

## **Appendix D: Estimated actuarial surplus funds needed to subsidize TTP**

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JLARC's independent actuarial consultant, GRS, assessed the funded status of the Tuition Track Portfolio (TTP) program to determine the estimated amount of surplus funds in the Defined Benefit 529 (DB529) fund needed to maintain TTP's funded status at 125 percent or higher. TTP's funded status declines without an annual subsidy because the price of a TTP unit does not account for the full cost of operating the program.

Without an annual subsidy from DB529 surplus funds, the funded status of TTP is projected to gradually decline to slightly less than 87 percent in FY44 (Table D-1). This funded status equates to a probability of less than 20 percent that the program will have sufficient assets to meet its obligations to TTP participants. This projection is based on an assumption that 450,000 TTP units will be sold annually. The number 450,000 was used because it is the approximate midpoint between the annualized number of TTP units that had been sold through March 2022 and the annual number of units sold if TTP sales matched Legacy Prepaid529 sales. Virginia529 staff indicated that it is unknown how many TTP units will be sold in the future.

The amount of DB529 surplus funds needed to keep TTP at a funded status of 125 percent depends on the investment return assumption of the DB529 fund (Table D-2). Under an assumed investment return of 5.5 percent, a total of \$335 million in surplus funds (adjusted for inflation) is estimated to be needed to maintain a 125 percent funded status through FY44. The total subsidy is estimated to increase to \$650 million (adjusted for inflation) under a lower investment return of 3.5 percent. The total amount of surplus funds needed to subsidize TTP increases under lower investment returns because there is less investment earnings to offset the less-than-full-cost price of TTP units. The amount of the subsidy will also change if the number of units sold annually differs from 450,000. If more units are sold, a larger subsidy would be needed; if fewer units are sold, a smaller subsidy would be needed.

**TABLE D-1**  
**Funded status of TTP is projected to decline without annual subsidy from DB529 fund**

<b>Fiscal year</b>	<b>Total assets (\$M)</b>	<b>Total obligations (\$M)</b>	<b>Unfunded</b>	<b>Funded ratio</b>
			<b>liabilities/(surplus)</b>	
			<b>(\$M)</b>	
2022	\$93.6	\$102.2	\$8.6	91.6%
2023	165.1	178.4	13.3	92.6%
2024	242.9	262.7	19.7	92.5%
2025	328.5	355.4	26.9	92.4%
2026	421.8	456.6	34.8	92.4%
2027	521.4	565.0	43.5	92.3%
2028	626.1	679.2	53.1	92.2%
2029	734.6	798.3	63.7	92.0%
2030	846.1	921.4	75.2	91.8%
2031	960.4	1,048.3	87.9	91.6%
2032	1,076.9	1,178.6	101.8	91.4%
2033	1,195.5	1,312.4	116.9	91.1%
2034	1,316.2	1,449.6	133.4	90.8%
2035	1,438.7	1,590.2	151.5	90.5%
2036	1,562.6	1,733.8	171.1	90.1%
2037	1,687.8	1,880.3	192.5	89.8%
2038	1,814.1	2,029.9	215.8	89.4%
2039	1,940.9	2,182.0	241.1	89.0%
2040	2,067.3	2,335.8	268.6	88.5%
2041	2,192.6	2,491.0	298.4	88.0%
2042	2,318.1	2,648.8	330.7	87.5%
2043	2,445.4	2,811.2	365.8	87.0%
2044	2,577.3	2,981.0	403.7	86.5%

SOURCE: JLARC analysis of modeling by GRS.

NOTE: Assumes (i) a 5.5 percent annual investment return, (ii) 450,000 TTP units are sold annually, (iii) tuition increases 4 percent in each of FY22 and FY23 and 6 percent annually thereafter, and (iv) a discount rate of 5.5 percent.

**TABLE D-2**  
**Larger subsidy for TTP is needed under lower investment return assumptions**

<b>Fiscal year</b>	<b>Annual subsidy from DB529 surplus (millions)</b>		
	<i>5.5% investment return</i>	<i>4.5% investment return</i>	<i>3.5% investment return</i>
2022	\$34.2	\$34.2	\$34.2
2023	21.8	23.4	25.0
2024	24.4	26.9	29.5
2025	25.7	29.3	32.9
2026	26.8	31.6	36.4
2027	27.6	33.7	39.7
2028	28.0	35.4	42.8
2029	28.0	36.8	45.6
2030	27.9	38.1	48.4
2031	27.6	39.3	51.1
2032	27.2	40.5	53.8
2033	26.8	41.7	56.5
2034	26.4	42.9	59.4
2035	25.9	44.1	62.2
2036	25.4	45.2	65.1
2037	24.8	46.4	68.0
2038	24.2	47.6	71.0
2039	23.5	48.7	73.9
2040	22.7	49.7	76.7
2041	21.7	50.5	79.4
2042	21.1	51.8	82.5
2043	21.0	53.6	86.3
2044	21.6	56.2	90.8
<b>Total subsidy <sup>a</sup></b>	<b>\$335.0</b>	<b>\$493.0</b>	<b>\$650.0</b>

SOURCE: JLARC analysis of modeling by GRS.

NOTE: Assumes (i) 450,000 TTP units are sold annually, (ii) tuition increases 4 percent annually in FY22 and FY23 and 6 percent annually thereafter, and (iii) a discount rate of 5.5 percent.

<sup>a</sup> Total subsidy shown in its present value. Therefore, annual subsidies do not sum to this total.

## Appendix E: DB529 estimated funded status under surplus removal scenarios based on 2021 valuation

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JLARC's independent actuarial consultant, GRS, conducted modeling based on the 2021 valuation to project the funded status of the Legacy Prepaid529 program under different actuarial surplus fund removal scenarios using different investment return and tuition increase assumptions. Removing \$1.3 billion in surplus funds under current Virginia529 assumptions (5.5 percent investment return and 6 percent long-term tuition growth) reduces the funded status of the Legacy Prepaid529 program to a low of just over 130 percent in the final year that surplus funds are removed (Table E-1).

