types of economic development incentives needed
Rating of Virginia incentives compared with other states
Usage of local economic incentives
Offering of local economic incentives
Types of local economic incentives offered
Value and number of local economic incentive offered
Firm location factors
Importance of location factor for firm formation/location/expansion
Rating of how Virginia compares with other states on location factor
Ways that state could assist firm growth
Assessment of supply and demand for business ready sites
Assessment of how much site inventory inhibits local development
Availability of business/industrial parks with at least 100 acres
Characteristics of business/industrial parks
Types of firms located in industrial parks (e.g. startups, relocations, expansions)
Characteristics of planned business/industrial parks
Recommendations regarding Virginia Business Ready Sites Program
Assessment of state and local enterprise zone programs
State designated enterprise zone presence
Reason(s) for not having state enterprise zone

Question area/questions
Local enterprise zone presence
Local incentives and regulatory relief offered in enterprise zones
Effectiveness of enterprise zone program
Recommendations regarding state enterprise zone programs
Other
Locality
Level of involvement in business recruitment and expansion
Availability of local formal economic development strategic plan
Full-time equivalent employees

SOURCE: Weldon Cooper Center.

Interviews with agencies and stakeholders

Weldon Cooper Center and JLARC staff held meetings and phone conference calls with staff from agencies administering the incentives evaluated for this report and include the

- Department of Housing and Community Development;
- Department of Rail and Public Transportation;
- Department of Taxation;
- Tobacco Region Revitalization Commission;
- Virginia Coalfield Economic Development Authority;
- Virginia Department of Transportation;
- Virginia Economic Development Partnership

In addition, staff from the Virginia Coal and Energy Alliance were provided the opportunity to discuss trends in the Virginia coal industry, the importance of the tax credits, and ways the programs could be altered or improved, but they declined to participate.

In December 2019 and January 2020, Weldon Cooper Center and JLARC staff interviewed representatives for each of the nine Tobacco Commission megasites. The names and contact information for each of the parks were provided by the Tobacco Region Revitalization Commission. The interviewees included economic development directors, and for smaller localities, county managers. The industrial site representatives were asked about

- reasons they decided to develop an industrial park,
- industrial park demand and supply characteristics within their region,
- features of the funded industrial park,
- availability of supporting documents for the industrial park (feasibility studies, marketing plans, operational plans, and capital development budget and build out plans), and
- challenges/obstacles in developing the park.

Six of the park representatives participated in telephone conference calls and three representatives provided written responses to the questions.

Review of infrastructure and regional incentives in other states

Weldon Cooper Center staff reviewed several sources to obtain information on comparable infrastructure and regional incentives offered by other states. Sources often varied by the type of incentive, since there is no authoritative comprehensive source on all state incentives. The Council for Community and Economic Research's (C2ER) online State Business Incentives Database was used to confirm and supplement information for all of the programs. For the coal tax credits, supplemental information was obtained from the Commerce Clearing House or CCH (2018) and PFM Group Consulting LLC (2017). For the rail and road incentives, additional state-level program information was obtained from PFM Group Consulting LLC (2016) and National Academies of Sciences, Engineering, and Medicine (2017).

Review of documents and literature

During this study, several sources of information, including documents, reports, and published or unpublished research, were examined. The purpose of this literature review was to understand the purpose and goals of Virginia incentive programs, industry site location factors, role and importance of economic incentives, market imperfection rationales for programs, and methodological approaches for quantifying the economic and tax revenue impacts of economic incentives. Sources consulted included

- materials describing the programs, Virginia agency reports describing program usage, and legislative statutes authorizing the programs;
- state evaluations and economic impact studies published by state agencies or their consultants in other states;
- scholarly books and articles that examine the economic effects of industrial parks, enterprise zones, targeted economic development aid for contiguous distressed regions (such as Appalachia and the Mississippi Delta region), transportation infrastructure funding, and natural resource extraction incentives; and
- studies that attempt to quantify the economic impact of economic development incentives using ex-ante and ex-post modeling methods.

Appendix C: Economic benefits and return in revenue of each Virginia incentive is assessed relative to other incentives

Economic development incentives vary in their economic benefit and return in revenue to the state. To provide context to the economic benefits and return in revenue generated by each incentive, incentives have been categorized as having a negligible, low, moderate, or high economic benefit and return in revenue. To determine the category, each incentive is scored from 0 to 3 on four measures: the amount of jobs, Virginia GDP, and personal income generated per $1 million spent on the incentive and the return in revenue generated per $1 spent on the incentive. The scoring is based on the distribution of all 32 incentives reviewed to date for each of the four measures, with a score of '0' meaning the incentive fell below the 25th percentile (or first quartile) of the distribution for the measure and a score of 'three' meaning the incentive was in the highest quartile (above the 75th percentile) for the measure.

The scores for the three measures of economic benefits (jobs, Virginia GDP, and personal income) were averaged to arrive at an overall average score for economic benefits for each incentive. Incentives with average scores for the three measures near '0' were categorized as having negligible economic benefits relative to other incentives. Incentives with average scores near '1', '2', or '3' were categorized as having low, moderate, or high economic benefits, respectively, relative to other incentives. For return in revenue, an incentive with a '0' score on that measure was categorized as having a negligible return in revenue relative to other incentives. An incentive with a score of '1', '2', or '3' was categorized as having a low, moderate, or high return in revenue, respectively, relative to other incentives.

An incentive's category may change over time. Only 32 of more than 70 Virginia economic development incentives have been evaluated so far and, because incentives are categorized relative to other incentives evaluated, incentives may change categories as additional incentives are evaluated each year. Once all incentives are evaluated, re-evaluation of incentives will begin. The category may change for re-evaluated incentives because of provision of new or improved outcomes data, program changes and changes to the state economy and industry mix.

Of the incentives evaluated through September 2020, grants tend to generate moderate or relatively high economic benefits and returns in revenue. Tax incentives tend to generate low or negligible economic benefits and returns in revenue (Table C-1). Grant programs have higher economic benefits than other types of incentives because a higher percentage of grant funding is directed to businesses in manufacturing industries, which generally have high economic multipliers and pay higher wages. In addition, businesses that receive grants must agree to create jobs and make capital investments, and usually above minimum levels, but other incentive may not have similar requirements for businesses to receive an award.

TABLE C-1
Grants tend to generate higher economic benefits and returns in revenue than tax incentives

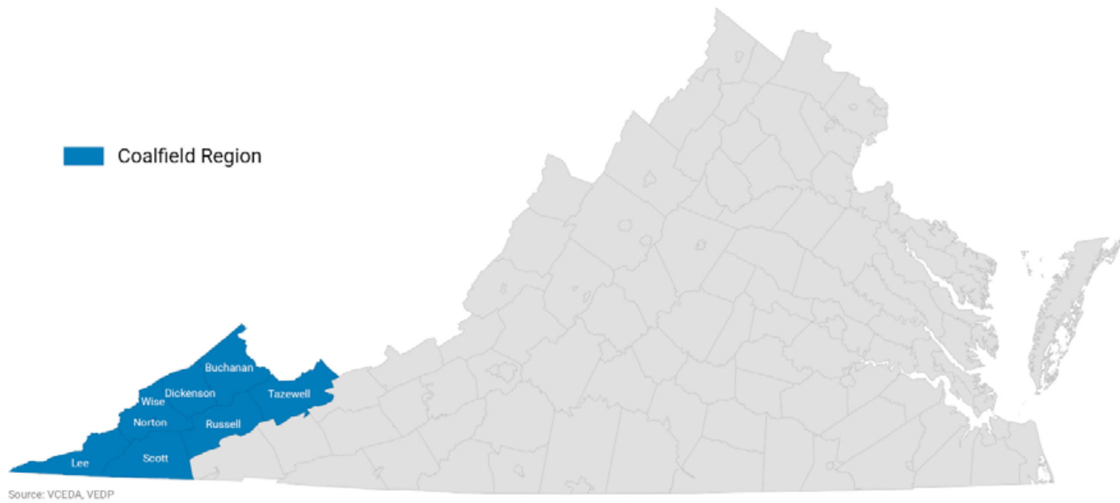
Incentive	Economic benefits	Return in state revenue
Biodiesel and Green Diesel Tax Credit	●○○○	●●○○
Coal Employment and Production Tax Credit	●○○○	●○○○
Coalfield Employment Enhancement Tax Credit	●○○○	●○○○
Film exemption	●○○○	●○○○
Green Job Tax Credit	●○○○	●○○○
Recyclable Materials Tax Credit	●○○○	●○○○
Telework Tax Credit	●○○○	●○○○
Transportation Partnership Opportunity Fund	●○○○	●○○○
Economic Development Access Program	●●○○	●○○○
Motion Picture Production Tax Credit	●●○○	●●○○
Pollution control equipment exemption	●●○○	●○○○
Real Property Investment Grant	●●○○	●●●○
Semiconductor manufacturing exemption	●●○○	●○○○
Semiconductor wafer exemption	●●○○	●●○○
Tobacco Commission Megasite Grant	●●○○	●●○○
Virginia Business Ready Site Program	n.a.	n.a.
Worker Retraining Tax Credit	●●○○	●●○○
Data center exemption	●●●○	●●●●
Governor's Motion Picture Opportunity Fund	●●●○	●●●○
Job Creation Grant	●●●○	●●●○
Manufacturers SSF apportionment	●●●○	●●●○
Qimonda (semiconductor) grant	●●●○	●●●○
Rail Industrial Access Program	●●●○	●●●○
Tobacco Region Opportunity Fund	●●●○	●●●○
Cash Collateral Program	●●●●	●●●●
Economic Development Loan Fund	●●●●	●●●●
Loan Guaranty Program	●●●●	●●●●
Micron (semiconductor) grant	●●●●	●●●●
Small Business Investment Grant	●●●●	●●●●
Small Business Jobs Grant	●●●●	●●●●
SWaM Loan Fund	●●●●	●●●●
Virginia Jobs Investment Program	●●●●	●●●●

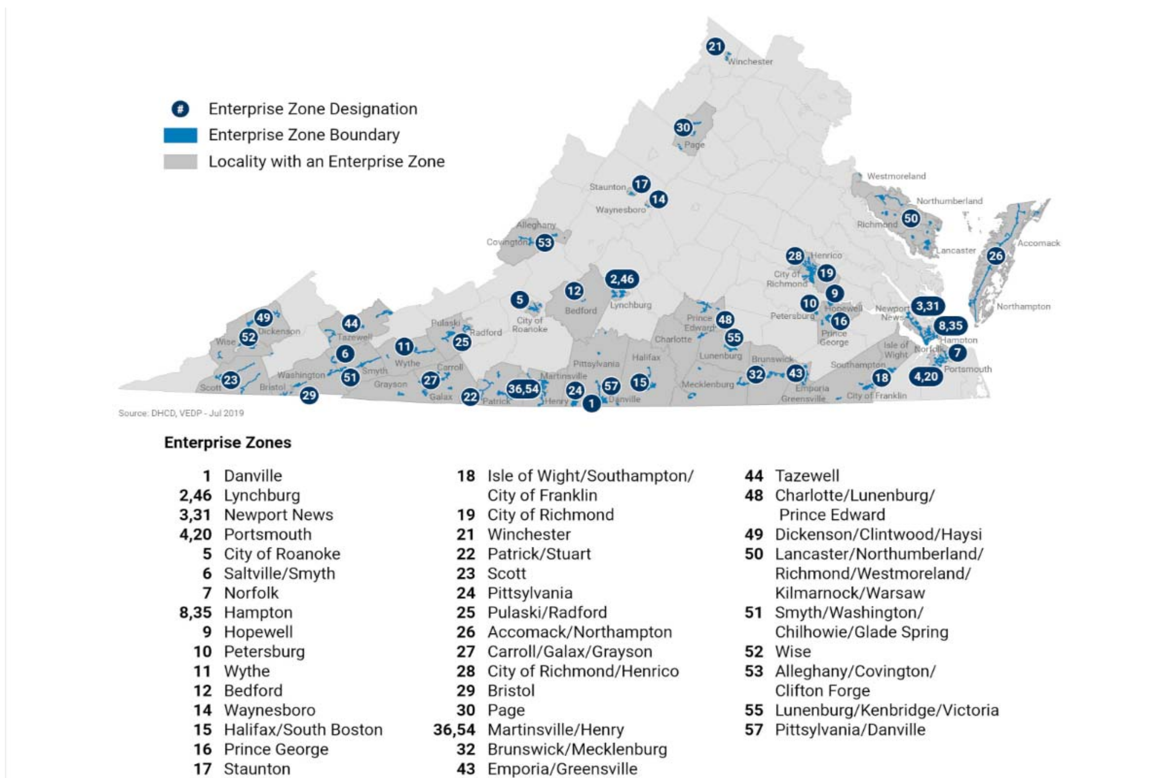
Negligible ●○○○ Low ●●○○ Moderate ●●●○ High ●●●●

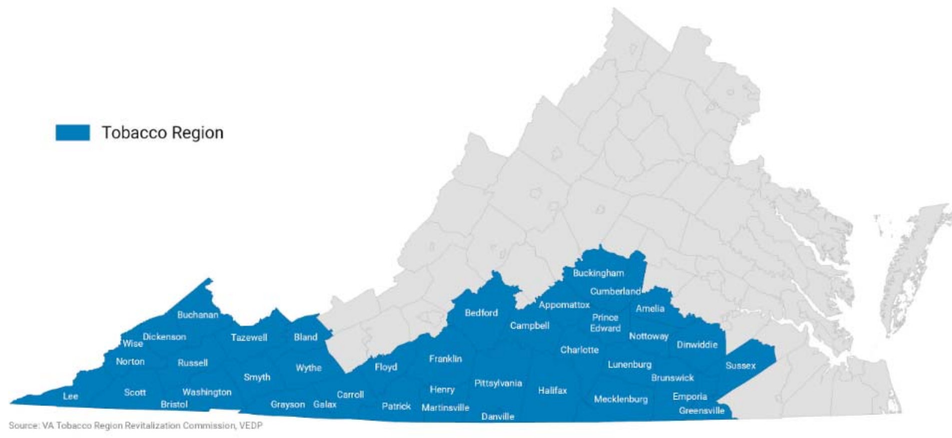
SOURCE: JLARC staff analysis of economic impact and return in revenue estimates generated by the Weldon Cooper Center.
NOTE: Includes incentives evaluated as of September 2020. Time period for which incentives are evaluated varies. Estimates are sensitive to the assumptions used to determine the percentage of economic activity that can be attributed to the incentive.

