

Return on Investment Study: Breakthrough Central Texas's Austin Program

Submitted to:
AmeriCorps
250 E St., SW
Washington, DC 20024

Submitted by:
ICF Incorporated, LLC
9300 Lee Highway
Fairfax, VA 22031
<https://www.icf.com>

September 21, 2022

This report was commissioned by AmeriCorps' Office of Research and Evaluation under Contract # GS00Q14OADU209 and Order # 5332A20R0013. Information in this report is in the public domain. Please, direct communications related to this report to Lily Zandniapour at lzandniapour@cns.gov and Sarah Yue at syue@cns.gov. Cite this report as follows: Clark, D., Borgida, J., Kulka, L., Miller, B., Modicamore, D., Pershing, J., Thompson, P., Sarwana, M., & Voigt, G. (2022). *Return on Investment Study: Breakthrough Austin*. ICF.



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AUTHORS

This study was conducted by researchers from ICF and BCT Partners:

- Danny Clark, ICF, Research Analyst
- Julia Borgida, ICF, Public Policy Researcher
- Lisa Kulka, BCT Partners, Research and Evaluation Analyst
- Benjamin Miller, ICF, Senior Director
- Dominic Modicamore, ICF, Lead Economist
- Janet Pershing, ICF, Vice President
- Miriam Sarwana, BCT Partners, Research and Evaluation Manager
- Phylicia Thompson, BCT Partners, Research and Evaluation Analyst
- George Voigt, ICF, Economics Analyst

Executive Summary

Program Description

Breakthrough Central Texas is an affiliate of Breakthrough Collaborative, a national college preparation program for low-income middle school students who are soon-to-be first-generation college students.

Breakthrough Central Texas's Austin program offers out-of-school learning opportunities, leadership experiences, and personalized advising.

Those services help students overcome systemic, societal barriers to earning college degrees. AmeriCorps members serve as caseworkers in the program, providing academic support and guidance, monitoring students' grades, holding students accountable for their academic performance, and providing students with resources they need to be successful.

The program commits to working with each student for 12 years to successfully guide them and their families through the complex process of preparing for, enrolling in, and completing college.

To better understand the impact of the program in relation to costs, AmeriCorps commissioned a return on investment (ROI) analysis by ICF, an independent research firm. ROI analyses of national service programs estimate the monetary value of benefits that a program generates per dollar invested.

The ROI analysis estimated the Breakthrough Central Texas's Austin program's ROI to be between \$0.03 and \$10.22 per funder dollar, depending on how long program participants and AmeriCorps members experience increased earnings as a result of the program. The return on each dollar of federal support for the program is between \$0.16 and \$54.56. These results are driven by favorable employment and education outcomes for AmeriCorps members following their service as well as by favorable employment outcomes for program participants once they enter the workforce, resulting from increased educational attainment.

AmeriCorps, the federal agency for volunteerism and national service, provides opportunities for Americans to serve their country domestically, address the nation's most pressing challenges, improve lives and communities, and strengthen civic engagement. Each year, the agency invests more than \$800 million in grants for local nonprofit, community, tribal, and state organizations; places more than 250,000 AmeriCorps members and AmeriCorps Seniors volunteers in intensive service roles; and empowers millions more to serve as long-term, short-term, or one-time volunteers. Learn more at [AmeriCorps.gov](https://www.AmeriCorps.gov).

Overview of Benefits and Costs

To calculate the ROI, the program benefits were identified, quantified, and compared to the program's costs. Benefits of Breakthrough Central Texas's Austin program include:

- **Additional lifetime earnings resulting from improved education and employment outcomes.** Because of the program, participants will have support and services in the process of preparing for and completing college, and as a result will have higher lifetime earnings.
- **Additional earnings by AmeriCorps members.** Serving in AmeriCorps leads to increased wages and reduced unemployment post-national service through skill acquisition, as well as increased educational attainment post-service.
- **Living allowances, stipends, and education awards.** AmeriCorps members receive living allowances and stipends during their national service and receive a Segal AmeriCorps Education Award after successful completion.
- **Increased tax revenue for government.** Federal, state, and local governments receive more income tax revenue from increased AmeriCorps member earnings post-service and from program participants once they enter the workforce. State and local governments also realize additional sales tax revenue related to those earnings. Federal and state governments also realize tax revenue from the taxable living allowances, stipends, and education awards provided to AmeriCorps members.
- **Reduced lifetime spending on corrections, public assistance, and social insurance.** Because of the increase in secondary and postsecondary educational attainment for AmeriCorps members and program participants, federal and state governments spend less on these items.

The estimated annual cost for Breakthrough Central Texas's Austin middle school program in 2019 is \$810,388, of which \$151,845 is estimated to be funded by the federal government, or roughly 19 percent.

ROI Results

Table ES-1 shows the ROI results. Each row represents a different ROI calculation depending on which benefits are considered (all benefits or only benefits to the federal government) and which funding is considered (federal funding only or all funding). The ROIs are presented as dollars returned for every dollar of investment. The analysis used three different scenarios to estimate benefits under different assumptions. Specifically, the study assumed that increased earnings attributable to the program lasted for 1 year (short-term scenario), 15 years (medium-term scenario), or 30 years (long-term scenario).

Table ES-1. ROI Estimates

ROI calculation	ROI scenario		
	Short-term	Medium-term	Long-term
Total benefits per federal dollar	\$0.16	\$29.89	\$54.56
Total benefits per funder dollar	\$0.03	\$5.60	\$10.22
Federal government benefits per federal dollar	\$0.06	\$8.52	\$15.24

The program produces strong returns for the medium- and long-term scenarios for all ROI calculations. The magnitude and direction of the results of the ROI calculations are driven by several factors:

- **Income gains by program participants due to higher educational attainment.** Breakthrough participants enjoy increased earnings during their working years attributable to their increased educational attainment.
- **Additional earnings by AmeriCorps members.** Serving in AmeriCorps leads to increased wages and reduced unemployment post-national service through skill acquisition, as well as increased educational attainment post-service.
- **Reduced lifetime spending on corrections, public assistance, and social insurance.** Because of the increase in secondary and postsecondary educational attainment for AmeriCorps members and program participants, federal and state governments spend less on these items.

In the short-term scenario—which only includes benefits for 1 year post-program—the ROI results indicate that there is a short-term loss to all funders under all three ROI calculations. An ROI that is below \$1 in the first year post-program is common in programs where there is an initial one-time investment made and benefits accrue in the following years. This is because it can require several years of benefits to recoup the initial investment and generate positive returns.