Removing actuarial surplus funds under more conservative assumptions has a much more modest impact on the Legacy Prepaid529 program's funded status. Under moderately conservative assumptions (4.5 percent investment return and 7 percent long-term tuition growth), the funded status declines only to a low of 160 percent in the final year that surplus funds are removed (Table E-2). Under more conservative, less likely assumptions (3.5 percent investment return and 7 percent long-term tuition growth), the Legacy Prepaid529 program's funded status declines only slightly to a low of 189 percent in the second year that surplus funds are removed (Table E-3). For withdrawal scenarios using moderately conservative and more conservative assumptions, the DB529 fund would retain a 99 percent probability of having sufficient assets to meet all liabilities through FY44.

Under each of the surplus removal scenarios modeled by the actuarial consultant, the funded status of the Legacy Prepaid529 program is projected to remain above 125 percent. This occurs because a certain amount of funds must remain in the DB529 fund to provide an annual subsidy for the Tuition Track Portfolio (TTP) program. (The TTP program is currently structured to receive a subsidy from the DB529 fund, and this study did not change that assumption.) Under each scenario, the funded status is also projected to initially decline as actuarial surplus funds are removed, then resume increasing until all remaining Legacy Prepaid529 benefit obligations are paid in FY44. When surplus funds are removed under Virginia529's current assumptions or moderately conservative assumptions, the funded status of the Legacy program begins increasing after the last scheduled withdrawal of surplus funds in FY26. This occurs because no additional surplus funds are removed and benefit payments to account holders continue declining as the Legacy Prepaid529 program winds down. Under more conservative, less likely assumptions, the funded status resumes increasing before all scheduled surplus funds are removed. This occurs because a relatively small amount of surplus funds is removed each year (\$102 million) and, with a relatively low investment return of 3.5 percent, a substantial amount of surplus funds must remain in the DB529 fund to subsidize TTP.

Volatility in rates of return will change the funded status from the projections in Tables E-1 through E-3 in a given year. Lower or higher rates of return in early years would have a more substantial impact on funded status than lower or higher rates of return in later years, because there is more money in the fund in the early years. However, volatility in rates of return would not significantly impact the overall findings in Tables E-1 through E-3.

**TABLE E-1**  
**Projected funded status of Legacy Prepaid529 program for surplus fund removal under**  
**current Virginia529 assumptions (millions)**  
**(5.5% long-term investment return and 6% long-term tuition increase)**

<b>Fiscal year</b>	<b>Surplus funds removed</b>	<b>Benefit payments <sup>a</sup></b>	<b>Investment income <sup>b</sup></b>	<b>Total assets</b>	<b>Total obligations</b>	<b>Unfunded Liabilities/(Surplus)</b>	<b>Funded ratio</b>
2022	\$256.2	\$287.4	(\$60.0)	\$2,686.2	\$1,468.5	(\$1,217.7)	182.9%
2023	256.2	221.6	133.9	2,321.5	1,314.9	(1,006.6)	176.6%
2024	256.2	206.4	115.4	1,950.5	1,169.1	(781.4)	166.8%
2025	256.2	199.4	96.1	1,565.3	1,022.8	(542.5)	153.0%
2026	256.2	169.0	76.8	1,190.1	900.8	(289.3)	132.1%
2027	0.0	156.8	57.2	1,062.7	785.1	(277.6)	135.4%
2028	0.0	145.6	51.1	939.8	674.9	(264.9)	139.2%
2029	0.0	129.5	45.3	827.1	575.7	(251.4)	143.7%
2030	0.0	116.4	40.0	722.2	484.9	(237.4)	149.0%
2031	0.0	103.6	34.9	625.4	402.5	(222.9)	155.4%
2032	0.0	91.0	30.3	537.0	329.0	(207.9)	163.2%
2033	0.0	78.3	26.1	457.4	264.8	(192.6)	172.7%
2034	0.0	66.4	22.3	386.4	209.6	(176.8)	184.3%
2035	0.0	57.2	18.8	321.7	161.1	(160.6)	199.7%
2036	0.0	50.8	15.6	260.8	116.7	(144.1)	223.5%
2037	0.0	42.2	12.6	206.1	78.8	(127.2)	261.4%
2038	0.0	33.3	10.0	158.3	48.3	(110.0)	327.8%
2039	0.0	23.6	7.7	118.8	26.3	(92.5)	451.9%
2040	0.0	14.5	5.9	87.5	12.5	(75.0)	697.4%
2041	0.0	7.8	4.5	62.5	5.1	(57.4)	1,221.0%
2042	0.0	3.5	3.3	41.1	1.8	(39.4)	2,343.9%
2043	0.0	1.4	2.2	20.9	0.4	(20.5)	5,298.4%
2044	0.0	0.4	1.1	0.0	0.0	0.0	NA
<b>Total</b>	<b>\$1,281</b>						

SOURCE: JLARC analysis of modeling by GRS based on the 2021 valuation.

NOTE: Assumes (i) a -2 percent annual investment return in FY22 and a 5.5 percent return annually thereafter, (ii) a tuition increase of 4 percent annually in 2022–23 and 2023–24 and 6 percent annually thereafter, (iii) a discount rate of 5.5 percent, and (iv) an annual TTP subsidy based on a 5.5 percent investment return and 450,000 TTP units sold annually.

<sup>a</sup> In addition to benefit payments, the other components of total obligations are the present value of future benefit payments, administrative expenses, and annual TTP subsidies.

<sup>b</sup> In addition to investment income, the other components of total assets are the present value of future installment payments and the market value of assets.