Appendix D: Maps of Virginia's coalfield region, enterprise zones, and tobacco region

FIGURE D-1
Virginia's coalfield region, enterprise zones, and tobacco region







Tobacco Region

Amelia
Appomattox
Bedford
Bland
Bristol
Brunswick
Buchanan
Buckingham
Campbell
Carroll
Charlotte
Cumberland
Danville
Dickenson
Dinwiddie
Emporia
Floyd
Franklin
Galax
Grayson
Greensville
Halifax
Henry
Lee
Lunenburg
Martinsville
Mecklenburg
Norton
Nottoway
Patrick
Pittsylvania
Prince Edward
Russell
Scott
Smyth
Sussex
Tazewell
Washington
Wise
Wythe

SOURCE: VEDP.

Appendix E: State coal tax incentives

Twenty-three states produced coal in 2018 with two states (Wyoming and West Virginia) accounting for over half of production. Fifteen of these states (representing 41 percent of production) offer some kind of tax incentive for the coal industry (Table E-1). The incentives vary in form and size. In most states, coal producers pay a coal severance tax on gross value or receipts or coal tonnage. This tax is charged for "severing" the coal from the ground and represents a tax on natural resource use. In addition, utility taxes are charged on electricity production (kilowatt hour) or gross receipts.

States offer four basic categories of coal tax credits:

- tax credit for coal production like Virginia's coalfield tax credit (seven states);
- tax credit for new or less environmentally damaging coal burning power generation facilities such as "clean coal" (five states);
- tax credit for coal purchase like Virginia's electricity generator tax credit (four states); and
- tax credit for exploration when new mines result (two states).

Seven states offer coal production tax incentives, including Alabama, Arkansas, Colorado, Kentucky, Oklahoma, Virginia, and West Virginia. Some states also provide different incentive amounts based on the type of coal mined or difficulty of extracting the coal based on coal mining method (i.e., surface or underground), or coal deposit properties (e.g., seam thickness), including Kentucky, Virginia, and West Virginia. In addition, some states restrict eligibility to new (not ongoing) operations (e.g., Alabama) or when coal market conditions are weaker (i.e., Oklahoma). Credit values vary from a low of $1 per ton (Alabama) to a high of $3 per ton (Arkansas). Utah offered a steam coal tax credit equal to $1 per ton of state steam coal sold from a permitted mine to a purchaser outside the U.S., but it was repealed in 2011.

Five states offer tax credits to clean coal type power generation facilities including Indiana, Kentucky, New Mexico, North Dakota, and Ohio.

Four states provide coal purchase tax credits, including Arizona, Oklahoma, Virginia, and West Virginia. Two states have recently repealed their tax credits. Kentucky repealed its power generation tax credit (coal incentive tax credit) in 2018, which provided $2 per ton tax credit for electric power. Maryland's $3 per ton coal purchase tax credit for utilities is set to expire in 2021. Two other states had such credits but repealed them much earlier. Ohio once offered a $3 per ton purchase tax credit, but it expired in 2004 (Bowen, Christiadi, and Deskins 2015). Colorado's $1 per ton credit expired in 2005.

Two states, Alaska and Montana, offer coal exploration and investment tax incentives, reducing taxpayer liability for exploration activities when new mines are opened.

In addition, five states offer unique tax credits that are not easily categorized, including Colorado, Kentucky, Ohio, Pennsylvania, West Virginia. For example, Colorado offers tax credits for business contributions to help communities mitigate impact problems resulting from the mining startups or expansions; Pennsylvania offers a tax credit for reuse of coal refuse and West Virginia provides tax credits to coal producers for purchasing mine safety technology.

West Virginia introduced aggressive new coal industry tax incentives during its 2019 legislative session in an effort to boost the coal mining industry, reducing its coal severance tax to 3 percent from 5 percent. The state also adopted a new investment tax credit for purchase of equipment and machinery for starting or expanding mines.

TABLE E-1
Coal production and consumption incentives by state

State	Incentive	Characteristics	Other coal-related incentives
Alabama	Coal Production Tax Credit	Alabama coal producers are permitted a $1 per ton tax credit for increased production of coal over a base year.	
Alaska			Exploration Incentive Credit Program is a nonrefundable income tax credit of up to 50% of liability related to expenses incurred in exploration when production occurs.
Arizona	Credit for Taxes Paid for Coal Consumed in Generating Electrical Power	Corporations that buy coal to generate electrical power in state can claim credit. The credit is equal to 30% of the transaction privilege or use tax paid by the corporation, or the seller of the coal, on the purchase.	
Arkansas	Coal Mining Income Tax Credit	A coal mining enterprise or an eligible transferee may claim a credit against their Arkansas corporate income or insurance premiums tax liability. The amount of the credit is $2 per ton of coal mined, produced, or extracted in Arkansas. An additional credit of $3 per ton is allowed for each ton of coal mined in excess of 50,000 tons. The credit is earned only if the coal is sold to an electric generation plant for less than $40 per ton excluding freight charges.	

State	Incentive	Characteristics	Other coal-related incentives
Colorado	Coal Severance Tax Credit	Credit is for 50% of the severance tax liability for coal produced by underground mines and an additional 50% for lignite coal.	Mining or Milling Impact Assistance Tax Credit. Tax credit is allowed for eligible contributions to assist in solving impact problems of local governments resulting from the initiation or expansion of mining operations in state.
Indiana			Coal Gasification Technology Tax Credit provided for taxpayers who place into service an integrated coal gasification power plant or fluidized bed combustion technology. Amount of credit is 10% of first $500 million invested in integrated coal gasification power plants and 5% of investment that exceeds $500 million. Amount of credit for fluidized bed combustion is sum of 7% of investment on first $500 million and 3% for amount above $500 million.
Kentucky	Thin Seam Tax Credit	Credit against severance tax based on thickness of seams and position above or below drainage for underground mining. Credit ranges from 2.25% of gross receipts to 3.75% based on seam thickness and position above and below drainage.	(1) Clean Coal facilities tax credit of $2 per ton of coal that is purchased and used to generate electric power at a certified clean coal facility. (2) Kentucky Industrial Revitalization tax credit available to companies that revitalize a coal mining facility in imminent danger of closing or that has closed as well as manufacturers that burn at least 3 million tons from the project. Facilities must employ a minimum of 500 people and intend to produce at least 3 million tons from the project. (3) Coal Conversion tax credit is for converting non-coal heat generating facilities to coal utilizing ones. Amount of credit is equal to 4.5% of coal purchase price allowed for up to 10 consecutive years against income tax liability.
Maryland	Maryland Mined Coal Tax Credit	A cogenerator or electricity supplier that is not subject to the public service company franchise tax may claim a credit against income tax for state mined coal that the cogenerator or electricity supplier purchased in the taxable year. The credit is $3 per ton of mined coal purchased during the taxable year. However, the credit is being phased out. For 2015 through 2020, only $3 million in total credits will be allowed.	

State	Incentive	Characteristics	Other coal-related incentives
Montana			Mineral and Coal Exploration Incentive Credit may reduce up to 50% of a taxpayer's corporate income tax in a tax year in which the taxpayer has income from mining operations that developed out of exploratory work.
New Mexico			Advanced Energy Tax Credit provides a tax credit for the development and construction of qualified generation facilities, including clean coal facilities. The credit (against a variety of taxes) is equal to 6% of development and construction expenses.
North Dakota			Coal Severance Tax Reduction of 50% to the 37.5-cent severance tax is allowed for coal used in a cogeneration facility that is designed to use renewable resources to generate 10% or more of its energy output.
Ohio			The Qualified Energy Project Tax Exemption provides owners (or lessees) of clean coal and cogeneration energy projects with an exemption from the public utility tangible personal property tax. (2) Ohio Coal Research and Development Program provides grants involving utility power producers, clean coal technology developers, research and development firms, and universities for commercialization and application of technologies that use state coal as a fuel or chemical feedstock.
Oklahoma	Oklahoma Mined Coal Tax Credit	A credit is allowed against state corporate income tax, utilities tax, and insurance gross premiums tax for taxpayers providing water, heat, light, or power as utilities or manufacturing operations in the state. Amount of the credit equals $2.85 per ton for each ton of state mined coal purchased by the taxpayer. An additional credit is allowed in the amount of $2.15 per ton for each ton of state coal purchased by the taxpayer; this additional credit may not be claimed or transferred prior to 2008.	Coal Price-Based Credit of $5 per ton of coal is available for taxpayers in the state primarily engaged in mining, producing, or extracting coal during any month in which the monthly average price of coal is less than $68 per ton. The credit can be claimed against the corporate income tax, utilities tax, and insurance gross premiums tax.

State	Incentive	Characteristics	Other coal-related incentives
Pennsylvania			Coal Refuse Energy and Reclamation Tax Credit is for facilities that combust coal refuse or fuel composed of at least 75% of qualified coal refuse, uses at a minimum a circulating fluidized bed combustion unit, and uses ash produced by the facility to reclaim mining affected sites. Credit equal to $4 multiplied by the tons of qualified coal refuse used to generate electricity at an eligible facility in state. Total issued credits may not exceed $10 million per year. Single facility cannot receive more than 22.2% of tax credits
Virginia	(1) Virginia Coal Employment and Production Incentive Tax Credit (2) Coalfield Employment Enhancement Tax Credit.	(1) Tax credit for Virginia coal that is purchased and consumed by Virginia electricity generators. Equal to $3-per-ton. (2) Tax credit for metallurgical coal and coalbed methane producers based on mining method, and for underground mining, seam thickness.	
West Virginia	(1) Thin Seam Severance tax reduction, (2) Coal Loading Facilities Credit, (3) Energy Intensive Industrial Consumers Revitalization Tax Credit, (4) Central Appalachian Coal Severance Tax Rebate	(1) Baseline severance tax is 5% (dropping to 3% over next 3 fiscal years) of gross receipt; rate is reduced to 2% for seams between 37" and 45" and 1% for less than 37". (2) Credit equal to 10% of calculated qualified investment, applied over 10 years, to offset up to 50% of annual tax liability for B&O and severance tax for qualified coal loading facilities. (3) Tax credit is determined by Public Service Commission and taxpayer must make payment of 97% of amount to the public utility providing electric power with the remaining 3% going to the coal producer. (4) Rebate amount would be 35% of the cost of new machinery and equipment investment capped at 80% of state portion of several taxes attributable to additional coal capacity that results from investment.	(1) Credit for Purchase of Certain Mine Safety Technology provides credit equal to 50% of qualified investment and reduces business franchise tax and corporate income tax in that order. Credit is applied equally over a five-year period beginning with the taxable year in which property is first placed in service. Total amount of credit cannot exceed $100,000. No more than $2 million may be allocated during any fiscal year. (2) Waste Coal Severance Tax Reduction provides tax reduction of 2.5% for coal produced from gob piles and refuse.

SOURCE: Weldon Cooper Center analysis based on C2ER Business Incentives Database, CCH Publications (2018), and PFM Group Consulting LLC (2017).