Introduction

AmeriCorps contracted with ICF Incorporated, LLC (hereafter ICF) to research and quantify the return on investment (ROI) of several programs that rely on national service—specifically AmeriCorps—as a major resource to sustain operations. ROI analyses measure the performance of programs and build the base of evidence for future resource allocation decisions. ROI study results demonstrate the value of AmeriCorps programming to relevant stakeholders.

This project began with a comprehensive literature review and preliminary assessments of whether ROI analyses were feasible for five national service programs. These feasibility studies included thorough reviews of these programs' recent evaluations, detailed logic models, proposed ROI analysis methodologies for each program, and a scorecard mechanism that determined the viability of conducting an ROI analysis for each selected program.

Upon completion of five feasibility studies, AmeriCorps selected four programs to be the subjects of ROI studies for fiscal year 2022: Breakthrough Central Texas's Austin program, Nevada Conservation Corps, SBP, and Washington State Department of Veterans Affairs Vet Corps. This ROI study measures the benefits of Breakthrough Central Texas's Austin program against costs.

This study is organized into five sections:

- **Program Description** describes the program's design, activities, and objectives, along with the role that national service (specifically AmeriCorps) plays in its operation. This section also provides a brief history of past evaluations, outlines the factors that made this program a strong selection for an ROI study, underscores the population this program serves, and identifies a set of ROI estimates of other programs that have similarities to Breakthrough Central Texas's Austin program.
- **ROI Methodology** outlines how this analysis used various data sources to monetize benefits derived from Breakthrough Central Texas's Austin program, describes its associated program costs, and explains how opportunity costs were calculated.
- **Benefits, Forgone Benefits (Opportunity Cost), Program Costs, and ROI Results** provides a detailed description of the program benefits, forgone benefits (opportunity cost), and program costs that are inputs into the ROI analyses and presents the results of the three ROI calculations across different assumptions.
- **Recommendations for Further Research** explores ways AmeriCorps and others could further build the evidence base for this program and similar programs, including how to address limitations of this study.
- **Conclusion** summarizes key points from the ROI study overall.

Program Description

Breakthrough Central Texas is an affiliate of Breakthrough Collaborative, a national college preparation program for low-income middle school students who are soon-to-be first-generation college students. Breakthrough Central Texas's Austin program offers out-of-school learning opportunities, leadership experiences, and personalized advising. Those services help students overcome systemic, societal barriers to earning college degrees. AmeriCorps members serve as caseworkers in the program, providing academic support and guidance, monitoring students' grades and holding students accountable for their academic performance, and providing students with resources they need to be successful. The program commits to working with each student for 12 years to successfully guide them and their families through the complex process of preparing for, enrolling in, and completing college.

Population Served

Table 1 shows the demographic characteristics of the students served by Breakthrough Central Texas's Austin program.¹ The students served by the program are diverse in terms of age, race, gender, location, and other background characteristics. All students served by Breakthrough would be first-generation college graduates. The majority of students served identify as non-white and low income. 2,118 students were served by the program in the 2019–2020 academic year, with 281 middle school and 383 high school students in the program. Of the 485 students who graduated high school as of 2020, 179 have become first-generation college students.

¹ Will Davies, Breakthrough Central Texas contact, personal communication, March 9, 2022. Hereafter, all instances of Breakthrough Central Texas referenced as a data source were retrieved from this communication.

Table 1. Selected Demographic Characteristics of Middle School Population Served Through Breakthrough Central Texas's Austin Program During Fiscal Year 2019–2020²

Characteristic	Percentage
Race/ethnicity	
Hispanic/Latino	81%
Black/African American	14%
White	1%
Asian	3%
Multiracial	1%
Gender	
Female	52%
Male	48%
Grade	
7th grade	55%
8th grade	45%

Source: Breakthrough Central Texas

Breakthrough Central Texas's Austin Program Evaluation History

There have been two evaluations completed for Breakthrough Central Texas's Austin program: Malerba (2011) and Hutson and Lamb (2020). This study used outcome data from both for the ROI analysis.

Evaluation Report: Breakthrough Central Texas, Austin Independent School District (AISD) Impact Report³

Breakthrough Central Texas's 2020 evaluation assessed the effect of participation in their middle school program on college graduation rates. Students enrolled in the Breakthrough program in 7th grade who went on to graduate from Austin Independent School District (AISD) were more likely to enroll in and graduate from college. The authors developed a comparison group of students attending in the same school years who also graduated from AISD with propensity score matching for the Breakthrough sample. For propensity score matching, the authors used AISD administrative data student demographics, academic performance, attendance, and school disciplinary records. The study estimated that participants were 7 percentage points more likely to graduate with a bachelor's degree than non-participants.

² This fiscal year was representative of the most recent data available regarding the population served.

³ Hutson and Lamb (2020). *Breakthrough Central Texas, Austin Independent School District (AISD) impact report*.

Evaluation Report: Breakthrough Austin Impact Study

Breakthrough's 2011 evaluation (Malerba, 2011) assessed the high school graduation and college enrollment rates among participants and non-participants of Breakthrough Central Texas's Austin program who were in 7th grade in the 2001–2002 through 2003–2004 school years. The study found, after controlling for student demographic, academic, and behavioral characteristics, that participating students were 3 times more likely than non-participating students to graduate from high school and nearly 2 times more likely to enroll in college. After creating propensity block groups, the authors analyzed the impact by subgroup. They found more marginal impacts on graduation and enrollment for the highest achieving students: a 3-percentage-point increase in high school graduation rate and a 16-percentage-point higher likelihood of enrolling in college. They found more significant impacts for students who only met 6th grade academic standards: a 10-percentage-point increase in graduation and a 63-percentage-point increase in enrollment. They also found more significant impacts for students who had somewhat lower scores on state reading and math assessments: an 18-percentage-point increase in graduation and a 20-percentage-point increase in enrollment. Pooling the blocks together resulted in a 10-percentage-point increase in high school graduation rate.

Selection of Program for the AmeriCorps ROI Project

ICF recommended making Breakthrough Central Texas's Austin program the subject of an ROI study based on recent evaluations that documented program outcomes. These were related to college enrollment and graduation rates of participants who received tutoring and case management services in middle school.

This ROI analysis of Breakthrough Central Texas's Austin program will have relevance to similar Breakthrough Collaborative programs nationwide and other college access programs for middle school students.