TABLE E-2

Projected funded status of Legacy Prepaid529 program for surplus fund removal under moderately conservative assumptions (millions)  
(4.5% long-term investment return and 7% long-term tuition increase)

Fiscal year	Surplus funds removed	Benefit payments <sup>a</sup>	Investment income <sup>b</sup>	Total assets	Total obligations	Unfunded Liabilities/(Surplus)	Funded ratio
2022	\$181.0	\$287.4	(\$60.0)	\$2,761.4	\$1,503.5	\$(1,257.8)	183.7%
2023	181.0	221.7	112.9	2,449.3	1,351.8	(1,097.5)	181.2%
2024	181.0	206.5	100.1	2,135.6	1,207.9	(927.7)	176.8%
2025	181.0	200.7	86.9	1,811.5	1,062.4	(749.1)	170.5%
2026	181.0	171.2	73.8	1,501.5	940.3	(561.3)	159.7%
2027	0.0	159.8	60.7	1,368.6	823.6	(545.0)	166.2%
2028	0.0	149.3	55.4	1,239.0	711.7	(527.2)	174.1%
2029	0.0	133.6	50.4	1,118.4	610.2	(508.2)	183.3%
2030	0.0	120.8	45.6	1,004.5	516.7	(487.9)	194.4%
2031	0.0	108.2	41.1	897.5	431.3	(466.2)	208.1%
2032	0.0	95.7	36.9	797.7	354.5	(443.2)	225.0%
2033	0.0	82.8	32.9	705.5	287.0	(418.6)	245.9%
2034	0.0	70.7	29.3	620.7	228.5	(392.2)	271.6%
2035	0.0	61.6	25.8	540.5	176.5	(364.0)	306.2%
2036	0.0	55.1	22.4	462.2	128.5	(333.8)	359.9%
2037	0.0	46.1	19.2	388.7	87.3	(301.5)	445.5%
2038	0.0	36.6	16.3	320.6	53.8	(266.9)	596.4%
2039	0.0	26.1	13.5	259.2	29.4	(229.8)	880.9%
2040	0.0	16.2	11.1	204.4	14.1	(190.3)	1,447.0%
2041	0.0	8.7	8.9	154.0	5.8	(148.2)	2,657.6%
2042	0.0	4.0	6.8	105.0	2.0	(103.0)	5,253.5%
2043	0.0	1.6	4.7	54.5	0.5	(54.0)	12,054.6%
2044	0.0	0.5	2.4	0.2	0.0	(0.2)	NA
<b>Total</b>	<b>\$905</b>						

SOURCE: JLARC analysis of modeling by GRS based on the 2021 valuation.

NOTE: Assumes (i) a -2 percent annual investment return in FY22 and a 4.5 percent return annually thereafter, (ii) a tuition increase of 4 percent annually in 2022-23 and 2023-24 and 7 percent annually thereafter, (iii) a discount rate of 5.5 percent, and (iv) an annual TTP subsidy based on a 4.5 percent investment return and 450,000 TTP units sold annually.

<sup>a</sup> In addition to benefit payments, the other components of total obligations are the present value of future benefit payments, administrative expenses, and annual TTP subsidies.

<sup>b</sup> In addition to investment income, the other components of total assets are the present value of future installment payments and the market value of assets.

TABLE E-3

Projected funded status of Legacy Prepaid529 program for surplus fund removal under more conservative assumptions (millions)  
(3.5% long-term investment return and 7% long-term tuition increase)

Fiscal year	Surplus funds removed	Benefit payments <sup>a</sup>	Investment income <sup>b</sup>	Total assets	Total obligations	Unfunded Liabilities/(Surplus)	Funded ratio
2022	\$101.6	\$287.4	(\$60.0)	\$2,840.8	\$1,503.5	(\$1,337.2)	188.9%
2023	101.6	221.7	90.6	2,584.2	1,351.8	(1,232.4)	191.2%
2024	101.6	206.5	82.6	2,329.8	1,207.9	(1,121.9)	192.9%
2025	101.6	200.7	74.4	2,069.0	1,062.4	(1,006.6)	194.7%
2026	101.6	171.2	66.4	1,826.2	940.3	(885.9)	194.2%
2027	0.0	159.8	58.6	1,685.0	823.6	(861.5)	204.6%
2028	0.0	149.3	54.2	1,546.8	711.7	(835.1)	217.3%
2029	0.0	133.6	50.0	1,417.0	610.2	(806.8)	232.2%
2030	0.0	120.8	45.9	1,293.2	516.7	(776.5)	250.3%
2031	0.0	108.2	42.1	1,175.4	431.3	(744.1)	272.5%
2032	0.0	95.7	38.4	1,063.8	354.5	(709.3)	300.1%
2033	0.0	82.8	34.9	958.7	287.0	(671.8)	334.1%
2034	0.0	70.7	31.6	859.8	228.5	(631.3)	376.2%
2035	0.0	61.6	28.4	764.0	176.5	(587.5)	432.9%
2036	0.0	55.1	25.3	668.7	128.5	(540.3)	520.6%
2037	0.0	46.1	22.2	576.6	87.3	(489.3)	660.8%
2038	0.0	36.6	19.2	488.0	53.8	(434.3)	907.8%
2039	0.0	26.1	16.4	404.3	29.4	(374.9)	1,374.0%
2040	0.0	16.2	13.7	325.1	14.1	(311.0)	2,301.5%
2041	0.0	8.7	11.2	248.2	5.8	(242.4)	4,281.3%
2042	0.0	4.0	8.6	170.2	2.0	(168.2)	8,513.8%
2043	0.0	1.6	5.9	88.3	0.5	(87.9)	19,537.6%
2044	0.0	0.5	3.1	0.1	0.0	(0.1)	NA
<b>Total</b>	<b>\$508</b>						

SOURCE: JLARC analysis of modeling by GRS based on 2021 valuation.

NOTE: Assumes (i) a -2 percent annual investment return in FY22 and a 3.5 percent return annually thereafter, (ii) a tuition increase of 4 percent annually in 2022–23 and 2023–24 and 7 percent annually thereafter, (iii) a discount rate of 5.5 percent, and (iv) an annual TTP subsidy based on a 3.5 percent investment return and 450,000 TTP units sold annually.