Appendix F: VCEDA-funded projects

The Virginia Coalfield Economic Development Authority (VCEDA) made 10 grant and loan awards drawn from coal tax revenues totaling $20.7 million between FY10 and FY18 (Table F-1). Two awards (a loan to Appalachian Biofuels, LLC for $800,000 in FY15 and a grant to Pyott-Boone Electronics, Inc. for $250,000 in FY12) were canceled before any disbursements were made. The eight funded projects fell into three categories: low interest loans for business location and expansion (53 percent), regional industrial park development (20.4 percent), and education and workforce development (26.6 percent). Few of the projects can be fully evaluated at this time since they are either still underway or represent industrial park development, training, and other infrastructure construction that are long-term investments designed to attract business activity and improve worker productivity in the future. The actual cost of the $10.4 million in loans cannot be assessed until the projects are completed since they are revolving loans.

TABLE F-1:
VCEDA funded eight projects totaling $19.7 million between FY10 and FY18 with coal tax credit funds

Project name	Fiscal year	Award type	Description	Amount
Project Jonah	2018	Loan	Agribusiness industrial attraction project expected to create 200 jobs at average wage of $23.35 per hour and $237 million in capital investment. Loan was just issued.	$10.0M
Buchanan Co. IDA/Southern Gap Transportation & Logistics Center	2018	Grant	Construction of Southern Gap Transportation & Logistics Center for worker training to be operated by Southwest Virginia Community College.	3.7
Buchanan County IDA/Southern Gap	2010	Grant	Phase II development of Southern Gap megasite.	3.5
Russell County IDA/Cumberland Plateau Regional Ind. Park	2012	Grant	Additional development of Cumberland Plateau Regional Industrial Park.	0.5
Southwest Va. Community College Educational Foundation	2018	Grant	Workforce development training grant. As of October 10, 2019, 455 students have been trained and 127 students have received National Career Readiness Certificate testing using funding. Project is ongoing.	0.5
Buchanan County IDA/EWI Cybersecurity Program	2018	Grant	Workforce development training grant for Cybersecurity Mentorship and Co-Op Business Model pilot program in Buchanan County. Project is ongoing.	0.5

Project name	Fiscal year	Award type	Description	Amount
Mountain Empire Community College Foundation	2018	Grant	Workforce development training grant. As of 10/31/2019, 285 students have been supported with funding. Project is ongoing.	0.5
Tadano Mantis Corporation	2015	Loan	Project involves a company that produces construction equipment; expected to create 25 jobs paying an average $15.26 per hour and $2.5 million in capital investment. Loan has not yet closed.	0.4
Total				**$19.7M**

SOURCE: Virginia Coalfield Economic Development Authority

Appendix G: Enterprise zone incentives by state

Virginia is among 26 states with enterprise zone incentives (Table G-1). While states generally target enterprise zones to distressed areas, other features of the program typically vary across states. Unlike Virginia, most states offer tax credits or some other tax incentive rather than grants. Like Virginia, a number of other state programs allow localities to draw the boundaries of their enterprise zones (Georgia, Hawaii, Indiana, Iowa, Louisiana, Maryland, Missouri, Nebraska, New Hampshire, and New Jersey). Several states, like Virginia's Real Property Investment Grant, do not restrict eligibility to export-base industries and allow businesses in the accommodations, food services, retail, or tourism sectors to receive incentives, including states in the mid- and southeastern US, such as Alabama, Georgia, Maryland, South Carolina, and New Jersey. At least five states have ended their enterprise zone programs.

TABLE G-1
State enterprise zone incentives

State	Criteria	Geographic area	Incentives offered
Alabama	Population less than 50,000 or 5-year population growth is negative and has no more than 2 opportunity zones.	County	Tax credit based on income tax liability; credit for new capital investment. Credit for training new permanent employees in new skill areas.
Arkansas	*Ceased in 2003*		
Arizona	*Ceased in 2011*		
California	*Ceased in 2013*		
Colorado	Per capita income <75% of state average; population growth rate <25% of state average	Census tract or blocks	Tax credits for new hires, equipment, health insurance, R&D, vacant building rehab, commercial vehicle investment. Also funds various community development projects.
Connecticut	Poverty above 25%; unemployment rate 2x state average; 25% of population on public assistance.	Municipality	Tax credits for local property taxes and corporate business tax.
Florida	*Ceased in 2015*		

State	Criteria	Geographic area	Incentives offered
Georgia	(1) Pervasive poverty measure, (2) unemployment rate at least 10% higher than state or significant job dislocation, (3) building activity lower than development activity within local body's jurisdiction, (4) general distress and adverse conditions (population decline, health and safety issues etc.), (5) general blight evidenced by the inclusion of any portion of the nominated area in an urban redevelopment area.	Designated by locality	Property tax exemption; local abatement or reduction in occupation taxes, regulatory fees, building inspection fees, and other fees that would otherwise be imposed on qualifying business.
Hawaii	At least 25% of the population of each census tract shall have a median family income below 80% of the median family income of the county in which the census tract is located; or the unemployment rate in each census tract shall be at least 1.5 times the state average unemployment rate.	Delineations are at discretion of counties/cities. They must be located within contiguous census tracts that meet the criteria.	Businesses in eligible activities declining state income tax credit and unemployment insurance equivalent tax credit.
Illinois	Meet 3 or more criteria on list of 11 criteria, including unemployment rate, poverty rate, structure vacancy rates and other considerations.	Census tract	Exemption on retailers occupation tax; investment tax credit; enterprise zone job tax credit; state utility tax exemption; telecom excise tax relief
Indiana	Poverty > 25%; population between 2,000 and 10,500; 3/4-4 sq. mile area	Municipalities draw up lines	Inventory tax credit; investment cost credit; employment expense credit; loan interest credit; property tax investment deduction
Iowa	County wages; county poverty; county population loss; county aged population; city per capita income less than $12,500; poverty>12%; vacancy>10%; valuations of property low	Counties and cities draw their own lines	New jobs tax credit; sales, services, and use tax refund; investment tax credit; research activities tax credit; property tax exemption
Kentucky	*Ceased in 2007*		
Louisiana	Unemployment; per capita income; residents on public assistance	Parishes draw their own lines	New jobs credit; investment tax credit
Maryland	Unemployment; income, poverty; population loss	Political subdivisions draw their own lines	Income tax credit; property tax credits
Maine	Unemployment		Income tax credits
Michigan	No strict criteria. Localities make applications to state.	Contiguous land parcels	Property tax exemption
Minnesota	Unemployment rate	Covers the entire of 6 border municipalities	Tax credits for property, new employees, and equipment investment; debt financing credit on new construction.

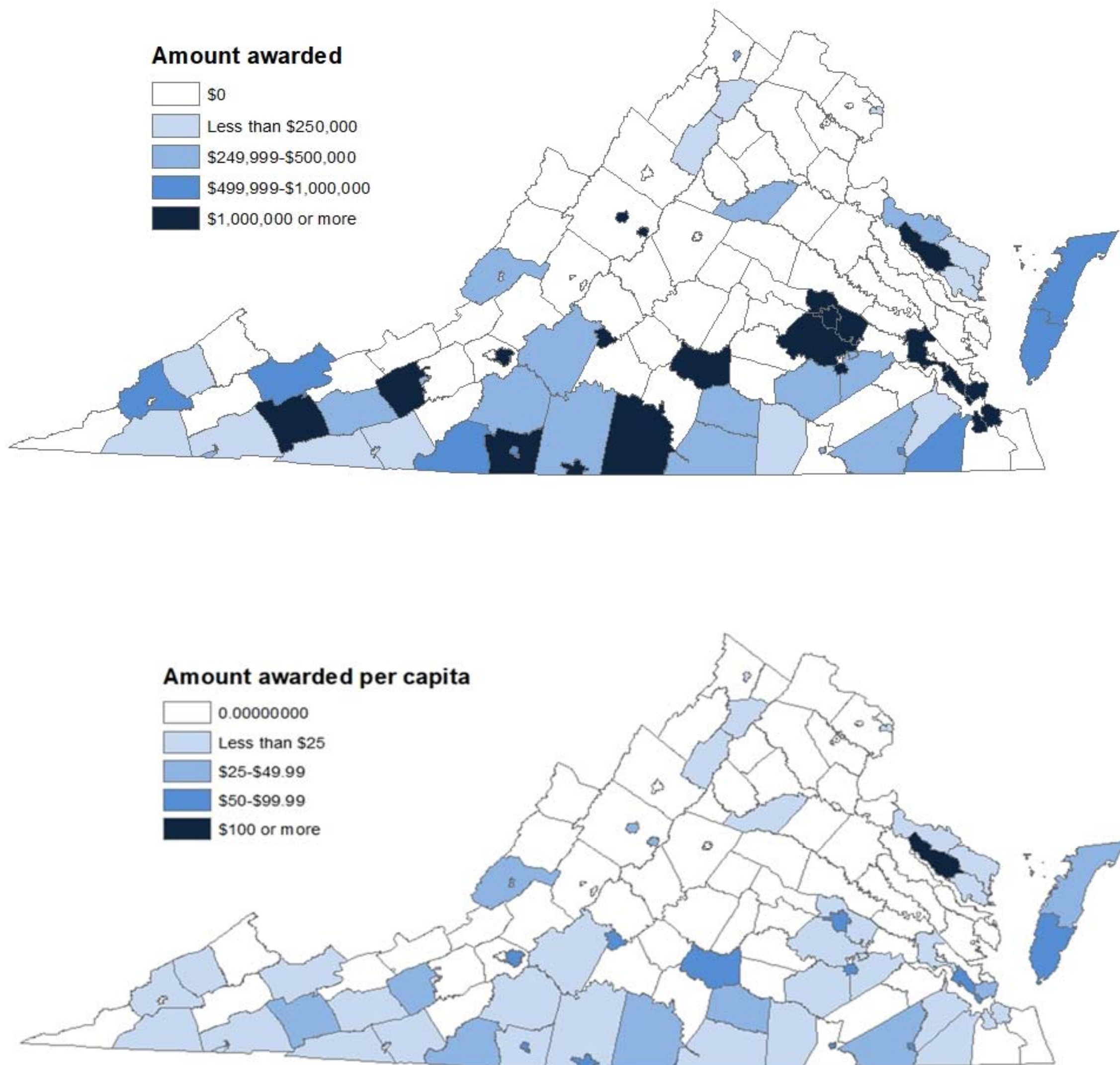
State	Criteria	Geographic area	Incentives offered
Missouri	60% of residents have income less than 90% of the median county or state income; above average unemployment	Municipalities draw their own lines; the zones must have at least 500 residents and no more than 1,000 in urban areas or 4,000 in rural areas.	Income tax credit plus zone specific incentives
Montana	Each county/city is allowed to apply.		Tax credit for new employees applied to either income tax or insurance premium tax
Nebraska	Unemployment; poverty; population loss	Drawn by cities, must be less than 16 square miles	
New Hampshire	No strict definition. Must have underused industrial parks or vacant land.	Drawn by localities when applying	Job creation tax credit
New Jersey	Unemployment and unemployment rate	Drawn by localities when applying	Job tax credits; corporate business tax credits; sales tax exemption; subsidized unemployment costs.
Ohio	Unemployment; population loss; commercial vacancy; income inequality.	Single contiguous boundary that meets criteria.	Exemption of real and/or personal property assessed values of up to 75% for up to 10 years
Oregon	Low income; unemployment	Non-contiguous local areas no more than 15 miles apart.	Property tax exemption
Rhode Island	Poverty, unemployment, income.	No more than 5 contiguous census tracts.	Wage tax credit
South Carolina	Unemployment	Counties	Job tax credits for retraining and creation
Texas	Poverty	Census block groups with high poverty have less stringent criteria.	Sales and use tax refund
Utah	Population or Indian Tribal Land	Cities/counties	Tax credits for new jobs and capital investment.
Virginia	Unemployment; adjusted gross income, School lunch eligibility.	Counties and cities draw their own lines	Real property development grant; Job creation grant
Wisconsin	Many indicators are considered. Preference is given to areas with the 'greatest economic need.'		Job creation tax credit; environmental remediation tax credit

SOURCE: Weldon Cooper Center analysis based on C2ER Business Incentives Database and review of state economic development agency websites.

Appendix H: Regional distribution of enterprise zone grants

The geographic distribution of Real Property Investment Grant and Job Creation Grant awards on a per capita basis differs. Real Property Investment Grant awards are more widely dispersed (Figure H-1). Higher usage occurs in urban areas, including the cities of Richmond, Roanoke, Lynchburg, Danville, Martinsville, and Petersburg. This pattern occurs because of the high percentage of projects that are commercial or mixed use, which are more abundant in urban areas.