This is the first AmeriCorps ROI study on an intervention at the middle school level.

Comparable ROI Estimates

ROI studies of other programs that offer similar services provide context for ROI findings. Relevant studies are described below and summarized in Table 2.

The Joint State Government Commission of Pennsylvania commissioned an ROI analysis of 10 afterschool and out-of-school educational programs in Pennsylvania. The report included programs with various objectives, ranging from social/emotional skill development to athletics/wellness to college preparatory programming for students in grades K–12. The ROI methodology assumed an investment of \$50 million in state funding. The authors estimated this would allow 21,739 additional students to attend an out-of-school-time (OST) program for a year. Four negative behavior categories were examined: adolescent pregnancy, violence and crime, high school dropout, and substance use. The authors estimated the reduction in negative behavior using findings from other literature. The percentage of risk reduction was multiplied by the 21,739 additional program participants to estimate the reduction in negative behaviors by OST programming. This was multiplied by the annual and lifetime costs of these negative

behaviors to the Commonwealth of Pennsylvania per student to determine savings. They determined the ROI is \$6.69 for each \$1 invested (Joint State Government Commission, 2021).

Millett and Nettles (2009) evaluated seven programs supported by Developing High-Potential Youth (DHPY) program grants. The main objective of the programs is to increase the number of traditionally underrepresented students enrolled at top colleges and universities in the United States. The programs have served nearly 2,000 middle and high school students. The authors analyzed the returns to program participants compared to program costs. They calculated the increase in university applications and enrollments for program participants by comparing each program's rates with national rates. First, the authors estimated the number of additional program participants who enrolled in a selective university compared to national enrollments. They estimated the lifetime earnings advantage for students who graduated from a selective college compared to those who did not. Across the seven programs, they found an average return to individuals over their lifetime of \$15 per dollar of program costs. Returns for individual programs in the set of seven ranged from \$8 to \$24 per dollar of program costs (Millett and Nettles, 2009).

The Boston Consulting Group analyzed the returns to individuals participating in Sutton Trust programs throughout the United Kingdom. The programs analyzed support toward college access for low-income students of ages ranging from 3 to 18. The benefits analysis focused on the increased earnings of program participants during their working years. They estimated a lifetime return of £15 for every £1 invested in the programs, or \$30 for every \$1 invested. The study found a wide variation in ROIs between types of programs, ranging from £3 to £31 per £1 invested, or—in U.S. dollars—approximately \$6 to \$62 per \$1 invested (The Sutton Trust, 2007).

Table 2. Relevant ROI Studies

Study	College prep programming	Benefits/cost savings evaluated	Net benefits/cost savings per student or program	ROI estimate
Joint State Government Commission, General Assembly of The Commonwealth of Pennsylvania (2021)	Variety of out-of-school programs that provide academic and college prep programming	Reduced adolescent pregnancy, violence and crime, high school dropout, substance use	Benefits: \$15,398 per student Costs: \$2,318 per student	\$6.69 for each \$1 invested
Millett and Nettles (2009)	College preparation program for traditionally under-represented students	Increased college applications and enrollments leading to increased lifetime earnings	Not calculated	\$15 for each \$1 invested

Study	College prep programming	Benefits/cost savings evaluated	Net benefits/cost savings per student or program	ROI estimate
The Sutton Trust (2007)	Academic and college preparation programming serving students of various grade levels	Enrollment and graduation from university leading to increased lifetime earnings	Not calculated	\$6–\$62 for each \$1 invested

ROI Methodology

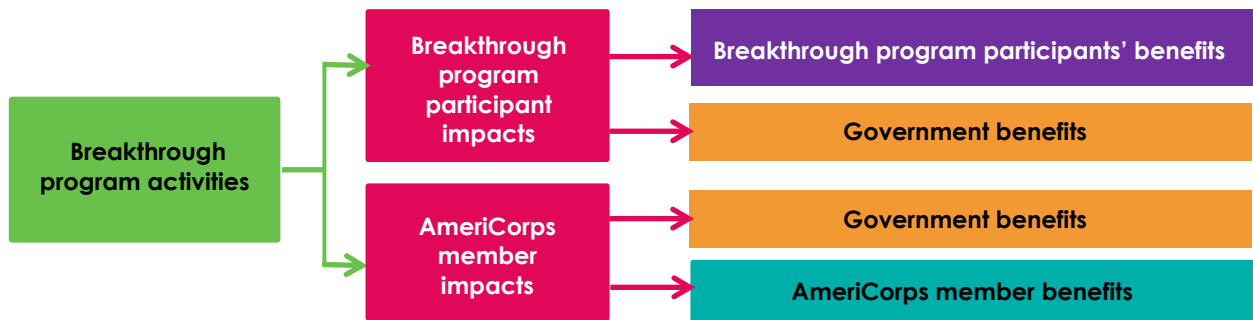
The methodology for estimating the ROI for Breakthrough Central Texas's Austin program consisted of the following components:

- 1. Measuring and monetizing program benefits.** This included using program data provided by Breakthrough Central Texas, publicly available data, and other third-party sources to determine the benefits to program participants, AmeriCorps members, and the government.
- 2. Estimating forgone benefits (opportunity costs).** This ROI analysis estimated two types of forgone benefits. The first was the professional opportunity cost to Breakthrough AmeriCorps members for their period of national service, during which they could have earned more pay by doing other work. The second was the investment opportunity cost for Breakthrough AmeriCorps program funding that could have been used for other purposes.
- 3. Assessing program costs.** Breakthrough Central Texas provided program costs for the program year of September 2018 through August 2019. Breakthrough Central Texas costs for the 2018–2019 program year included operating costs, AmeriCorps member expenses, and other indirect costs. AmeriCorps member expenses included the living allowance amounts received during service and the expected education awards received post-service.
- 4. Calculating the ROI.** The ROI analysis includes three ROI calculations, each assessed under three scenarios representing different assumptions about the persistence of program outcomes:
 - Total benefits per federal dollar
 - Total benefits per funder dollar⁴
 - Federal government benefits per federal dollar

⁴ The different funder groups whose investment is in this calculation include the federal government (i.e., AmeriCorps) and match funding from state and local governments.

This analytical framework includes only those benefits that could be reasonably monetized given the available data and that likely would not have occurred without Breakthrough Central Texas's Austin program. Figure 1 shows how Breakthrough Central Texas's Austin program activities can result in benefits to Breakthrough Central Texas's Austin program participants; Breakthrough AmeriCorps members; and federal, state, and local governments.