<sup>a</sup> In addition to benefit payments, the other components of total obligations are the present value of future benefit payments, administrative expenses, and annual TTP subsidies.

<sup>b</sup> In addition to investment income, the other components of total assets are the present value of future installment payments and the market value of assets.

## Appendix F: DB529 liquidity under surplus removal scenarios

The liquidity of investment assets is determined largely by the ability to sell the assets without incurring substantial losses. According to JLARC's independent investment consultant, Callan, public equity, investment-grade fixed income, and some multi-asset credit assets are the most liquid assets in the Defined Benefit 529 (DB529) fund because there are no penalties for selling them under normal market conditions (Table F-1). Private credit, private equity, and real estate are the least liquid assets because they would be subject to an estimated 10–25 percent penalty if sold in a normal market. Under stressed market conditions such as a significant market downturn, selling private equity, real estate, and all multi-asset credit assets would be subject to substantial penalties.

**TABLE F-1**  
**Estimated penalties for selling DB529 assets in normal and stressed markets**

<b>DB529 asset class</b>	<b>Normal market</b>	<b>Stressed market <sup>b</sup></b>
Public equity	None	Lower market value
Investment grade fixed income	None	Minimal
Other multi-asset credit <sup>b</sup>	None	10% – 25%
Private credit	10% – 15%	25% – 35%
Private equity	15% – 25%	40% – 60%
Real estate	15% – 25%	40% – 60%

SOURCE: Callan.

<sup>a</sup> Excludes private credit assets. <sup>b</sup> Stressed market conditions are similar to conditions during the Great Financial Crisis of 2008.

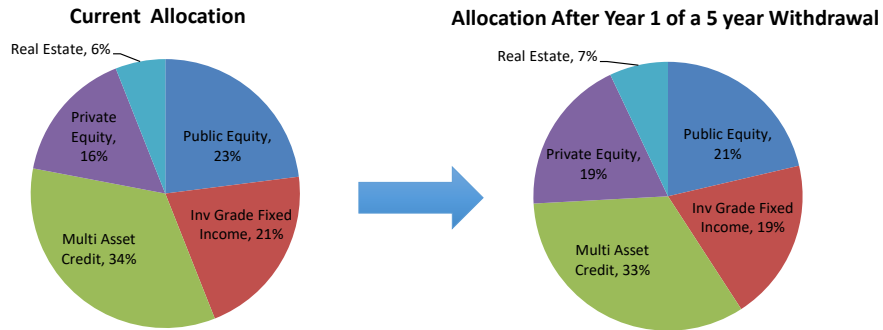
Removing \$1.3 billion in actuarial surplus funds incrementally over five years is projected to cause a moderate level of distortion to the DB529 fund's asset allocation (Figure F-1). After the first year of a five-year withdrawal, the percentages of the fund in liquid assets such as public equity and investment-grade fixed income are projected to decline only slightly. Similarly, the percentages of the fund in less liquid private equity and real estate assets are projected to increase modestly. As a result, the DB529 fund is projected to experience only a slight reduction in the amount and percentage of liquid assets compared with the current allocation (Table F-2).

Removing \$1.3 billion in actuarial surplus funds in a single year is projected to cause significant distortion to the DB529 fund's asset allocation and is not advised, according to JLARC's independent investment consultant (Figure F-2). The percentage of fund assets in public equity is projected to decline from 23 percent to 14 percent, and the percentage in investment grade fixed income is projected to decline from 21 percent to 13 percent. Importantly the percentage of fund assets in illiquid form is projected to increase substantially, leaving less than half of the fund in liquid assets (Table F-2).



**FIGURE F-1**

Removing \$1.3 billion in surplus funds over 5 years is projected to cause a moderate level of asset allocation distortion to the DB529 fund

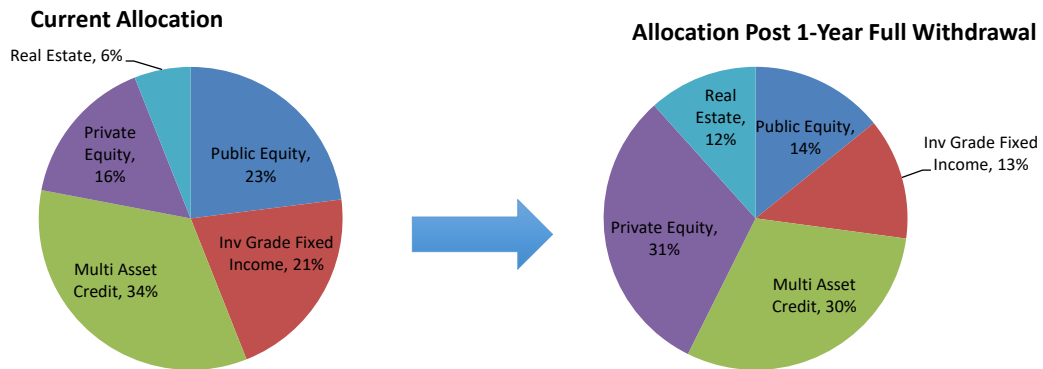


SOURCE: JLARC analysis of investment modeling by Callan.

NOTE: Assumes \$256 million in surplus funds is removed in the first year under normal market conditions.

**FIGURE F-2**

Removing \$1.3 billion in surplus funds in 1 year is projected to cause an extremely high level of asset allocation distortion to the DB529 fund



SOURCE: JLARC analysis of investment modeling by Callan.

Note: Assumes surplus funds are removed under normal market conditions.

TABLE F-2

Effects on DB529 fund liquidity of removing \$1.3 billion in actuarial surplus funds over 5 years versus 1 year

<b>Withdrawal scenario</b>	<b>Liquid assets (\$B)</b>	<b>Total assets (\$B)</b>	<b>Liquidity level</b>	<b>Estimated liability (\$B)</b>	<b>Liquid assets as % of liability</b>	<b>Years of benefit payments <sup>a</sup></b>
Current allocation	\$2.18	\$3.06	71%	\$1.51	144%	>20
\$1.3B over 5 years	1.81	2.76	66%	1.34	135%	>20
\$1.3B over 1 year	0.73	1.71	43%	1.34	54%	4

SOURCE: JLARC analysis of investment modeling by Callan.