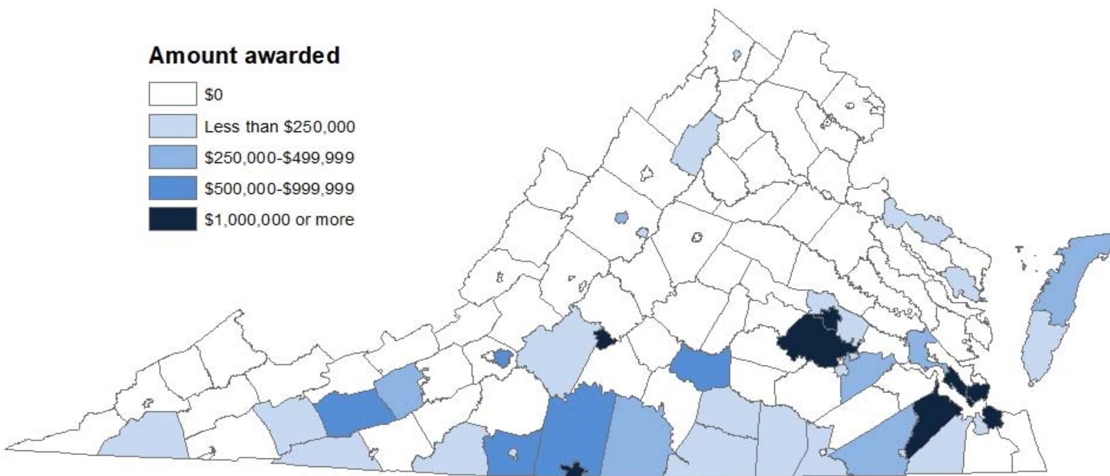
FIGURE G-1
Real Property Investment Grant awards are concentrated in Southside, Southwest, and the Richmond area, and, on a per capita basis, awards are higher in urban areas

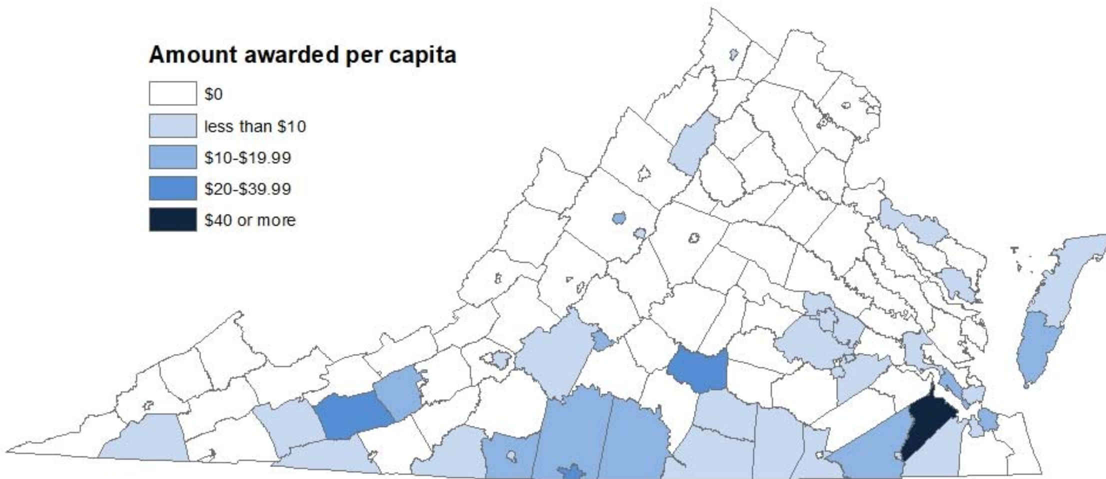


SOURCE: Weldon Cooper Center analysis of information from DHCD.

Job Creation Grants are awarded to businesses in fewer communities with enterprise zones, and in fact many communities with zones have made no job creation grant awards. Awards are more concentrated in Southside and Richmond areas (Figure G-2). Awards on a per capita basis are concentrated in the tobacco region, including the City of Danville, Wythe County, and Prince Edward County. Isle of Wight County, adjacent to the region, has the highest award amount. This pattern may suggest more active marketing of the program in the region, better opportunity to pair the program with other regional economic incentives such as the Tobacco Region Opportunity Fund, or greater ability to divert projects and jobs from neighboring states into Virginia because of their incentives.

FIGURE G-2
Job Creation Grants are more concentrated in the Southside and Richmond regions and, on a per capita basis, grants are concentrated in the tobacco region



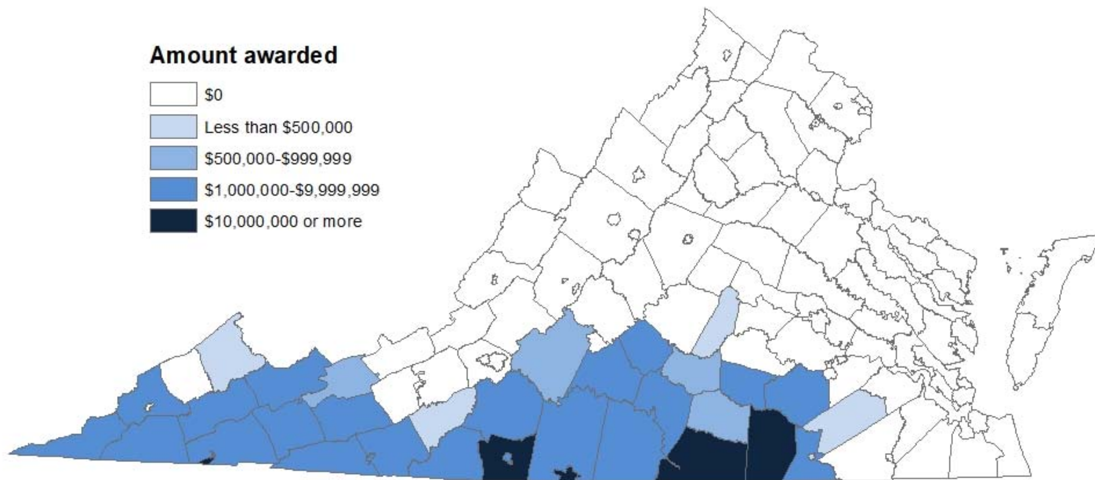


SOURCE: Weldon Cooper Center analysis of incentive award information from DHCD.

Appendix I: Regional distribution of TROF and megasite grants

All but four localities within the tobacco region received TROF funding, with no awards in Amelia, Buckingham, and Dickenson counties and the city of Emporia. The largest awards are in Brunswick, Henry, and Mecklenburg counties and the city of Danville (Figure I-1).

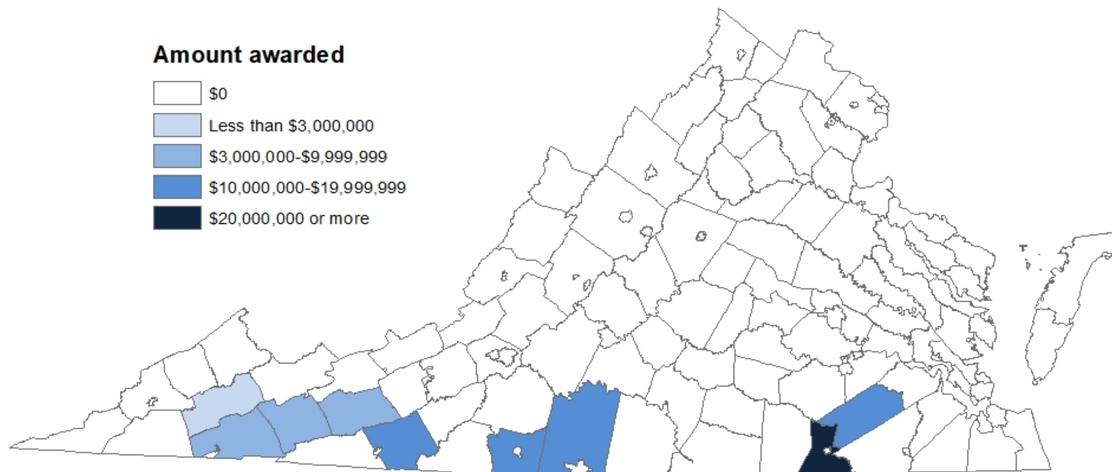
FIGURE I-1
TROF awards were made to 36 of the 40 Tobacco Region localities



SOURCE: Weldon Cooper Center analysis of information provided by the Tobacco Region Revitalization Commission.

Megasite grants funded industrial sites in nine localities in the tobacco region (Figure I-2). Greensville County received the largest grant amount for the Mid-Atlantic Advanced Manufacturing Center.

FIGURE I-2
Megasite grants funded parks in nine localities in the tobacco region



SOURCE: Weldon Cooper Center analysis of information provided by the Tobacco Region Revitalization Commission.

Appendix J: State site certification programs

The number of states offering site readiness programs has grown rapidly in recent years. North Carolina offered one of the first programs in 2001; by 2008 15 states had a program, and approximately half of states now operate a program (Table J-1). The characteristics of these programs vary widely, though all assert that they provide evidence of site readiness.

- **In-house or external certification**. Some states provide certification services using the resources of agency staff while others rely on external consultants (e.g., engineering firms and site location professionals) to assess and certify sites. Some states also utilize a review committee, often made up of diverse professional stakeholders (e.g., economic development professionals, engineers, utility representatives, transport/rail representatives) to conduct the assessments.
- **Due diligence**. For states that operate their programs in-house, often agency staff will review readiness using departmental checklists of items required to demonstrate full readiness. In some instances, local site owners or controllers complete the checklists rather than engage state agency staff or third-party professionals.
- **Grant versus fee-for-service.** Some states provide partial or full funding for localities and other local and regional economic agencies to conduct the site assessment, either using staff or external consultant professionals. Other states offer the program as fee for services. At least two programs (Massachusetts and Michigan) recoup grant funds for business sites that are later sold at or above market price. Some programs (e.g., Georgia) are provided by regional utility companies rather than state economic development agencies.
- **Characterization versus development**. Approximately half of states (24 states) offer characterization services. Far fewer (11 states) offer resources for developing the sites once the sites have been certified, including both grant and loan programs. A handful of states do not offer site certification services but do provide grant/loan funds for speculative industrial and business site development.
- **Readiness tiers and industry readiness standards**. Some states certify whether sites are ready or not, without utilizing a site readiness scale like Virginia. Some states provide more detailed site readiness classifications, including ones for particular industry groups (e.g., food processing, logistics/distribution, data centers, rail dependent businesses). Some states characterize ready sites by the degree to which they meet other industry requirements for tract size and distance to various types of resources (e.g., seaport, airport, university).
- **State Site Inventory Usage**. Almost all states have online site location databases for search selection use. Some states require that sites are fully certified before they are marketed through their online site location portal while others list sites at various degrees of readiness, and some have no readiness level or certification requirements.
- **Recertification Processes**. The studies that underpin site certification, such as environmental phase I assessments, have a limited shelf-life of five years. Many state programs

mandate that sites recertify their sites, typically ranging from every two to five years. Minnesota requires sites to file an annual report that describes any changes in the business site status that might affect certification.

- **Entity Eligibility.** Some states restrict eligibility to local and regional public economic development agencies while others open their programs to private developers and public-private partnerships.

TABLE J-1
State business site economic development incentives

State	Site characterization/ certification	Characteristics	Site development	Characteristics
Alabama	Advantagesite	The program requires that community economic development organizations provide documentation for a proposed industrial site, including a set of standard data related to ownership/control, environmental and geotechnical conditions, and infrastructure status. Sites must also meet size, zoning, and accessibility requirements.	State Industrial Development Grant	A qualified public entity may request a grant for the preparation of project sites either for a speculative project or a specific qualified project. Eligibility requires the grantee to hold title to the project site. Projects must constitute industrial, warehousing, research activities or qualify as a headquarters facility. Grant amount is capped at $150,000. A certification by a registered engineer, architect, or grantee stating the actual capital costs and site preparation costs must be submitted.
Arizona	Arizona Rural Certified Sites	Sites certified under the program are designated and marketed as an Arizona Certified Site or Arizona Certified Building and featured on an online portal that provides detailed information about the site. Sites must be 5 or more developable acres of land or 5,000 or more square feet for buildings. Sites must have willing seller or lessee with established asking price, all utilities at the site or in close proximity, and no environmental liabilities with documentation.		

State	Site characterization/ certification	Characteristics	Site development	Characteristics
Georgia	Georgia Ready for Accelerated Development (GRAD) Program	To qualify for GRAD status, available sites must meet the program's due diligence standards, be reviewed by a third party and earn the final approval of a steering committee comprising public and private sector economic development professionals.		
Indiana	Indiana Site Certified program	Program recognizes three tiers of readiness: Silver, Gold, and Prime. Tiers are assigned based on readiness and site characteristics (size, location, other)		
Iowa	Certified Sites Program	A credentialed Iowa Certified Site has relevant site-related data and documentation and is designated as "development ready." Site due diligence is completed for locations certified through the program and resulting issues are mitigated, making the sites "risk free."		
Kansas	Certified Sites Program	Certification occurs through a technical advisory board. The state's certification designation may be extended to sites that use an outside consultant process to secure certification.		