Figure 1. Benefits Among Stakeholder Groups From Breakthrough Central Texas



Available data establish that Breakthrough AmeriCorps members enjoy earnings impacts as a result of serving with Breakthrough Central Texas. However, the data do not establish the duration of those benefits. To address a range of possible durations for those benefits, the analysis includes three scenarios:⁵

- **Short-term.** This scenario assumes short-term earnings impacts. The assumption is that earnings impacts are limited to a single year after program exit. This scenario also assumes no lifetime benefits are realized.
- **Medium-term.** This scenario assumes a longer duration of earnings impacts. The assumption is that earnings impacts last 15 years. A 3 percent discount rate is applied each year to represent net present value in 2021 dollars.⁶ This scenario also assumes only half of the net present value of lifetime benefits is realized.

⁵ These three scenarios consider varying durations of how long increased employment and earnings benefits last for Breakthrough AmeriCorps members. They also consider varying durations for lifetime benefits that stem from the Breakthrough program. For example, lifetime benefits in terms of decreased public assistance, social insurance, and corrections costs result from Breakthrough AmeriCorps members' higher educational attainment post-service. The analysis estimates lifetime benefits differently in the three scenarios. Specifically, the net present value of the entire lifetime benefit is realized for the long-term scenario, half of the net present value of the lifetime benefit is realized for the medium-term scenario, and no lifetime benefit amount is realized for the short-term scenario.

⁶ The Office of Management and Budget (1992) defines a discount rate as, "The interest rate used in calculating the present value of expected yearly benefits and costs" (p. 18). Regarding the 3 percent discount rate, see Office of Management and Budget (2003).

- **Long-term.** This scenario assumes sustained earnings impacts throughout Breakthrough AmeriCorps members' working years. The assumption is that earnings impacts last 30 years. A 3 percent discount rate is applied each year to represent net present value in 2021 dollars. This scenario also assumes the entire net present value of lifetime benefits is realized.

The long-term scenario (i.e., 30 years of sustained employment and earnings benefits) represents roughly a lifetime of working years for a given person while the short-term scenario assumes benefits for only the year after program participation or service is completed. The medium-term scenario (i.e., 15 years of sustained employment and earnings benefits) represents the midpoint between these two scenarios.

Monetizing Program Benefits, Forgone Benefits (Opportunity Costs), and Program Costs

This analysis monetized an array of benefits and included Breakthrough Central Texas's Austin program costs and expected opportunity costs—all in 2021 dollars—to assess the ROI of Breakthrough Central Texas's Austin program. Additional details on the methodology employed and the calculations used for this analysis are in Appendix B. Data on costs and benefits are from the 2018–2019 school year, prior to any disruptions from the COVID-19 pandemic that began in 2020.

Outcomes of Breakthrough Central Texas's Austin program result in monetizable benefits to the participants of Breakthrough Central Texas's Austin program; Breakthrough AmeriCorps members; and federal, state, and local governments. Table 3 summarizes these benefits and data sources by stakeholder group.

Table 3. Benefits Realized From Breakthrough Central Texas's Austin Program by Stakeholder Group

Stakeholder group	Benefits
Breakthrough participants	<ul style="list-style-type: none"> • Additional lifetime earnings from increased educational attainment as a result of educational support services
Breakthrough AmeriCorps members	<ul style="list-style-type: none"> • Additional earnings from reduced unemployment • Additional lifetime earnings from increased educational attainment as a result of education awards • Post-tax living allowances and education awards

Stakeholder group	Benefits
Federal, state, and local governments	<ul style="list-style-type: none"> • Tax revenue from increased earnings by Breakthrough AmeriCorps members post-program and sales tax revenue from the induced increased economic activity • Tax revenue from living allowances and education awards • Reduced lifetime spending on corrections, public assistance, and social insurance from increased educational attainment by Breakthrough AmeriCorps members as a result of education awards • Reduced lifetime spending on corrections, public assistance, and social insurance from increased educational attainment by Breakthrough participants as a result of education awards • Lifetime tax revenue from increased educational attainment by Breakthrough AmeriCorps members as a result of program service • Lifetime tax revenue from increased educational attainment by Breakthrough participants as a result of program participation

Benefits to Program Participants

Additional Lifetime Earnings From Increased Educational Attainment as a Result of Program Participation (Benefit to Breakthrough Program Participants)

The analysis used the following finding from Hutson and Lamb (2020) to estimate how many additional Breakthrough participants graduate college: 32 percent of Breakthrough participants graduated from bachelor programs compared to 25 percent of non-Breakthrough participants, significant at the 0.05 level.

The analysis used Malerba (2011) to estimate the impact of the Breakthrough program on the number of participants that graduate high school: 96 percent of Breakthrough participants graduated high school and 86 percent of non-Breakthrough participants graduated high school, significant at the 0.05 level.

The analysis used the number of additional high school and college graduates to quantify the additional earnings they obtain due to this increased educational attainment. The analysis used the 2019 Current Population Survey to estimate median income by race, gender, and education (U.S. Census Bureau, 2019-c) and multiplied the annual difference in earnings estimate by the number of additional high school and college graduates by demographic group to calculate the total additional earnings due to the Breakthrough program.

Benefits to AmeriCorps Members

Post-Tax Living Allowances and Education Awards (Benefits to Breakthrough AmeriCorps Members)

Some member-specific benefits realized due to AmeriCorps members serving in Breakthrough Central Texas's Austin program include the post-tax living allowances AmeriCorps State and National members are allotted during their national service and the post-tax education awards they receive after service completion. All are considered taxable income and thus result in increased government revenue.⁷ The post-tax living allowance and the education award amount that was used to repay student loans were included in the ROI analysis as direct one-time benefits to Breakthrough AmeriCorps members. Since the ROI analysis only measures outcomes for middle school students, this value is multiplied by the proportion of middle school students served to the total student population to estimate the benefits attributable to middle school students only.