<sup>a</sup> Estimated years of benefit payments that can be made from liquid assets in the DB529 fund.

## **Appendix G: Impacts of SOAR Virginia on postsecondary enrollment**

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Virginia529 administers and funds the SOAR Virginia program, which is intended to increase postsecondary enrollment and completion for low-income high school students in Virginia. The primary goals of SOAR are to provide quality mentoring and coaching to students in underrepresented, high-need areas in Virginia, and to provide a scholarship that incentivizes students to fully participate in the program and help offset the cost of higher education. SOAR began as a pilot program in 2010 and is the largest college affordability effort funded by Virginia529, awarding more than \$11 million in scholarships to over 9,000 students since its inception. The program is currently provided in about 130 high schools in Virginia.

Virginia529 partners with six nonprofit organizations that provide college advising and mentoring to participating high school students starting in grade 10, continuing through high school graduation. Students receive advising on academic preparation for post-secondary education, financial literacy training, other support and mentoring, assistance completing college applications, and help obtaining financial aid and completing a Free Application for Federal Student Aid (FAFSA) from their SOAR advisor. Students who remain in the program for all three years receive \$2,000 in scholarship funds, which are deposited in a Virginia529 Invest529 account.

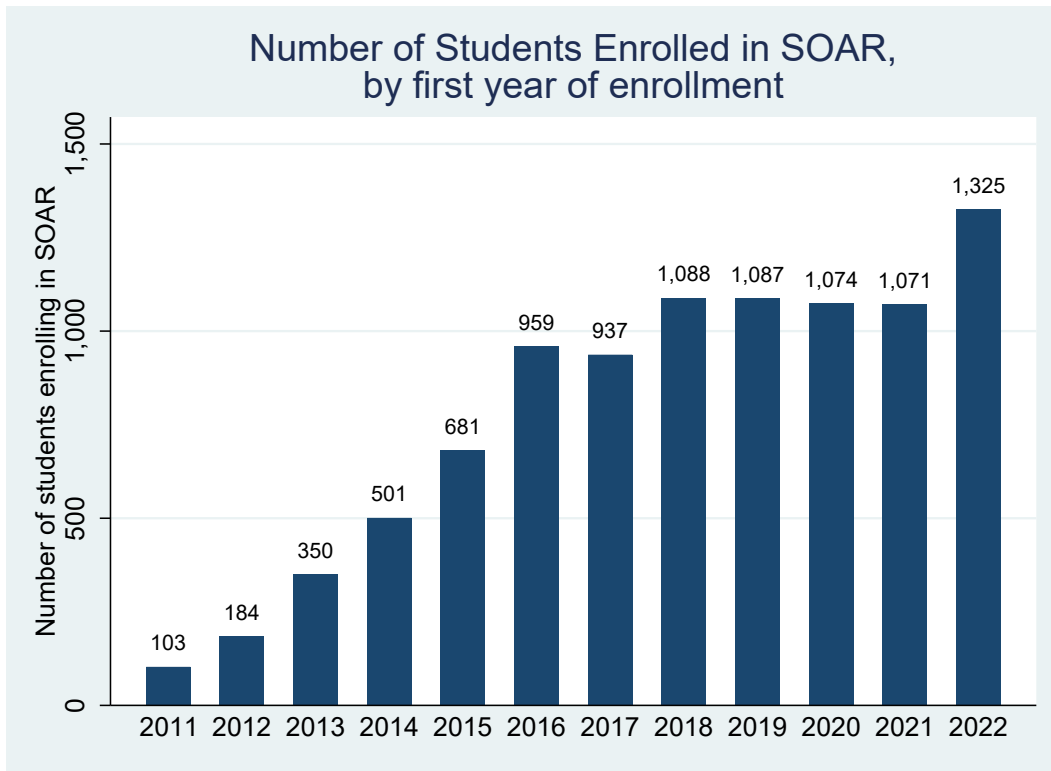
To be eligible for the program, students must be Virginia residents, enrolled in a participating high school, have a minimum cumulative GPA of 2.5 or higher, and qualify for the federal National School Lunch program (an indicator of low income). To remain in the program, students must maintain a 2.5 GPA, meet regularly with their SOAR advisor, attend school regularly, participate in community service, complete a FAFSA during their senior year, and apply to a postsecondary institution.

Virginia529 provides modest administrative funding to the six nonprofit organizations that employ SOAR advisors. SOAR advisors are assigned to a specific high school and typically serve no more than 15 participating students per grade, and no more than 45 students in total. Advisors are often former school counselors and teachers and are typically paid by their organization, not volunteers. Advisors receive a substantial amount of initial and ongoing training for the SOAR program. Advisors meet with students in their high school, both one-on-one and in groups. SOAR is similar in design to early commitment scholarship programs in other states and shares some features of the federal GEAR UP program.

### **Enrollment in SOAR has grown over time**

Since 2011, 9,360 high school students have enrolled in SOAR (as of May 2022). New enrollment grew quickly from 2011 to 2016, then leveled off to about 1,000 new enrollees per year (Figure G-1). About 60 percent of enrollees joined since 2018, including an all-time high of more than 1,300 students joining in 2022.

**FIGURE G-1**  
**New SOAR enrollment has increased to more than 1,000 students per year**



SOURCE: JLARC analysis of SOAR program data.

Three of the six college access provider organizations serve about 85 percent of the students enrolled in SOAR. Great Aspirations Scholarship Program (GRASP) was the initial partner and has enrolled the most participants, accounting for about 40 percent of all students enrolled in SOAR to date. The second- and third-largest providers are the Virginia Community College System (VCCS) and ACCESS College Foundation.