State	Site characterization/ certification	Characteristics	Site development	Characteristics
Kentucky	Build Ready Sites	All Build-Ready sites must first meet agency criteria for Shovel-Ready Industrial Sites. In addition, the Build-Ready approval is based on an additional set of standards for infrastructure provision. For a site to be considered for Build-Ready status, site must meet all readiness standards. A proposal that outlines how each standard is met must be provided.		
Louisiana	Louisiana Certified Industrial Sites Program	Agency and an independent, third-party engineering firm certify status of site. Specific site details, such as zoning restrictions, title work, environmental studies, soil analysis and surveys, are assessed for compliance and authenticity. The site must consist of at least 25 acres that are buildable, industrially zoned and meet other requirements. A 25% match is required by entity/locality.	Louisiana Certified Industrial Sites Program	Site improvement funds are available to site owners, managers and regional ED organizations to assist with site engineering and basic due diligence. The program allows a 75% match for required site improvement work.
Massachusetts			Site Readiness Program	The program provides funding for predevelopment work, land acquisition, demolition of existing structures, and site preparation. Grantees are required to execute a grant agreement that provides that in most instances, the Commonwealth will be repaid from any net land sale proceeds, long-term lease revenue, or refinancing proceeds.

State	Site characterization/ certification	Characteristics	Site development	Characteristics
Michigan	Michigan Site Readiness Vetted Sites	Site is confirmed as available for sale and development, has appropriate planning/zoning, boundary survey, clear title, environmental conditions, soil conditions, and infrastructure in place or engineer-planned (cost & timeline). Site is listed on Zoom Prospector.	MEDC Site Readiness Program	Program provides funding for site infrastructure design engineering; land assembly activities, specialized marketing support, and matching funds for other site development activities. The maximum grant amount is $100,000 per site.
Minnesota	Shovel Ready Certified Sites	Sites certified under the program have had all of the planning, zoning, surveys, title work, environmental studies, soils analysis and public infrastructure engineering completed prior to the site being offered for sale. Sites of at least 20 acres are favored. Application fee of $2,101+ is charged.		
Missouri	Missouri Certified Sites Program	Localities and regional economic development organizations are eligible. The certification of a site is performed through a comprehensive review of items including the availability of utilities, site access, environmental concerns, land use conformance, and potential site development costs.		

State	Site characterization/ certification	Characteristics	Site development	Characteristics
Nebraska			Site & Building Development Fund	Provides funding to create industrial-ready sites and buildings. The fund requires a 50:50 match. Eligible activities may include land and building acquisition, building construction or rehabilitation, infrastructure development and improvements, among other things. Grants are awarded to projects based on need and impact, including jobs and investment.
Nevada	Certified Sites Program	Certification fee for submittal is $1,000. Community provides information from checklist, and it is reviewed by a committee. Designated sites are available for online presentation.		
New Hampshire	ReadySetGo	Three certification levels: (1) Completion of non-binding concept plan/design review allowing the application for submitting, (2) site plan or master plan approval, (3) Level 2 and a utility plan.		
New York	Build Now program	Program provides Shovel Ready Certification to properties that meet the criteria for high-tech manufacturing warehouse/distribution/logistics and technology parks. Certification is available to sites that are suitable for the type of development proposed, has proper zoning and infrastructure, has completed the appropriate surveys and studies, and has received the necessary permits and approvals.		

State	Site characterization/ certification	Characteristics	Site development	Characteristics
North Carolina	Certified Sites Program	To obtain the Certified Sites designation, communities must undergo a stringent review process that demonstrates they've addressed 31 prerequisites. The information is reviewed by a steering committee.		
Ohio	SiteOhio	Site authentication guarantees that all utilities are on the property and have adequate capacity, that due diligence studies have been completed, and that all state and federal entities have provided concurrence with the studies. SiteOhio site authentication also ensures the site is free of incompatible uses, with no limitations or insurance liability based on surrounding properties. There is no fee for the initial application. Applicants successfully evaluated may be issued an approval letter. Thereafter, the applicant, upon payment of the $500 certification fee, will receive a "SiteOhio" certificate.	The JobsOhio Revitalization Program Loan and Grant Fund.	Primary focus is projects where the cost of the redevelopment and remediation is more than the value of the land (e.g., abandoned or underutilized site) cannot be competitively developed in the current marketplace. Revitalization projects typically retain and/or create at least 20 jobs at or above local market wage rate. Priority is given to job creation and retention projects within targeted industry sectors, those making additional capital investment beyond remediation and redevelopment and/or projects with wages higher than the average local wage rate.

State	Site characterization/ certification	Characteristics	Site development	Characteristics
Oregon	Certified Shovel Ready	Site owners enter the program by providing a commitment letter and supporting documents. Once the letter is accepted, Business Oregon hires a contractor to complete a Shovel Ready Report. If there is a significant constraint preventing the site from being certified, issues will be addressed in a pre-certification memo and owners can continue to move toward achieving full Shovel Ready Certification by addressing constraints on an as-needed basis.		
Pennsylvania			Business in Our Sites Grants/Loans	Provides grants and loans for the acquisition and development of key sites for future use by businesses, private developers, and others. However, the amount of the grant may not exceed $4 million or 40% of the total combined grant and loan award, whichever is less. Private developers are only eligible for loans.
Rhode Island			Site Readiness Program	Funding is available to support the planned or future development of specific sites. Program funds site specific planning and pre-development activities and development activities including infrastructure improvements, land assembly activities, site clearing or demolition, and building improvements.

State	Site characterization/ certification	Characteristics	Site development	Characteristics
South Carolina	(1) Palmetto Sites Program (2) South Carolina Industrial Site Certification Program	(1) Provides communities a process to obtain information about an industrial property through services provided by Site Selection Group, LLC. Applicants provide information about the site, host site visits from the consultants that include evaluation and assessment, develop a strategic development plan, and create a due diligence plan. State covers cost of Site and Community Readiness Evaluation Phase for publicly owned or controlled properties. Grants are also provided for completion of the Due Diligence Phase. (2) Provides industrial site certification of sites that have completed the Palmetto Site program and submitted required documents.	Rural Infrastructure Fund (RIF)	Funds are used primarily for "product development" such as industrial parks and sites in geographically targeted rural areas. Localities are eligible for RIF funds. Factors considered in eligibility include number of jobs, competitiveness of project, and other factors.
South Dakota	Certified Sites Program	Eligible applicants may be political subdivisions of the state or business improvement districts, and developers. Applicants submit checklist of items for various designations (business park, light industrial heavy industry, megapark) for review by department.		

State	Site characterization/ certification	Characteristics	Site development	Characteristics
Tennessee	Tennessee Certified Site	A reimbursable grant to assist communities with the preparation of sites through the Select Tennessee Certified Sites program is available. For a site to be eligible for this grant, the site must be publicly owned and determined to be an eligible candidate for certification by the Austin Consulting team following a visit to the site.		
Utah	Megasites program	Program is designed to identify and qualify large industrial sites to attract large-scale industrial projects. Each megasite must contain: at least 400 acres with 80% contiguous buildable area; limited number of owners, all of whom are willing to commit to the program; a two-year lock on listing price; defined state and local incentives; and site leader responsible for application. The certification process occurs in two stages: Stage 1: High-level due diligence that can be compiled by applicant, Stage 2: Technical data, some of which an engineering firm may need to provide. The program provides matching funds for Stage 1 (50% of costs) and Stage 2 (33% of costs) certifications.		
Virginia	Business Ready Site Program (Characterization)	Provides $5,000 with local match to eligible applicants (private/public) to contract with engineering consultant to characterize site using agency criteria and scale.	Business Ready Sites Program (Development)	Provides up to $500,000 in funding for development of industrial site to bring to higher level of site readiness.

State	Site characterization/ certification	Characteristics	Site development	Characteristics
Wisconsin	Certified Sites Program	Municipalities, economic development agencies, and private land owners/developers are eligible. Certification means that the key approvals, documentations and assessments most commonly required for industrial uses will already be in place to assist with an expedited development timeline. Aide is provided through discounted costs to the communities, as well as provision of technical assistance in the form of site review and analysis, outreach and training, strategy development, site search assistance and marketing through the Wisconsin website and "Locate In Wisconsin" tool.		
Wyoming	Site Evaluation and Certification Program	The fee for Phase II (Site Evaluation) is based on the size of the submitted site or park ($5,500 for small to $10,000 for large). Phase III which involves site assessment by consultant also involves a fee ($10,500-$15,000).	Business Ready Community Grant and Loan Program	Localities are the primary applicants to the program. Program provides grants and loans for public infrastructure including business and industrial parks or industrial sites infrastructure development.

SOURCE: Weldon Cooper Center Analysis based on C2ER Business Incentives Database and review of state economic development agency websites.

Appendix K: State transportation infrastructure incentives

According to a review of state economic incentive programs, about half of U.S. states have at least one road (25 states) or rail (25 states) infrastructure economic incentive program to encourage economic development through private business recruitment and retention (Tables K-1 and K-2). A handful of states, like Vermont, provide primarily loan assistance for road transportation improvements, and Montana, North Dakota, and Vermont for rail improvements. Several states with grant programs also have loan components (i.e., combination programs) or supplemental stand-alone loan programs. New Jersey offers a tax credit for business investment in public infrastructure. Some programs such as the Tennessee Fasttrack Infrastructure program fund multiple mode public infrastructure projects such as road, rail, port, etc. improvements, while some states offer general industrial site development programs that may potentially fund transportation infrastructure improvements on and off site. Program funding levels and project caps vary widely. Local and/or grantee matches are common, but the required percentage match varies.

TABLE K-1
State road infrastructure economic development incentives

State	Description	Characteristics
Alabama	Alabama Industrial Access Road and Bridge Program provides financial assistance to communities for industrial access to new and expanding industries.	The industry must be committed to new investment and the creation of new jobs. New access must be on public rights-of-way.
Florida	Economic Development Transportation Fund provides funding to local governments to alleviate transportation problems that affect a company's location or expansion decision.	Up to $3 million may be provided for design and engineering, construction, and traffic signalization. Funding is restricted to companies in selected industries such as manufacturing, corporate/regional headquarters, and some multi-state business services.
Illinois	The Economic Development Program (EDP) provides grant assistance for roadway improvements or new construction that are necessary for access to new or expanding industrial, manufacturing or distribution type companies.	Applicants can receive $30,000 for every new job created and $10,000 for every job retained up to a maximum of $2 million. The EDP program provides 50% state funding for eligible locally owned roadways and 100% state funding for roadway improvements on state-owned routes.

State	Description	Characteristics
Iowa	The Revitalize Iowa's Sound Economic (RISE) program provides grant and loan funding for projects that involve construction for improvement of a public roadway.	The program funds both immediate opportunities (job generating projects due to firm location and expansion with 20% local match required) and speculative projects that fund industrial parks and require a local match of 50%.
Kansas	The Economic Development Program provides funding to projects that support job growth and capital investment, including access roads and turning lanes.	Localities are the applicants, often in partnership with a firm. A 25% minimum match is preferred but negotiable.
Michigan	The Transportation Economic Development Fund (Economic Development Road Projects Category) provides funding for transportation projects to encourage economic development and create or retain jobs.	Projects must be in eligible target industries and create or retain permanent jobs. The funds are available to state, county, and city road agencies. Minimum of 20% match is required.
Minnesota	The Transportation Economic Development Program's purpose is to fund construction, reconstruction and improvement of state and local transportation infrastructure to create and preserve jobs and other economic development purposes.	The program provides state matching funds to leverage local and private funding. Projects must contribute to job creation or retention or other measurable benefit.
Mississippi	Capital Improvements Revolving Loan Program provides low-interest loans to localities for improving public infrastructure, including industrial access roads.	Eligible industries include manufacturers, warehouses and distribution centers, R&D facilities, hospitals, telecommunications and data processing facilities, and national or regional headquarters.
Nebraska	The Economic Opportunity Program provides assistance for road projects for job attraction and retention	Localities must make application. Projects must either lead to creation or retention of permanent, high quality, private sector jobs, or to new private capital investment. New jobs must be at or above the median wage for the applicant’s region. Only projects for targeted industries are eligible. Applicant must provide at least 25% of project costs.
New Jersey	Public Infrastructure Tax Credit is available for taxpayers that develop public infrastructure which is given to a municipality.	The credit is equal to 100% of applicants costs of public infrastructure with a cap of $5 million. The investment must be part of a new capital investment of at least $10 million in building construction.
New Mexico	Colonias Infrastructure Program provides funding for roads and other infrastructure investments for rural communities with a population or 25,000 within 150 miles of the U.S.-Mexico border that has been designated as a colonia.	Colonia Infrastructure Fund awards are both grants and interest-free loans and require a local community match.