Additional Earnings From Reduced Unemployment (Benefit to Breakthrough AmeriCorps Members)

Evaluations have shown that serving in AmeriCorps fosters higher skill acquisition, increased educational attainment, and higher income from increased employment post-national service.⁸ Freidman et al. (2016) found that unemployment among AmeriCorps members 6 months after their period of national service was 5 percentage points lower compared to 6 months before service.⁹ To monetize this decrease in unemployment, the analysis first determined the demographic distribution of Breakthrough AmeriCorps State and National members who served during the most recent program year in terms of race/ethnicity, gender, age, and education level pre-service using data provided by Breakthrough Central Texas. The analysis then proceeded to:

1. Estimate Breakthrough AmeriCorps members' per-person average annual earnings (weighted by the above demographics) using data from the Current Population Survey's Annual Social and Economic (ASEC) Supplement for 2020 (U.S. Census Bureau, 2020)
2. Multiply the 5-percentage-point reduction in unemployment from Freidman et al. (2016) by the number of Breakthrough AmeriCorps members who served during the most recent program year to estimate the number of *additional* Breakthrough AmeriCorps members employed post-service

⁷ The tax implications of the AmeriCorps member education award are stated here: AmeriCorps. (n.d.). Segal AmeriCorps Education Award. <https://americorps.gov/members-volunteers/segal-ameri-corps-education-award>

⁸ Relevant studies include Markovitz et al., 2008; Spera et al., 2013; Friedman et al., 2016; Zeidenberg et al., 2016.

⁹ See page 56 of Friedman et al. (2016).

3. Multiply the demographically weighted per-person average annual earnings by the number of additional Breakthrough AmeriCorps members employed to estimate the total increased earnings attributable to national service
4. Multiply the total increased earnings by the proportion of middle school students to estimate the benefits attributable to working with middle school students of all students served

The earnings metrics for Breakthrough AmeriCorps members were applied and discounted based on the short-term, medium-term, and long-term scenarios to represent net present 2021 dollars. The post-tax Breakthrough AmeriCorps members' projected earnings represents the additional income earned by AmeriCorps members attributable to serving with Breakthrough Central Texas.

Additional Lifetime Earnings From Increased Educational Attainment as a Result of Education Awards (Benefit to Breakthrough AmeriCorps Members)

Another benefit derived from national service is the higher educational attainment of AmeriCorps members. AmeriCorps members in general—as documented in Friedman et al. (2016)—can use their education awards to pay for additional postsecondary educational attainment or to repay student loans.

Friedman et al. (2016) reported that 46 percent of AmeriCorps State and National members used their education award to pursue additional postsecondary education while 33 percent used it to repay student loans.¹⁰

This analysis estimated the expected increase in lifetime earnings of Breakthrough AmeriCorps members attributable to the use of education awards to pay for additional postsecondary schooling. Based on the findings from Friedman et al. (2016), this ROI analysis estimated the amount in post-tax education awards that Breakthrough AmeriCorps members used to pay for additional educational attainment. The analysis then estimated the value of the additional educational attainment attributable to the education awards in terms of lifetime earnings using data from Trostel (2015). This value was multiplied by the proportion of middle school students of all students served. These estimated additional post-tax lifetime earnings were included as a benefit to Breakthrough AmeriCorps members.

Benefits to Government

Benefits to government include tax revenue generation and reduced spending on public assistance, social insurance, and corrections, resulting from increased earnings and educational attainment from Breakthrough AmeriCorps members and participants.

¹⁰ Friedman et al. (2016). op. cit. Exhibit VIII-6.

Benefits to Government From Increased Earnings Due to Educational Attainment by Breakthrough Program Participants

Federal and state governments benefit from increased educational attainment by Breakthrough program participants. Those benefits include:

- **Reduced lifetime spending on corrections, public assistance, and social insurance from increased educational attainment as a result of education awards.** Educational attainment is associated with less dependence on government assistance programs and lower incarceration rates (Blagg and Blom, 2018; Harlow, 2003). Because of Breakthrough program participants' increased secondary and postsecondary educational attainment, federal and state governments spend less. For the monetization of these benefits, the analysis paired the expected increase in educational attainment of Breakthrough program participants with the expected difference in per-person lifetime government cost savings from Medicaid, SNAP, unemployment insurance, workers' compensation, and corrections for individuals with different levels of educational attainment. The latter values were provided by Levin (2007) and Trostel (2015).
- **Lifetime tax revenue from increased educational attainment as a result of program participation.** Another benefit related to Breakthrough program participants captured in this ROI study is the lifetime tax revenue generated from participants' increased educational attainment due to program participation. Here, the estimated increase in Breakthrough program participants' earnings was multiplied by relevant tax rates. This tax revenue includes federal income, state income, property, Social Security, Medicare, and sales taxes.

Benefits to Government From Increased Earnings by Breakthrough AmeriCorps Members

Federal, state, and local governments benefit from increased earnings by Breakthrough AmeriCorps members due to lower unemployment as a result of service. Those benefits include:

- **Income tax revenue from increased earnings by Breakthrough AmeriCorps members post-service.** Federal income taxes, state income taxes, Medicare taxes, and Social Security taxes were estimated for the additional pre-tax earnings of Breakthrough AmeriCorps members based on 2020 rates. For both federal and state income taxes, the analysis estimated proportional tax rates representing the share of earnings paid in taxes.

To estimate proportional tax rates that reflect federal- and state-level progressive tax brackets and standard deductions, the amount of total taxes paid was divided by the pre-tax earnings per Breakthrough AmeriCorps member. For the state income tax rate, the analysis weighted individual state-level rates by their respective state populations to estimate a weighted national tax rate to apply program-wide. A weighted national tax rate was used because Breakthrough AmeriCorps members may disperse to various locations nationwide following their service terms and continue to migrate over the course of their working

years. These values were multiplied by the proportion of middle school students in the program to estimate the benefits attributable to the outcomes measured.

- **Sales tax revenue from the increased economic activity that results from increased earnings by Breakthrough AmeriCorps members post-service.**

To estimate the additional sales tax revenue generated due to the additional post-tax earnings of Breakthrough AmeriCorps members, the combined state and average local sales tax rate for the United States—weighted by states' populations—was calculated. This analysis applied that rate to the estimated taxable expenditures of Breakthrough AmeriCorps members based on their post-service pre-tax earnings using Consumer Expenditure Survey data (U.S. Bureau of Labor Statistics, 2021).¹¹ The resulting product was then applied to the share of post-tax earnings attributable to serving with Breakthrough Central Texas to estimate state and local government sales tax revenue. This value was multiplied by the proportion of middle school students of all students served.