Two-thirds of participants are female. Approximately 60 percent are students of color, including about 40 percent Black, although data on race and ethnicity is available only starting in 2021. About one-third are first-generation college students. More than one-third of participants are from the Tidewater region, about 15 percent are from Central Virginia, and 10 percent are from the Shenandoah Valley.

**SOAR completion rates are high**

Two-thirds of participating students complete all three years of the SOAR program (Table G-1). This completion rate is high for a relatively long program, compared with many education and training programs for disadvantaged youth. The high completion rates may be an indication of program efficacy, and students’ strong relationships with their SOAR advisor. About one-fourth of enrollees participate in SOAR for only one or two years, because they enroll as juniors, or do not meet requirements for some years, or withdraw from the program (for example, because they move to a nonparticipating

school). Another 6 percent of students who submit a SOAR enrollment form do not meet the requirements and do not complete any years.

**TABLE G-1**  
Two-thirds of students enroll in SOAR for the full three years

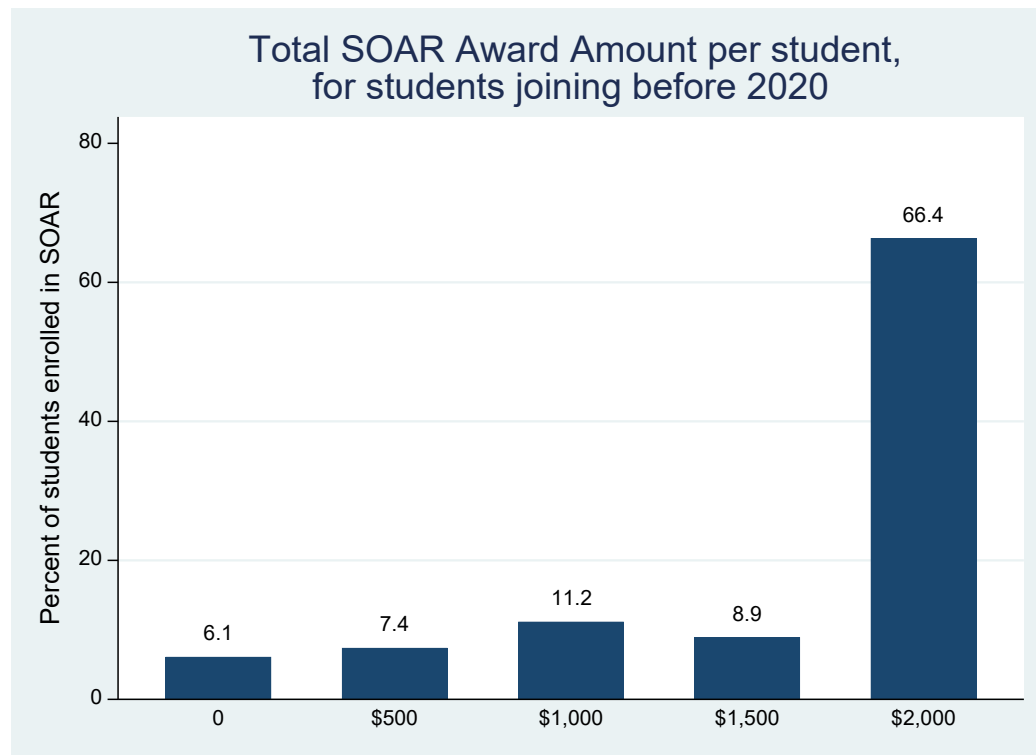
Number of years students met requirements	Number of students	Percentage of students
0	355	6.0%
1	644	10.9
2	961	16.3
3	3,888	66.0
4	42	0.7
<b>Total</b>	<b>5,890</b>	<b>100.0</b>

SOURCE: JLARC analysis of SOAR student data from Virginia 529.

NOTE: Analysis includes students who enrolled before 2020, to allow for time to complete the program.

Consistent with the fact that two-thirds of SOAR students complete the program, two-thirds of students received the maximum total award amount of \$2,000 (Figure G-2). The total amount of Invest529 account awards to students who joined before 2020 was \$9.5 million, with an additional \$1.5 million awarded as of May 2022.

**FIGURE G-2**  
Two-thirds of SOAR participants have earned the full \$2,000 scholarship



SOURCE: JLARC analysis of SOAR program data.

### Many participants do not use their \$2,000 scholarship

For SOAR students who graduated from high school at least five years ago, only about half of their SOAR award amounts have been disbursed to date (Table G-2). Further, of about 1,700 students who enrolled in SOAR before 2016 and have received an award, almost half (47 percent) have not yet received **any** distribution. Some of these students have not enrolled in a postsecondary institution, but a substantial portion of students who did enroll in postsecondary education also have not used their scholarship funds. Of about 1,300 students **who enrolled in a postsecondary institution** and who enrolled in SOAR before 2016 and received SOAR scholarship funds, more than one-third (38 percent) have not yet received a distribution. Interviews with program administrators and access providers suggest several reasons why some students have not requested their scholarship funds, including forgetting about their Invest529 accounts, not needing the funds, and difficulty navigating the disbursement process. SOAR program staff have undertaken several steps in recent years to increase disbursement rates, including notifying students each semester of unused balances, implementing a texting platform to communicate with students, and having the SOAR program manager present to SOAR high school seniors on how to access their accounts and submit an online withdrawal request.

**TABLE G-2**

#### Nearly half of SOAR scholarship funds have not been disbursed

<b>Year joined SOAR</b>	<b>Total amount awarded to date</b>	<b>Total disbursed</b>	<b>Percent disbursed</b>
2011	\$168,000	\$102,885	61%
2012	303,000	178,298	59%
2013	559,000	267,429	48%
2014	785,250	366,243	47%
2015	1,105,000	474,202	43%
<b>Total</b>	<b>2,920,250</b>	<b>1,389,057</b>	<b>48%</b>

SOURCE: JLARC analysis of SOAR student data from Virginia 529.

NOTE: Analysis includes students who enrolled before 2016, to allow for time to request fund disbursement.