State	Description	Characteristics
New York	Industrial Access Program provides funding to highway and bridge improvements highway and bridge improvements, which facilitate economic development and result in the creation and/or retention of jobs.	Local and regional public applicants are eligible to apply. Eligible projects must be an integral part of an economic development effort that seeks to retain, attract, expand or revitalize an industrial facility. Retail trade projects are not eligible.
North Carolina	(1) Infrastructure/State Rural Grants provide funding to local governments to assist with infrastructure projects, including construction of public access roads (2) NC Departments of Commerce and Transportation Joint Economic Development Program provides funding for new industrial access roads.	(1) Awards are made on a 60% grant, 40% interest free loan basis, up to a maximum of $1 million, (2) Up to $2,500 per job or $400,000 is permitted.
Ohio	Roadwork Development Account (629) provides funding for public roadway improvements.	Funds are available for projects primarily involving manufacturing, research and development, high technology, corporate headquarters, and distribution activity. Projects must typically create or retain jobs. Grants are usually provided to a local jurisdiction and require local participation.
Oklahoma	Industrial Road Access Program provides assistance to funding access roads connecting a firm or industrial site to the state or local road system.	Application is made through localities that contact the state Department of Transportation. Factors used in making funding decisions include industry, capital investment job creation, and freight traffic served.
Oregon	Immediate Opportunity Fund provides street or road improvements to influence location, relocation or retention of firms.	Funding is limited to 50% of costs of the transportation improvement. Program criteria include competitive projects and job creation and retention in economic base industries.
Pennsylvania	The Multimodal Transportation Fund provides grants to encourage economic development and ensure that a safe and reliable system of transportation is available.	Funds may be used for the development, rehabilitation, and enhancement of transportation assets. Businesses are eligible. Grants are available for projects with a total cost of $100,000. Grants cannot exceed $3 million for any project.
South Carolina	(1) Economic Development Set-Aside Program assists companies in locating or expanding in South Carolina through road or site improvements and other costs related to business location or expansion. (2) Credit for Infrastructure Construction provides corporate income tax credit equal to 50% of contributions or expenses for construction or improvement of road projects	(1) Factors considered in eligibility include number of jobs, competitiveness of project and other factors, (2) Per project cap of $10,000 per year and $40,000 per project. Road project must eventually be dedicated to public use or for a qualifying utility.

State	Description	Characteristics
South Dakota	Transportation Economic Development Grants provide funds to localities for the development of new or expanded access for new industry located within industrial parks.	Locality is the applicant and must provide a 20% match of the construction costs. Roadway right-of-way must be dedicated to public use.
Tennessee	(1) The State Industrial Access (SIA) Program provides funding for the development of "Industrial Highways" and technical assistance for highway access to new and expanding firms. (2) Fasttrack Infrastructure Program provides grants to local governing bodies for public infrastructure including public roadway improvements.	(1) Application is made through localities that contact the state Department of Transportation, (2) Program is for firms creating new jobs and/or making new capital investments. State grant requires local matching funds.
Vermont	The Vermont State Infrastructure Bank (SIB) provides low-interest loans for the construction or reconstruction of highways, roads and bridges.	Private sector borrowers can receive 3% fixed for loans and municipal borrowers 1%. Borrower equity contribution is required to be 10-20%.
Virginia	(1) Economic Development Access Program (EDAP) provides funding for public access roads serving new or expanding industrial sites (2) Transportation Partnership Opportunity Program (TPOF) funds transportation access (including roads) for business development projects	(1) EDAP 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. (2) TPOF grant is available to companies that develop road access improvements. Projects must meet export-based and competitive criteria.
West Virginia	The Industrial Access Road Fund provides funding for constructing and maintaining industrial access roads.	Localities apply for sites where manufacturing, distribution, processing, or other economic development activities will occur. Allocation is based on costs in relation to traffic volume generated. Limit is $400,000 in unmatched funds per county in fiscal year. Each dollar of unmatched funds requires $10 of investment, and each dollar of matched funds requires $5 of investment
Wisconsin	Transportation Economic Assistance (TEA) program provides matching state grants to localities for transportation improvement projects, including road improvements.	The TEA program seeks to attract and retain businesses in Wisconsin. Projects cannot be speculative. Grantees must assure that the number of jobs anticipated from the proposed project will occur within 3 years of project agreement and remain for another four years; 50% local match is required.
Wyoming	Business Ready Community Grant and Loan Program provides grants and loans for public infrastructure including roads that serve the needs of businesses and promotes economic development.	Localities are the primary applicants to the program. Business Committed projects assist business job creation and retention. Readiness projects fund speculative infrastructure investment.

SOURCE: Weldon Cooper Center Analysis based on C2ER Business Incentives Database; PFM Group (2016) and review of state transportation agency websites.

TABLE K-2
State rail infrastructure economic development incentives

State	Description	Characteristics
Idaho	Rural Economic Development and Integrated Freight Transportation (REDIFiT) Grant and Loan Program provides financial assistance to businesses to expand facilities for shipping freight by rail.	Individual grants are capped at $100,000. Program requires 50/50 match. Applicants are selected and scored on economic benefit and long-term impact to transportation and freight shipping infrastructure.
Illinois	The Rail Freight Loan Program provides low-interest loans (and under special circumstances grants) to private firms to preserve and improve rail freight service.	Program applications must demonstrate economic benefits (e.g., job creation/retention, transportation savings).
Indiana	The Industrial Rail Service Fund (IRSF) program is for rail improvements to maintain or increase business rail freight and to assist with funding needed for track infrastructure improvements related to new business development on the line.	Eligible applicants are limited to Class II and Class III freight railroads or Port Authorities. Grants can be used for the rehabilitation of railroad infrastructure or railroad construction. Railroads are limited to a grant award that does not exceed 75% of the total cost of the project. The maximum grant award for a railroad is $300,000.
Iowa	The railroad revolving loan and grant program funds rail yard improvement or expansion, construction of branch lines or passing track, bridge repair or replacement, industrial park development, and improvement or creation of rail spurs.	Grant funding is contingent on job creation and retention commitments by the applicant, and loans can supplement grants if the project cost exceeds that available in grant funding. A local match of at least 20% is required for grants. A maximum of $12,000 per job may be awarded as a grant with a matching local contribution.
Kansas	(1) The State Rail Service Improvement Fund provides grants and loans to projects that expand the capacity of the state's railroads and projects that can be used to recruit or expand businesses (e.g., rail spurs, sidings and extensions). (2) The Economic Development Program provides funding to projects that support job growth and capital investment, including rail spurs.	(1) Localities make application. Local match is generally 30%. (2) Localities are the applicants, often in partnership with a firm. A 25% minimum match is preferred but negotiable.
Maine	The Industrial Rail Access Program provides financial assistance to encourage economic development and increased use of rail transportation.	50/50 match is required from local or private industry funds. Projects are rated on 10 categories, including job creation/retention, new investment, improvement in rail service, decrease in highway congestion and other factors.

State	Description	Characteristics
Massachusetts	The Industrial Rail Access Program provides funding to stimulate rail usage and stimulate economic development, including job creation and retention through construction/rehabilitation of rail spurs, rail sidings, and other rail facility improvements	Eligible applicants include freight railroad operators, industry partners/rail shippers, municipalities, and economic development corporations. No more than 60% of project costs are supported with state funds; at a minimum the remaining 40% of projects costs must be provided by the railroad operator and/or industry project sponsor. The maximum grant award cannot exceed $500,000.
Michigan	The Freight Economic Development Program assists new or expanding rail customers with up to 50% of the costs associated with rail infrastructure like rail spurs.	Projects must create jobs and generate rail car traffic.
Minnesota	The Rail Service Improvement Program provides grants for freight rail service improvement projects that support economic development.	Eligible applicants are railroads, rail users, and political subdivisions. The program does not have minimum or maximum funding requirements, but the total budget for the program is currently $1 million.
Mississippi	(1) The Freight Rail Service (RAIL) Revolving Loan Program provides low-interest loans to localities for funding freight rail projects. (2) Mississippi Rail Grant Program awards grants to railroads for railroad projects that promote economic growth. (3) Capital Improvements Revolving Loan Program provides low-interest loans to localities for improving public infrastructure, including rail spurs.	(1) Projects funded increase rail usage and productivity. (2) Eligible projects must identify specific repairs or improvements to a rail line that would make the line more competitive when providing services to industry. (3) Program restricted to selected (generally export base) industries.
Montana	The Montana Essential Freight Rail Loan Program is a low-interest revolving loan fund to support freight rail projects that enhance freight rail service.	Eligible projects include development, improvement, construction, and rehabilitation of branch lines or short lines, and sidings. Applicants must match at least 30% of project costs for rehabilitation projects and 50% for new construction.
Nebraska	The Economic Opportunity Program provides assistance for rail projects for job attraction and retention.	Localities must make application. Projects must either lead to creation or retention of permanent, high-quality, private-sector jobs, or to new private capital investment. New jobs must be at or above the median wage for the applicant's region. Only targeted industries are eligible. Applicant must provide at least 25% of project costs.
New York	The Industrial Access Program provides funding to highway, bridge, and rail improvements that facilitate economic development and result in the creation and/or retention of jobs.	Local and regional public applicants are eligible to apply. Eligible projects must be an "integral part of an economic development effort which seeks to retain, attract, expand or revitalize an industrial facility." Operations that are primarily retail are not eligible.

State	Description	Characteristics
North Carolina	(1) Rail Industrial Access Program. The program provides grant funding to improve railroad spur tracks for new or expanding tracks. (2) Infrastructure/State Rural Grants provides funding to local governments to assist with infrastructure projects, including construction of public rail spur improvements. (3) NC Departments of Commerce and Transportation Joint Economic Development Program provides funding for new rail access projects.	(1) Grant recipients can receive a maximum of 50% of total project costs with a project limit of $200,000. (2) Priority is given to distressed counties. Firms must be in priority industries and create new jobs. Local match of at last 5% required. (3) Projects should attract new and expanding companies that increase employment. Up to $2,500 per job or $400,000 is permitted.
North Dakota	Freight Rail Improvement Program (FRIP) and Local Rail Freight Assistance (LRFA) loan funds are available for projects that assist economic development and job creation.	Eligible applicants include cities, counties, railroads, and other current or potential users of freight railroad service. Eligible projects target low gross freight lines that rehabilitate a rail line segment and promote economic development.
Ohio	The Rail Spur/Siding Program provides funding to firms for new rail and rail-related infrastructure to promote economic development.	Grant funding is generally limited to projects where significant job creation or retention is involved (25 or more jobs). Applicants must commit to job creation/retention numbers subject to contractual clawbacks. Further, applicants are required to commit to rail usage, also subject to clawbacks.
Oregon	Connect Oregon provides grant funding for transportation projects that reduce transportation costs to businesses by moving to non-highway mode of transportation including rail siding and rail spur investments.	Connect Oregon projects are eligible for grants that cover up to 70% of project costs. A minimum 30% cash match is required from the recipient for all grant funded projects.
Pennsylvania	(1) The Rail Freight Assistance Program (RFAP) provides financial assistance for investment in rail freight infrastructure to preserve essential rail freight service and preserve or stimulate economic development through the generation of new or expanded rail freight service. (2)The Rail Transportation Assistance Program (RTAP) provides rail funding as part of line item(s) in a Capital Budget Act.	(1) The maximum state funding for a RFAP project is 70% of the total project costs, not to exceed $700,000. (2) The maximum state funding for an RTAP project is 70% of project costs.
South Carolina	The Rural Infrastructure Fund (RIF) provides funding for rail spurs and other industrial site infrastructure improvements in eligible rural localities.	Funds are used primarily for "product development," such as industrial parks and sites in geographically targeted rural areas. Localities are eligible for RIF funds. Factors considered in eligibility include number of jobs, competitiveness of project, and other factors.