Benefits to Government From Increased Earnings Due to Educational Attainment by Breakthrough AmeriCorps Members

Federal and state governments benefit from increased postsecondary educational attainment by Breakthrough AmeriCorps members. Those benefits include:

- **Tax revenue from education awards.** Education awards provided to Breakthrough AmeriCorps members upon service completion are subject to taxes, resulting in additional government revenue.¹² This ROI analysis applied federal income, state income, Social Security, and Medicare tax rates to the expected total amount of education awards to be given to Breakthrough AmeriCorps members to estimate these additional taxes. This value was multiplied by the proportion of middle school students of all students served. Both estimated proportional federal and state income tax rates were used. Sales taxes were not estimated for education awards because they cannot be used for consumer purchases.
- **Reduced lifetime spending on corrections, public assistance, and social insurance from increased educational attainment as a result of education awards.** Higher educational attainment is associated with less dependence on government assistance programs and lower incarceration rates (Blagg and Blom, 2018; Harlow, 2003). Because of Breakthrough AmeriCorps members' increased postsecondary educational attainment due to the use of the education award, federal and state governments spend less. For the monetization of these benefits, the analysis paired the expected increase in

¹¹ To calculate the estimated taxable expenditures, Consumer Expenditure Survey (CE) Table 1203 was used from the U.S. Bureau of Labor Statistics (2021). This table lists the annual expenditure means by pre-tax income tax brackets. Thus, the pre-tax earnings of Breakthrough AmeriCorps members were used instead of their post-tax earnings to calculate this metric. Please visit this site for more details: <https://www.bls.gov/cex/tables/calendar-year/mean-item-share-average-standard-error.htm#cu-income>.

¹² The tax implications of the AmeriCorps member education award are stated here: AmeriCorps. (n.d.). Segal AmeriCorps Education Award. <https://americorps.gov/members-volunteers/segal-ameri-corps-education-award>

postsecondary educational attainment of Breakthrough AmeriCorps members with the expected difference in per-person lifetime government cost savings from Medicaid, SNAP, unemployment insurance, workers' compensation, and corrections for individuals with different levels of educational attainment. The latter values were provided by Trostel (2015). This value was multiplied by the proportion of middle school students of all students served.

- **Lifetime tax revenue from increased educational attainment as a result of education awards.** Another benefit related to Breakthrough AmeriCorps members captured in this ROI study is the lifetime tax revenue generated from members' higher postsecondary educational attainment due to the use of the education award. Here, the estimated increase in Breakthrough AmeriCorps members' postsecondary educational attainment was paired with the expected difference in per-person lifetime taxes for individuals with different levels of education as provided by Trostel (2015). This lifetime tax revenue includes federal income, state income, property, Social Security, Medicare, and sales taxes derived from use of the education award. This value was multiplied by the proportion of middle school students of all students served.

Benefits to Government From Living Allowances Received by Breakthrough AmeriCorps Members

The living allowance provided to Breakthrough AmeriCorps members during their service term is considered taxable income. This analysis applied a proportional federal income tax rate as well as Medicare and Social Security tax rates to the pre-tax living allowance amount received by Breakthrough AmeriCorps members for the most recent program year. The analysis also applied a sales tax rate to the estimated taxable expenditures of Breakthrough AmeriCorps members based on their post-tax living allowance amount to estimate additional state and local government revenue.

Forgone Benefits (Opportunity Costs)

The analysis estimated forgone benefits of both members and funders because of their participation and investment in Breakthrough Central Texas's Austin program. These forgone benefits were subtracted from the program benefits (shown above) to calculate the net benefits of the program. Those net benefits were then compared to program cost to calculate the ROI. These forgone benefits are referred to as the *professional and investment opportunity costs*, described below.

Professional Opportunity Cost to Breakthrough AmeriCorps Members

The first opportunity cost was the professional opportunity cost to Breakthrough AmeriCorps members for their period of national service, during which they could otherwise be working and earning higher pay. To calculate the opportunity cost, this analysis estimated what Breakthrough AmeriCorps members would have earned if they did *not* serve with Breakthrough Central Texas. Specifically, this analysis estimated the weighted average annual earnings of this group as well as their weighted unemployment rate using ASEC data and the demographic distribution of Breakthrough AmeriCorps members for the 2020–2021 program year. The demographics included were gender, age, race/ethnicity, and the highest level of education pre-

service. The weighted average annual earnings represent the expected earnings of the Breakthrough AmeriCorps members if they were employed but *not* serving with Breakthrough Central Texas. The weighted unemployment rate represents how many of the Breakthrough AmeriCorps members would have been unemployed if they did *not* serve with Breakthrough Central Texas. These weighted metrics were first used to estimate the portion of Breakthrough AmeriCorps members who would have been employed and then to calculate the aggregate earnings those employed individuals would have made without serving with Breakthrough Central Texas. Namely, they are used to calculate the aggregate post-tax earnings this population would forgo due to serving with Breakthrough Central Texas for 1 year.

Some of the forgone earnings would have been paid in the form of taxes. To appropriately allocate opportunity costs between Breakthrough AmeriCorps members and government, the analysis estimated the reduced tax revenue for federal income, state income, Social Security, and Medicare taxes. The analysis also estimated the reduction in sales tax from reduced consumption. Combined, these taxes represent what the various levels of government are forgoing in tax revenue when these individuals decide to serve with Breakthrough Central Texas instead of working for higher pay. The summation of all forgone taxes and the forgone post-tax earnings of Breakthrough AmeriCorps members is called the *total professional opportunity cost*. This value was multiplied by the proportion of middle school students of all students served.

It is important to note that in the *federal government benefits per federal dollar ROI* calculation, only federal government (not total) benefits are included. Given this, only federal components of the professional opportunity cost were subtracted from all federal government benefits (e.g., tax revenue and cost savings) realized as a result of Breakthrough Central Texas in this ROI calculation. The parts of the professional opportunity cost removed from these total federal government benefits included the federal income, Social Security, and Medicare taxes forgone due to Breakthrough AmeriCorps members forgoing earnings during their service year. This value was multiplied by the proportion of middle school students of all students served. The summation of these forgone federal taxes is called the *federal professional opportunity cost*.

Investment Opportunity Cost to Funders

The second opportunity cost used in this ROI analysis is an investment opportunity cost. It estimates the expected forgone return if all funds used to support Breakthrough Central Texas's Austin program during the 2020–2021 program year were invested in U.S. Treasury bonds instead. To calculate this, the analysis matched 2019 real interest rates provided by the Office of Management and Budget (2020) to each of the scenarios leveraged in this ROI analysis: short-term, medium-term, and long-term.¹³

¹³ The analysis used 2019 real interest rates for U.S. Treasury bonds because the program year analyzed began in 2020.