After six years, unused funds revert to the SOAR master account and can be used to support new students in the program.

### Three-fourths of SOAR participants enroll in a postsecondary institution

To date, 76 percent of students who have graduated from high school and received an award from SOAR have enrolled in one or more postsecondary institutions. This number was determined by matching 4,600 SOAR completers to National Student Clearinghouse data including public and private institutions, two- and four-year institutions, certificate and degree programs, and out-of-state schools. Seventy percent of these students have enrolled in public institutions, 16 percent in private institutions, and 10 percent in both types. Half enrolled in a four-year institution, a little more than half (53 percent) in a two-year school, and 26 percent in both. Two-thirds of students enrolled in only one postsecondary institution, and the remainder enrolled in more than one institution.

The high postsecondary enrollment rates, even for students who do not use their SOAR scholarship money, may indicate that the effects of the program are due not just to the scholarship, but also to the mentoring and coaching provided. Interviews with SOAR access providers support this interpretation.

### **SOAR increases participants' enrollment in postsecondary institutions**

High postsecondary enrollment rates by themselves do not mean SOAR is effective. High school students who voluntarily enroll in SOAR may be more motivated than their peers to enroll in college and may have done so even if they hadn't participated in SOAR. Determining whether SOAR increased the likelihood that participants would go to college requires a statistical analysis.

The analysis compares postsecondary enrollment rates between students who completed all three years of the program and students who completed only one or two years. The key assumption underlying this approach is that SOAR is more effective for students who complete the program than for students who enroll in SOAR but do not complete all three years. Regression models were used to control for factors unrelated to SOAR that affect postsecondary enrollment, especially students' high school grade point averages.

The statistical analysis of SOAR data suggests that the program substantially increased participants' enrollment in postsecondary institutions. Students who were enrolled in SOAR for three years were 16 percentage points more likely to enroll in a postsecondary institution than students who were enrolled in SOAR for one year (Table G-3). The estimated impact of SOAR is larger for enrolling in a public institution than for enrolling in a private institution and larger for enrolling in a four-year institution than a two-year institution.

The estimated impact of SOAR is also substantial for **completing** a postsecondary credential, including certificates, associates degrees, and bachelor's degrees. For this analysis, the population is limited to those who enrolled in SOAR during the first three years of the program (2011–2013) to allow for at least five years after high school. This limits the population to about 600 students.

**TABLE G-3**  
**Estimated impacts of SOAR completion on postsecondary enrollment**

<b>Outcome</b>	<b>1 year in SOAR</b>	<b>3 years in SOAR</b>	<b>Estimated impact of SOAR completion (percentage points)</b>
Ever enrolled in a post-secondary institution	64.0%	80.1%	16.1%
Ever enrolled in a public post-secondary institution	59.7	73.8	14.1
Ever enrolled in a private post-secondary institution	13.6	16.1	2.5
Ever enrolled in a 4-year institution	32.7	55.0	22.3
Ever enrolled in a 2-year institution	48.7	54.5	5.8
Ever earned a post-secondary credential (certificate, associates degree, bachelor's degree)	19.1	42.1	23.0

SOURCE: JLARC analysis of SOAR student data matched to data from National Student Clearinghouse.

NOTE: Analysis includes 4,614 students who enrolled in SOAR through 2020 to allow for delays in postsecondary enrollment.

Impacts may be overestimated to the extent that students who earn larger SOAR awards and spend more time in the program are more likely to have better outcomes than students who spend less time in SOAR, for reasons other than the program itself, a phenomenon known as selection bias. For example, students who stay in the program for the full three years may be more motivated to attend a post-secondary institution than students who leave SOAR after one or two years. To some extent, including initial GPA as an independent variable in the regression model helps control for such differences. In addition, selection bias is reduced because the analysis includes only students who enrolled in SOAR, rather than a comparison group of students who did not enroll in SOAR. To the extent selection bias remains, the estimated impacts may overstate the true impacts.



## Appendix H: Virginia529's access and affordability partnerships

In recent years, Virginia529 has committed to providing additional funding to support students at risk of not entering or completing a postsecondary program. In 2021, the board approved more than \$13 million in additional funding over FY21–23 to support seven access and affordability programs (Table H-1). The largest commitment is for \$3.75 million to provide additional career coaches to support community college students enrolled in the Workforce Credential Grant program. The remaining \$9.6 million in additional funds is for programs that provide support services to high school students at risk of not enrolling in a postsecondary program. For example, more than \$2.6 million is being provided for scholarships through the GEAR UP Virginia program. GEAR UP is a federal grant program designed to increase the number of low-income students who are prepared to enroll in and complete postsecondary programs. GEAR UP programs are implemented by states and typically provide students with postsecondary scholarships and a wide range of support services, including academic advising, tutoring, career planning, financial aid advising, and mentoring. Additional commitments by Virginia529 provide funding for career coaches and mentors for foster care youth, low-income students, and Hispanic students.

**TABLE H-1**  
Virginia529 has committed to providing more than \$13 million in additional funding for higher education access and affordability programs (FY21–23)

<b>Program</b>	<b>Purpose of funds</b>	<b>Funds committed</b>
FastForward	Additional 15 career coaches <sup>a</sup> to support the New Economy Workforce Credential Grant program at each VCCS college	\$3,750,000
GEAR UP Virginia	Scholarships <sup>b</sup> for the 2021–28 student cohort of the GEAR UP Virginia program	2,625,000
Virginia Foundation for Community College Education	Career coaches for additional 400 foster care youth and additional 4,200 underrepresented high school students in rural Virginia	2,650,000
Virginia College Advising Corps	29 additional advisors to serve an additional 8,700 high school students	2,025,000
Communities in Schools of Richmond	Pilot programs to provide social support services, tutoring, & other interventions at 3 high-poverty high schools in Central Virginia	1,007,500
Virginia Latino Higher Education Network	Summer programs to provide mentoring and coaching for Hispanic high school students	800,500
Great Aspirations Scholarship Program <sup>c</sup>	Additional 16 advisors in schools in areas of high need to provide career counseling, financial education, and financial aid advising	512,000
	<b>Total</b>	<b>\$13,370,000</b>

SOURCE: JLARC analysis of information from Virginia529.