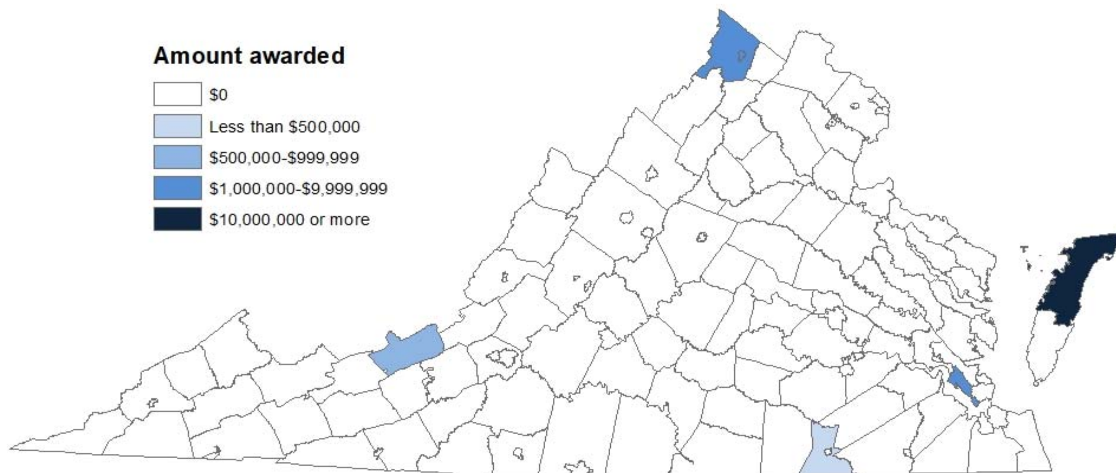
State	Description	Characteristics
Tennessee	(1) Competitive Rail Connectivity Grant seeks to expand rail access to create jobs and capital investment, enhance the marketability of available industrial sites, and reduce highway and bridge maintenance costs by diverting freight from road to rail. (2) FastTrack Infrastructure Program provides grants to local governing bodies for public infrastructure including rail improvements.	(1) Applicants are restricted to local governments and other government entities, local railroad authorities, and local port authorities. An applicant may request a maximum of $2M in funding. (2) Program is for firms creating new jobs and/or making new capital investments. State grant requires local matching funds.
Vermont	The Vermont State Infrastructure Bank (SIB) provides low-interest loans for the construction of certain rail transit or public transit facilities.	Private-sector borrowers can receive 3% fixed for loans and municipal borrowers 1%. Borrower equity contribution is required to be 10-20%
Virginia	The Rail Industrial Access Program provides funds to construct railroad tracks for new or substantially expanded industrial and commercial projects having a positive impact on economic development.	Financial assistance to any one locality is limited to $450,000 in any one fiscal year. The grant shall be awarded based on a 70/30 split. Funds may be used to construct, reconstruct, or improve part or all of the necessary tracks and related facilities on public or private property.
Washington	Freight Rail Assistance Program provides funding for a variety of freight rail capital projects, including developing rail infrastructure to attract new businesses (e.g., siding track and railroad docks, rail connections).	Eligible entities include cities, county rail districts, counties, economic development councils, port districts, and privately or publicly owned railroads. Grants are directed toward larger projects, where it is difficult to gain a contribution and where the rail location or the project concerned is of strategic importance to the state, as well as the local community.
Wisconsin	(1) Freight Rail Preservation Program (FRPP) provides grants to purchase and preserve abandoned rail lines for freight service or rehabilitate facilities on publicly owned rail lines. (2) Freight Rail Improvement Program provides low-cost loans for rail projects that connect a firm to the railroad system and other improvements. (3) Transportation Economic Assistance (TEA) program provides funding for transportation improvement projects, including rail improvements.	(1) Grants provided to local governments, industry, and railroads for up to 80% of cost. (2) Program provides up to 100% loans with loan limited to no more than $3 million. (3) Program for local governments requires 50-50 match.
Wyoming	Business Ready Community Grant and Loan Program provides grants and loans for public infrastructure including rail spurs.	Localities are the primary applicants to the program. Maximum grant amount is $3 million. Required match for business committed projects and community readiness projects is 10-15% depending on category of applicants.

SOURCE: Weldon Cooper Center analysis based on C2ER Business Incentives Database, National Academies of Sciences, Engineering, and Medicine (2017) and review of state transportation agency websites.

Appendix L: Regional distribution of TPOF, road access, and rail access grants

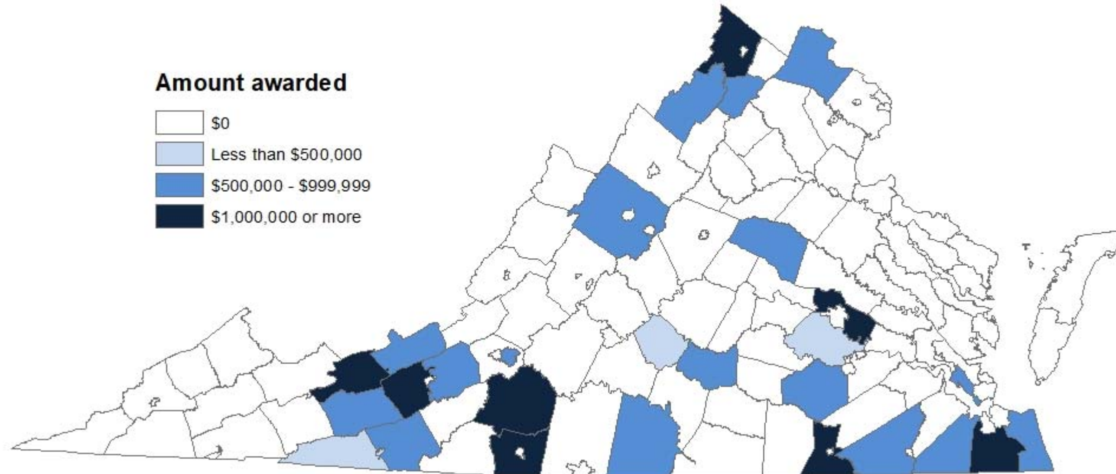
Grant awards from the three transportation infrastructure grants mostly target rural areas of the state. Nearly all of the TPOF awards (80 percent) were in Accomack County and associated with the Mid-Atlantic Regional Spaceport (Figure L-1). Awards from Economic Development Access Program (road access program) are more concentrated in Southwestern Virginia and Hampton Roads, particularly the City of Chesapeake (Figure L-2). Nineteen localities received Rail Industrial Access Program (rail access program) awards (Figure L-3).

FIGURE L-1
Accomack County received over 80 percent of Transportation Partnership Opportunity Fund awards



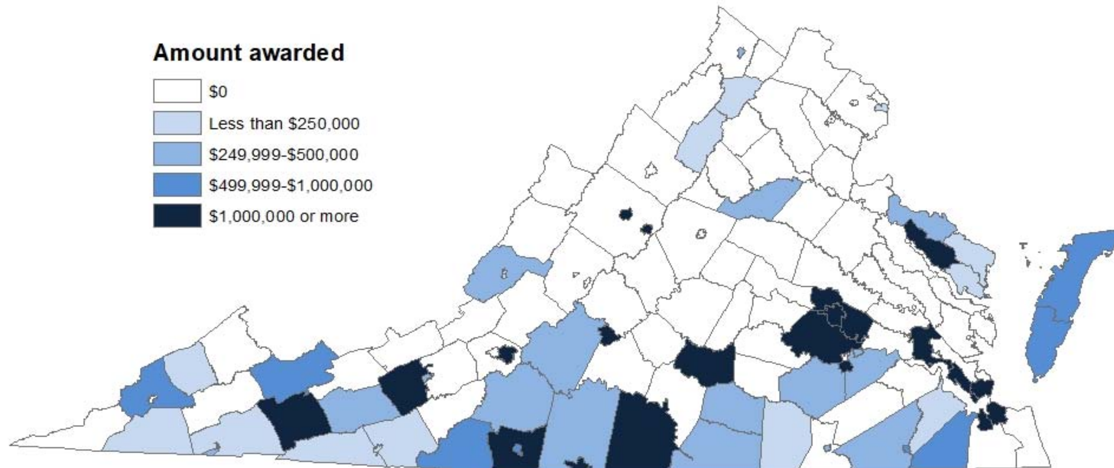
SOURCE: Weldon Cooper Center analysis of information provided by VDOT.

FIGURE K-2
Economic Development Access Program awards are more concentrated in the Southwestern and Hampton Roads Regions



SOURCE: Weldon Cooper Center analysis of information provided by VDOT.

FIGURE K-3
Nineteen localities received Rail Industrial Access Program awards



SOURCE: Weldon Cooper Center analysis of information provided by DRPT.

Appendix M: Select responses: survey of local economic development staff

Weldon Cooper Center staff surveyed local economic development staff for each of Virginia's 133 counties and independent cities to assess the importance of incentives to attract businesses, estimate the supply and demand for business ready sites, and assess the importance of various industrial location and expansion factors. Certain results that are included in the report are included below.

Results: Effectiveness of enterprise zone incentives

Local economic development staff reported that the enterprise zone program is at least somewhat effective in meeting most enterprise zone objectives (Table M-1). They rated the program as most effective, on average, in improving the overall business climate (ranked first out of 14 objectives), creating new jobs (ranked second), and retaining and expanding existing businesses (ranked third). However, they viewed enterprise zone programs as less effective in removing regulatory barriers, improving infrastructure, and creating job opportunities for economically disadvantaged residents. Importantly, even the highest-ranked objectives had a high proportion of respondents that ranked them as only somewhat effective.

TABLE M-1
Local economic developers rate enterprise zones as at least somewhat effective in meeting most enterprise zone objectives

Objective	Not an EZ objective	Not effective (score=1)	Somewhat effective (score=2)	Very Effective (score=3)	Don't know	Average rating
Improving overall business climate	0.00	7.69	42.31	50.00	0.00	2.42
Creating new jobs	0.00	3.70	55.56	40.74	0.00	2.37
Retaining and expanding existing businesses	0.00	11.11	44.44	44.44	0.00	2.33
Attracting firms relocating to the zone	0.00	14.81	40.74	44.44	0.00	2.30
Increasing local tax revenues	0.00	7.41	55.56	37.04	27.00	2.30
Better public-private partnerships	3.70	7.41	55.56	29.63	3.70	2.24
Coordinating existing economic development	7.69	11.54	53.85	26.92	0.00	2.17
Main street revitalization	21.74	13.04	39.13	26.09	0.00	2.17
Raising property values	4.00	20.00	40.00	32.00	4.00	2.13
Community revitalization	3.85	26.92	30.77	38.46	0.00	2.12
Promoting business startups	7.69	23.08	46.15	23.08	0.00	2.00
Creating job opportunities for economically disadvantaged residents	4.17	29.17	45.83	20.83	0.00	1.91
Improving infrastructure	7.41	33.33	37.04	18.52	3.70	1.83
Removing regulatory barriers	14.81	44.44	22.22	18.52	0.00	1.70

SOURCE: Weldon Cooper Center, Survey of Local Economic Developers (2020).
NOTE: Based on 27 respondents from localities with enterprise zones.

Results: Importance of business-ready sites

Local economic developers rated business or industrial park availability as the 12th most important business location factor, lower than workforce and education quality and availability and some other types of infrastructure (e.g., telecommunications, highway infrastructure) but higher than economic development incentives and tax rates (Table M-2). However, they also rated Virginia's performance on the availability of business or industrial parks low compared with other states (24th among 28 location factors included in the survey). Thus, while other economic development factors may be more important, Virginia is rated as performing relatively poorly with regard to providing suitable business sites for business expansion and location.

TABLE M-2
Local economic developers rated business or industrial park availability as 12th important but Virginia's availability as 24th

Rank	Factor	Average rating of importance	Factor	Average rating for VA vs. other states
1	Availability of skilled labor	3.94	Availability/quality of four-year colleges/universities	3.41
2	Telecommunications	3.78	Quality of life	3.38
3	Workforce training programs	3.75	Proximity to markets	3.38
4	Proximity to markets	3.74	Seaports, waterways, and railways	3.27
5	Availability/quality of K–12 schools	3.69	Owner's place of residence or preference	3.12
6	Availability/quality of community colleges	3.66	Availability/quality of K–12 schools	3.04
7	Highway infrastructure	3.66	Local property tax rates	3.02
8	Quality of life	3.65	Availability/quality of community colleges	3.00
9	Availability/quality of four-year colleges/universities	3.63	Proximity to corporate partners	2.96
10	State regulatory environment	3.61	State corporate tax rate	2.96
11	Energy costs	3.55	State regulatory environment	2.90
12	**Business or industrial parks**	**3.47**	Proximity to other similar businesses	2.90
13	State economic development incentives	3.46	Cost of living	2.86
14	Accessibility to major airport	3.45	Energy costs	2.85
15	State corporate tax rate	3.35	Accessibility to major airport	2.83
16	Cost of living	3.34	Land prices	2.82
17	Land prices	3.32	State individual income tax rates	2.73
18	Local economic development incentives	3.29	Health-care costs	2.73
19	Traffic and transit costs	3.28	Highway infrastructure	2.70
20	Proximity to corporate partners	3.25	Availability of skilled labor	2.61
21	Proximity to other similar businesses	3.18	Traffic and transit costs	2.60
22	Local property tax rates	3.11	Local economic development incentives	2.58
23	Seaports, waterways, and railways	3.11	Workforce training programs	2.53
24	Availability of unskilled labor	3.10	**Business or industrial parks**	**2.52**
25	Owner's place of residence or preference	3.02	Telecommunications	2.46

Rank	Factor	Average rating of importance	Factor	Average rating for VA vs. other states
26	Healthcare costs	3.00	Availability of unskilled labor	2.40
27	State individual income tax rates	2.89	State economic development incentives	2.40
28	Special purpose infrastructure	2.78	Special purpose infrastructure	2.21
29	Mass transit infrastructure	2.67	Mass transit infrastructure	2.15

SOURCE: Weldon Cooper Center, Survey of Local Economic Developers (2020).

Appendix N: 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, Department of Taxation, Department of Housing and Community Development, Department of Rail and Public Transportation, Virginia Department of Transportation, 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 response letters from the

- Virginia Economic Development Partnership,
- Department of Taxation,
- Department of Housing and Community Development, and
- Secretary of Transportation.