The rates of return for U.S. Treasury bonds provide a market-based estimate of return for low-risk investments.

The real interest rate for the 3-year maturity was used for the short-term scenario, the average between the 10-year and 20-year maturity rates was used as the rate for the medium-term scenario, and the 30-year maturity rate was used for the long-term scenario. These real interest rates were 1.3 percent, 1.45 percent, and 1.5 percent, respectively (Office of Management and Budget, 2020). Also, the number of time periods elapsed on these bonds was equal to the number of years the short-term, medium-term, and long-term scenarios assume Breakthrough AmeriCorps members' employment and earnings gains are sustained, 1 year, 15 years, and 30 years, respectively. These bonds compound biannually, according to the U.S. Department of the Treasury (2019). The forgone accrued interest was calculated for each of the three scenarios if the funding amount used to support Breakthrough Central Texas's Austin program was instead invested.

Note that for 1) the *federal government benefits per federal dollar* and 2) the *total benefits per federal dollar* ROI calculations, the investment opportunity cost subtracted from the benefits in these calculations is the forgone accrued interest from investing *only* the federal funds into these U.S. Treasury bonds. This is called the *federal investment opportunity cost*. This is because these ROI calculations only include federal government (not total) program costs. For the other ROI calculation estimated in this analysis, the investment opportunity cost subtracted from the benefits realized is the forgone accrued interest from investing *all* Breakthrough Central Texas program funds (both federal and non-federal) into these U.S. Treasury bonds. This is called the *total investment opportunity cost*. See Appendix B for details.

Program Costs

The costs for Breakthrough Central Texas's Austin program, used for this ROI analysis, include federal and required match funding and any other funding used to support program operations. The match and any additional funding can come from state/local governments and private entities. The program costs are specific to funding the activities and positions of Breakthrough AmeriCorps members whose outcomes are measured in this analysis, namely the middle school students only. This was estimated based on per-student costs for middle school students and applied only to the number of middle school students, since the ROI analysis only includes that group.

ROI Study Limitations

Study limitations include the following:

- While the researchers from the Hutson and Lamb (2020) study identified a control group that matched Breakthrough participants on measurable variables, the control and treatment groups may differ on unmeasured traits, such as motivation.
- This ROI analysis does not capture other benefits beyond academic achievement that are part of Breakthrough Central Texas's program model. These include improvement in students' socio-emotional skill development,

chronic absenteeism, disciplinary incidents, positive relationship-building, extracurricular involvement, and civic engagement. Related literature does not provide a method for monetizing impacts related to these additional outcomes.

- Data on costs and benefits are from the 2018–2019 school year, prior to any disruptions from the COVID-19 pandemic that began in 2020. The analysis does not attempt to model the effect of those disruptions on ROI due to lack of data. The ROI estimates are relevant to more normal conditions.

Program Benefits, Forgone Benefits (Opportunity Costs), Program Costs, and ROI Results

This section provides estimates of program benefits, forgone benefits (opportunity costs), and program costs, along with the ROI results.

Program Benefits

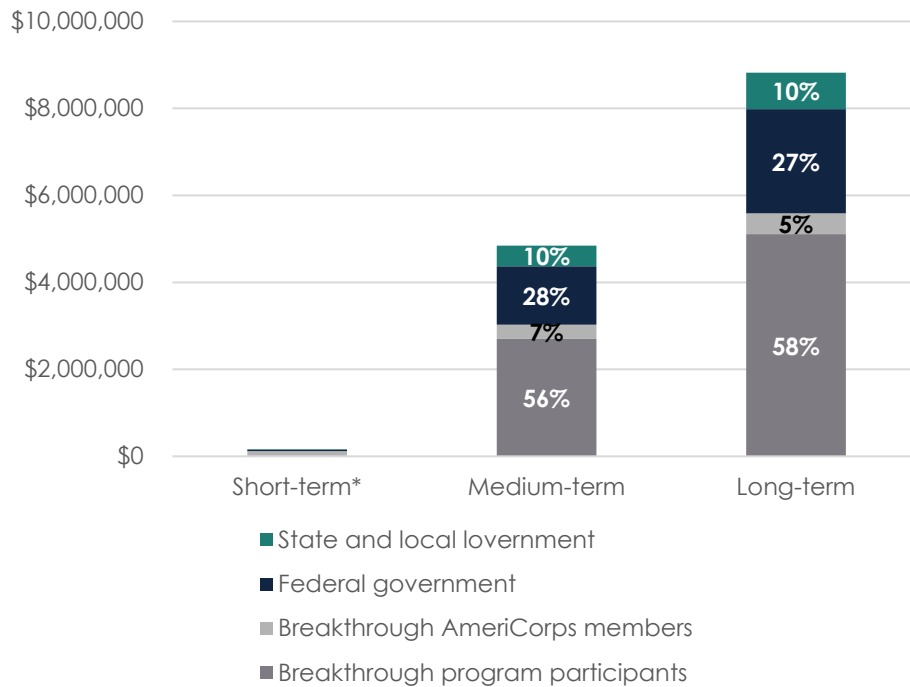
Table 4 shows the estimates of monetized benefits of Breakthrough Central Texas's Austin program by stakeholder group for each of the three scenarios. Figure 2 shows the estimates broken out into percentages.

Table 4. Program Benefits by Recipient

Recipient	Benefits by scenario (2021\$)		
	Short-term	Medium-term	Long-term
Breakthrough program participants	\$0	\$2,701,211	\$5,110,444
Breakthrough AmeriCorps members	\$121,642	\$326,930	\$478,781
Federal government	\$33,836	\$1,340,170	\$2,391,564
State and local government	\$9,464	\$474,307	\$839,883
Total	\$164,942	\$4,842,619	\$8,820,672

Note: Numbers may not sum due to rounding.

Figure 2. Program Benefits by Stakeholder Group



*Short-term percentages: Breakthrough program participants, 0% ; Breakthrough AmeriCorps members, 74%; federal government, 21%; state and local government, 6%.
Note: Numbers may not sum due to rounding.

Forgone Benefits (Opportunity Costs)

Table 5 shows the breakdown of the forgone benefits from the professional opportunity cost to Breakthrough AmeriCorps members and government in net present 2021 dollars. It lists the amount of post-tax earnings that members are forgoing—and the associated taxes forgone—to serve with Breakthrough Central Texas's Austin program. This is called the *total professional opportunity cost*. For the *federal government benefits per federal dollar ROI* calculation, only the forgone federal income, Social Security, and Medicare taxes were subtracted from the total federal benefits that are realized due to Breakthrough Central Texas's Austin program. The summation of these forgone federal taxes is called the *federal professional opportunity cost*.