NOTE: <sup>a</sup> The 15 additional career coaches supplement the eight coaches at VCCS colleges, ensuring one coach at each of the 23 community colleges. <sup>b</sup> Virginia529 funding for scholarships allows GEAR UP Virginia to allocate additional funding for program services, including college and career preparation, advising, and financial aid awareness. <sup>c</sup> Funding is for FY22–23 only.

Because most of the additional access and affordability funding provided by Virginia529 is for GEAR UP and other programs that provide coaching and similar services for at-risk students, it is useful to review the research literature on the effectiveness of state GEAR UP programs. A substantial amount

of academic research has focused on GEAR UP programs since they were authorized by Congress in 1998. The research has generally found GEAR UP to have a mixed impact on postsecondary enrollment and completion rates for at-risk students (Table H-2). Studies published in peer-reviewed journals have typically found that some GEAR UP support services are associated with higher enrollment and completion rates, while other program services do not have a statistically significant impact on student outcomes. For example, one study (Kim, 2021) found that one-on-one tutoring was associated with higher college enrollment rates but developing a plan for graduating from high school in four years was not. Other studies have found that GEAR UP is associated with improvement on some outcome measures but not others. For example, one study (Bausmith, 2012) found that increases in participation rates on the sophomore PSAT test were 10–18 percentage points greater at GEAR UP high schools compared with non-GEAR UP high schools. However, the study authors did not find statistically different increases in PSAT scores when comparing GEAR UP and non-GEAR UP high schools.

### **Academic research cited**

- Bausmith, Jennifer and Megan France, “The Impact of GEAR UP on College Readiness for Students in Low Income Schools,” *Journal of Education for Students Placed at Risk* (2012).
- Goodwin, Ryan et al, “Improving College Enrollment of At-Risk Students at the School Level,” *Journal of Education for Students Placed at Risk* (2016).
- Kim, Sanga et al, “Promoting Educational Success: Which GEAR UP Services Lead to Postsecondary Enrollment and Persistence?” *Educational Policy* (2021).
- Leuwerke, Wade et al, “Narrowing the College Readiness Gap: Assessing GEAR UP Iowa's Intermediate Impact on Underserved Students,” *Journal of Education for Students Placed at Risk* (2021).
- Sondergeld, Toni et al, “Evaluating the Influence of an Urban High School Reform Effort on College Readiness and Access Outcomes: A Quasiexperimental Cohort Study,” *Journal of Education for Students Placed at Risk* (2013).

TABLE H-2

Selected studies reviewing the impact of GEAR UP and similar support services on students at risk of not enrolling in or completing a postsecondary program

Study	Key findings
<p><b>The Impact of GEAR UP on College Readiness for Students in Low Income Schools</b> Bausmith (2012)</p>	<ul style="list-style-type: none"> <li>• Compared to non-GEAR UP high schools, <i>participation rates</i> for the sophomore PSAT increased 10-18 percentage points more than for GEAR UP schools.</li> <li>• There were no statistically significant differences between GEAR UP and non-GEAR UP schools in <i>performance</i> on the sophomore PSAT or AP tests.</li> <li>• Students at GEAR UP schools scored 2-3 percentage points higher on the reading and math sections of the SAT.</li> </ul>
<p><b>Improving College Enrollment of At-Risk Students at the School Level</b> Goodwin (2016)</p>	<ul style="list-style-type: none"> <li>• Enrollment at 4-year institutions was 5 percentage points higher at high schools providing homework assistance, mentoring, and visits to college campuses compared to high schools not providing these services.</li> <li>• Enrollment at 2-year institutions was 9 percentage points lower at high schools providing at least 3 college preparatory services.</li> <li>• The study authors concluded that these college preparatory services were associated with a shift in college destination choices rather than an overall increase in postsecondary enrollment.</li> </ul>
<p><b>Promoting Educational Success: Which GEAR UP Services Lead to Postsecondary Enrollment and Persistence</b> Kim (2021)</p>	<ul style="list-style-type: none"> <li>• Students who visited college campuses were 9 percentage points more likely to enroll in college and almost 13 percentage points more likely to persist to their second year of college.</li> <li>• One-on-one tutoring was associated with a 12 percentage point increase in college enrollment within 1-2 years of high school graduation.</li> <li>• Developing a 4-year graduation plan had no statistically significant effects on college enrollment or persistence.</li> </ul>
<p><b>Narrowing the College Readiness Gap: Assessing GEAR UP Iowa's Intermediate Impact on Underserved Students</b> Leuwerke (2021)</p>	<ul style="list-style-type: none"> <li>• Students at GEAR UP high schools attended an average of 2.5 more days of classes than students at non-GEAR UP schools.</li> <li>• Low-income students at GEAR UP high schools showed 3.9 and 8.1 percentage point increases in math and reading proficiency, respectively, but among all students there was no statistically significant impact on math proficiency.</li> <li>• Low-income students showed a 2.8 percentage point increase in meeting the college readiness reading benchmark, but there was no statistically significant effect on math readiness.</li> </ul>
<p><b>Evaluating the Influence of an Urban High School Reform Effort on College Readiness and Access Outcomes: A Quasiexperimental Cohort Study</b> Sondergeld (2013)</p>	<ul style="list-style-type: none"> <li>• On-time high school graduation rates increased from 31 percent for non-GEAR UP students to 45 percent and 51 percent for subsequent GEAR UP cohorts.</li> <li>• College enrollment within 1 year of high school graduation increased from 15 percent for non-GEAR UP students to 22 percent for GEAR UP cohorts.</li> <li>• GEAR-UP students showed statistically significant lower rates of behavior incidents compared to non-GEAR UP students, but the effect sizes were relatively small.</li> </ul>

SOURCE: JLARC analysis