VEDP | Virginia Economic Development Partnership

September 4, 2020

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

Re: VEDP response to draft JLARC report, Infrastructure and Regional Incentives

Dear Mr. Greer:

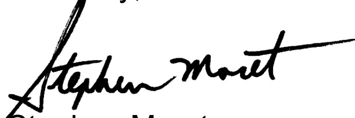
Thank you for providing an opportunity for us to comment on the Joint Legislative Audit & Review Commission's (JLARC's) draft report, *Infrastructure and Regional Incentives*. Overall the report is well done and provides a good overview of Virginia's infrastructure and regional incentives.

We agree with JLARC's assessment that the Virginia Business Ready Sites Program (VBRSP) has provided useful intelligence on business site readiness and that the program is too new to fully assess its economic impact. We also agree that VEDP has an important role to play in offering technical assistance to localities as they seek to identify, prepare, and market development sites for economic development projects.

Our only serious concern with the report, at least in its draft form, was that it suggested that the impact of the VBRSP is lower than that of other economic development incentive programs. Considering that most manufacturing and supply chain prospects will only seriously consider sites that are prepared to the Tier 4 or Tier 5 level, and further that VBRSP grants tend to be relatively modest in size, we think the return on investment of VBRSP grants is likely to be among the highest of all state-level economic development incentive programs in Virginia. Indeed, with just seven VBRSP-supported sites improved to the Tier 4 level so far, three of those sites already have secured significant project announcements.

As usual, we appreciated the professionalism of JLARC staff during the project, as well as compliment your team on its thoughtful work and recommendations. We also appreciate how well the draft report captured important nuances about site development.

Sincerely,



Stephen Moret
President & CEO

901 E. Cary Street, Suite 900
Richmond, Virginia 23219
VEDP.org

COMMONWEALTH of VIRGINIA

Department of Taxation

August 25, 2020

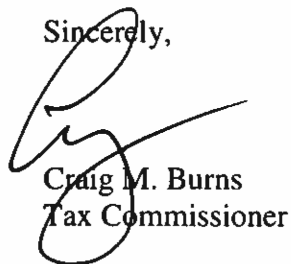
Mr. Hal E. Greer, Director
Joint Legislative Audit and Review Commission
919 East Main Street, Suite 2101
Richmond, Virginia 23219

Dear Mr. Greer:

Thank you for the opportunity to review and comment on the exposure draft report: *Infrastructure and Regional Incentives.* We believe the report is very well done and will be useful to the members of the General Assembly going forward. We also appreciate you incorporating our comments and suggestions into the final report draft.

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

Sincerely,



Craig M. Burns
Tax Commissioner

c: The Honorable Aubrey L. Layne, Jr., Secretary of Finance

Ralph S. Northam
Governor

R. Brian Ball
Secretary of
Commerce and Trade

COMMONWEALTH of VIRGINIA

DEPARTMENT OF
HOUSING AND COMMUNITY DEVELOPMENT

Erik C. Johnston
Director

September 1, 2020

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

Re: JLARC Infrastructure and Regional Incentives report

Dear Mr. Greer,

Thank you for providing the draft JLARC report on *Infrastructure and Regional Incentives* applicable to the Virginia Enterprise Zone (VEZ) program. DHCD welcomes the opportunity for programmatic review and improvement. VEZ is a unique partnership between the Commonwealth of Virginia and local governments because it is designed to incentivize both job creation and real property investment, with the goal of promoting local and regional economic development and revitalization, particularly in areas that have been designated as economically distressed.

The 2005 Enterprise Zone Grant Act established a Job Creation Grant (JCG) and Real Property Investment Grant (RPIG) that replaced the former tax credit program. The program's benefits extend beyond the scope of this JLARC study which is focused on the state return on investment as the program provides a positive impact on local tax revenues which are critical to distressed localities that are striving to increase their tax base in order to invest further in their local services and economic development efforts. In addition, the real property investment goal of VEZ allows the program to increase traded sector activities along with critical revitalization of commercial and mixed-use developments which bring underutilized properties into active economic uses that spur revitalization and increase local revenues. This flexibility to allow commercial and mixed-use development makes VEZ one of the few programs available to target assistance to the small and mid-sized local businesses that have been most impacted by the pandemic.

The Enterprise Zone program in Virginia remitted $2,927,324 in Job Creation Grants representing a total of 3,829 net new jobs created and $11,572,676 in Real Property Investment Grants for grant year 2019. The recommendations in this report provide DHCD with a welcome opportunity to engage stakeholders and explore programmatic changes that will build on the

program's past success and maximize benefit for zone investors, localities, and the Commonwealth. Below please find DHCD's responses to the recommendations provided in the report.

The Department of Housing and Community Development should review and revise the process for designating and renewing enterprise zones to ensure that the enterprise zone program targets distressed areas in the state.
The VEZ designation and renewal terms are described in § 59.1-542. The law sets the designation and renewal terms for zones at an initial ten-year term with the potential for up to two five-year renewals, with a maximum of 30 zones designated. In 2018, the General Assembly added the option for a third five-year term, allowing for designation of up to twenty-five years. This means that every renewal period only allows DHCD to see designations lapse without being renewed but does not allow new zones to become designated. DHCD believes the current list of zones is correctly targeting the Commonwealth's resources, but as some zones have increased their economic competitiveness, additional legislative flexibility may be needed to adjust zones in the coming years.

DHCD is reviewing multiple data points and methods for evaluating zone performance, including effectiveness in encouraging high wage job creation and attracting new capital investment, which are statutorily required criteria for recommending zone renewals. Further, the agency is reviewing measures of economic distress with a goal of refining the criteria utilized by the EZ program in recommending zone designation and renewals.

It is important to note that the Commonwealth's Opportunity Zones overlap with many of the state's enterprise zones because it is a best practice to layer incentives to encourage revitalization in low-income census tracts in a way that benefits the households living in the zones. Eliminating the locations of existing state enterprise zones will harm the Commonwealth's competition for Opportunity Zone investments. Any changes to zone designations should factor ways to minimize the impact to existing economic development incentives such as Opportunity Zones.

If the General Assembly decides to maintain the Real Property Investment Grant, it may wish to consider amending § 59.1-548 of the Code of Virginia to restrict awards to projects in higher multiplier, export-base industries instead of commercial and mixed-use developments.
While there are multiple state and federal programs that support the development of industrial sites the EZ RPIG is one of the few that provides incentives for mixed-use and commercial at this scale. These kinds of developments are most often found in central business districts, thereby supporting community revitalization efforts, restoring blighted properties to use, and increasing property values and tax collections by localities. In 2019, RPIG represented 80% of total grant funds extended, leveraging more than $280,000,000 in private investment.

DHCD strongly encourages the General Assembly to maintain commercial and mixed-use developments as eligible. These businesses are the most likely to be small, minority and women owned and have been the hardest hit during the pandemic. They are also the businesses most likely to be locally owned and operated and are central to the real property investment and revitalization goal of the program.

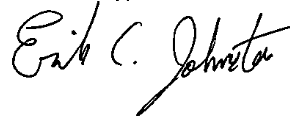
The Department of Housing and Community Development (DHCD) should determine how to best incentivize long-term job creation and retention through the Job Creation Grant. DHCD should report on its proposal to the governor and the chairs of the Housing Appropriations and Senate Finance & Appropriations Committees no later than November 2, 2021.
Long-term job creation and retention is a priority objective of the Enterprise Zone program. Benefits are paid after the participating company meets their job creation commitments for the calendar year and we do not currently track employment data for employers who chose to no longer receive the job creation grant program incentive. DHCD intends to work with Zone Administrators and other stakeholders to better understand why some companies fail to re-apply for the Job Creation Grant even when the job creation has been maintained.

To accomplish this, DHCD intend to begin a stakeholder engagement process, to include zone administrators, past and current grant recipients, and other key stakeholders to review every element of the program – marketing and education, our application and grant-making processes, and benefit structure.

The Department of Housing and Community Development should automate and standardize the collection of wage data from all Job Creation Grant applicants.
DHCD is reviewing options to implement this recommendation for the 2020 grant year.

The Virginia Enterprise Zone Program is a critical tool that incentivizes job creation and real property investments in economically distressed localities. It is the main revitalization tool available to economically distressed localities and uniquely assists both traded sectors and small and mid-sized commercial and mixed-use developments. This tool is more critical than ever as the program assists localities in their economic recovery efforts. DHCD welcomes this opportunity to analyze potential changes to the Enterprise Zone program and to make recommendations for an improved program.

Sincerely,



Erik Johnston
Director

Virginia Department of Housing and Community Development | Partners for Better Communities
Main Street Centre | 600 East Main Street, Suite 300 Richmond, VA 23219
www.dhcd.virginia.gov | Phone (804) 371-7000 | Fax (804) 371-7090 | Virginia Relay 7-1-1

COMMONWEALTH of VIRGINIA

Office of the Governor

Shannon Valentine
Secretary of Transportation

September 8, 2020

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

Dear Director Greer,

Thank you for the opportunity to review draft sections of your report on *Infrastructure and Regional Incentives*. The transportation portions of this report focused on three programs: (i) the Transportation Partnership Opportunity Fund, (ii) the Economic Development Access Program, and (iii) the Rail Industrial Access Program.

I appreciate JLARC's assessment of these programs and believe that we should always seek ways to more effectively conduct our business. Programs should be evaluated to ensure they are advancing their goals and result in the wise use of taxpayer dollars. However, I am concerned that the rubric – namely direct, on-site job creation – used to evaluate these programs varies from the purposes of these programs as set out by the General Assembly in statute.

The purpose of the Transportation Partnership Opportunity Program (TPOF) per the Code of Virginia is "to provide funds to address the transportation aspects of economic development opportunities." This program has been used to support projects such as:

- $1.3M for improved access to the Navy Federal Credit Union site in Frederick County supporting 1,400 jobs by 2022 – 50% of which have been created according the April 2020 quarterly report;
- Additional barge service between the Port of Virginia and the Richmond Marine Terminal, supporting significant growth around that facility; and
- Development of Wallops Island, including securing Rocket Lab, a private aerospace company forecasting 12 launches per year.

As the report notes, in 2016 the guidelines for this program were revised by the Commonwealth Transportation Board working in coordination with the Secretaries of Transportation and Commerce and Trade to implement a number of reforms to this program. These included alignment of award criteria with the Commonwealth Opportunity Fund, as well as the Virginia Investment Performance Grant, and "clawback" provisions for not meeting requirements.

The funds provided to Economic Development Access Program per the Code of Virginia are to be used "for constructing, reconstructing, maintaining, or improving access roads within localities to economic development sites on which manufacturing, processing, research and development facilities, distribution centers, regional service centers, corporate headquarters, or other

establishments that also meet [criteria established by VEDP]." Further, the Code requires that when evaluating whether to award such grants that the Board shall consider "the costs thereof in relation to the volume and nature of traffic to be generated as a result of developing the airport or economic development site."

To receive funds under this program, a locality must demonstrate a new or substantially expanded business is locating at the site that will be served by the access road. Localities also have the option of providing a bond to cover the cost of repaying the Commonwealth while seeking to attract a business to the site and, if unsuccessful after five years, they must pay the Board back its costs for the access road. In 2017, the General Assembly unanimously approved legislation prohibiting the paying back of any funds for a five-year period (Chapter 558 of the 2017 Acts of Assembly).

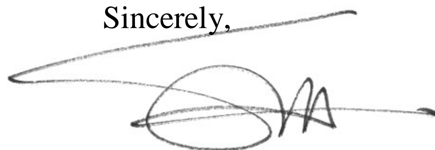
Over the past decade, funds in this program have not been put to use in an expeditious manner. As a result, in 2016, the General Assembly directed $25M from this program to support the widening of Interstate 66 eastbound inside the Beltway (Item 453 K of Chapter 780 of the 2016 Acts of Assembly). Based on JLARC's review and the difficulty in deploying these funds to support improved access to economic development sites, I have directed my staff to initiate an evaluation of this program to determine how these funds can be better used to support economic development in the Commonwealth.

The purpose of the Rail Industrial Access Program, per the Code of Virginia, is to further the construction of access railroad track facilities "to certain industrial commercial sites where rail freight service is or may be needed by new or substantially expanded industry." The Code further states that in evaluating whether to award a grant, "the Board shall consider the cost thereof in relation to the prospective volume of rail traffic, capital investment, potential employment, and other economic and public benefits." As noted in your draft report, the diversion of freight transportation from trucks to rail results in other economic benefits including congestion relief, reduced highway maintenance costs, and improved safety. The Board has adopted guidelines that direct the Department of Rail and Public Transportation to track freight volumes resulting from the award of grants as well as to require "clawback" of funds if freight volume figures are not met.

Transportation is the backbone of Virginia's economy. While transportation investments can result in direct job creation, economic development incentive programs in the transportation sector should also provide benefits which translate into real, measurable economic impact, such as capacity, performance, productivity, output, access, congestion relief, environmental impact, and quality of life.

Thank you again for the opportunity to review portions of JLARC's draft report.

Sincerely,



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