Table 5. Forgone Benefits From Professional Opportunity Cost

Forgone category	Professional opportunity cost amount across all scenarios (2021\$)
Post-tax earnings	\$102,798
Federal income taxes	\$13,983
State income taxes	\$3,477
Social Security and Medicare taxes	\$9,498
Sales taxes	\$1,441
Total	\$131,198

Table 6 lists the forgone benefits from the investment opportunity cost incurred by scenario and for when:

- a) Total Breakthrough Central Texas program funds for the program year are invested in U.S. Treasury bonds
- b) Only federal Breakthrough Central Texas program funds (both program and education award funding) are invested in these bonds

Table 6 also lists the 2019 real interest rates and the number of years elapsed (with two payments a year) that were used as inputs to calculate the forgone accrued interest value for each scenario. The analysis used 2019 real interest rates for U.S. Treasury bonds because Breakthrough Central Texas's Austin program year analyzed began in 2019.

Table 6. Investment Opportunity Cost by Scenario and Funding Stream

Funding stream	Forgone accrued interest by scenario (2021\$)		
	Short-term (1.30% interest rate and 1 year elapsed)	Medium-term (1.45% interest rate and 15 years elapsed)	Long-term (1.50% interest rate and 30 years elapsed)
Total Breakthrough Austin program funding	\$9,343	\$173,358	\$405,245
Federal Breakthrough Austin program funding only	\$1,247	\$23,143	\$54,099

Program Costs

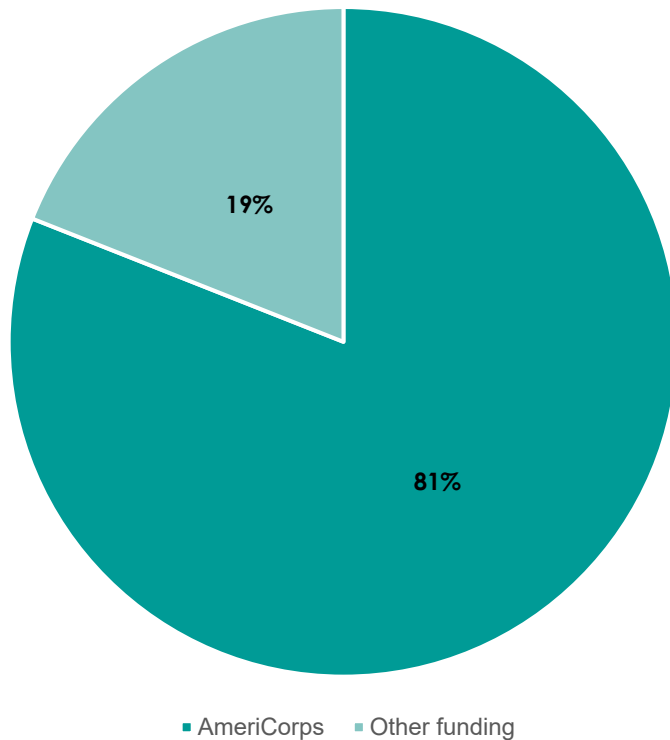
Table 7 shows the cost of Breakthrough Central Texas's Austin program for the 2019–2020 program year by funding source, and the percentage from each source is shown in Figure 3. As noted above, the program cost represents that used for Breakthrough Austin middle school students only. Total program cost amounted to \$810,388, 19 percent of which is funded by AmeriCorps and 81 percent of which is funded by other entities, such as state and local government and private funders. The federal funds include the AmeriCorps State and National grant and the education

award amounts granted to Breakthrough AmeriCorps members once they completed their service term. Funds provided by state/local governments and private funds represent the match funding and other funding received by Breakthrough Central Texas's Austin program to support program activities for the program year. This match and other funding provide Breakthrough Central Texas's Austin program with the resources to offer more services and support to students than would otherwise be available only under the AmeriCorps federal funds. That translates into increased aggregate benefits realized across stakeholder groups.

Table 7. Program Cost by Funding Source for Breakthrough Central Texas's Austin Program

Funder	Funding provided for the program year
AmeriCorps	\$151,845
Other funding (state/local government and private)	\$658,543
Total	\$810,388

Figure 3. Program Cost by Funding Source



ROI Results

This analysis developed three ROI estimates using the three scenarios (short-term, medium-term, and long-term). As noted above, the ROI calculations compare the net benefits of Breakthrough Central Texas's Austin program with the program cost to calculate the ROI.

Table 8 shows the program gross benefits, forgone benefits, net benefits, and cost of Breakthrough Central Texas's Austin program, and each of the components that are used to calculate the three ROIs.

Table 8. Program Benefits, Net Benefits, and Program Costs by ROI Scenario

Benefits and costs	ROI scenario (2021\$)		
	Short-term	Medium-term	Long-term
Total program gross benefits	\$164,942	\$4,842,619	\$8,820,672
Breakthrough Austin (participants)	\$0	\$2,701,211	\$5,110,444
Member benefits	\$121,642	\$326,930	\$478,781
Federal government benefits	\$33,836	\$1,340,170	\$2,391,564
State/local government/other funder benefits	\$9,464	\$474,307	\$839,883
Total forgone benefits (opportunity cost)	\$140,541	\$304,556	\$536,444
Forgone benefits to members (forgone earnings post-taxes)	\$102,798	\$102,798	\$102,798
Forgone tax revenue from members' earnings	\$28,400	\$28,400	\$28,400
Forgone tax revenue federal government	\$23,482	\$23,482	\$23,482
Forgone tax revenue state/local government	\$4,918	\$4,918	\$4,918
Forgone benefits from total investment (all funders)	\$9,343	\$173,358	\$405,245
Forgone benefits from federal government investment	\$1,247	\$23,143	\$54,099
Forgone benefits from state/local government investment	\$8,095	\$150,215	\$351,145
Total program net benefits (total program gross benefits – total forgone benefits)	\$24,401	\$4,538,063	\$8,284,228
Net benefits Breakthrough Austin (participants)	\$0	\$2,701,211	\$5,110,444
Net benefits members (member benefits – forgone benefits members)	\$18,844	\$224,132	\$375,983

Benefits and costs	ROI scenario (2021\$)		
	Short-term	Medium-term	Long-term
Net benefits federal government (federal government benefits – forgone tax revenue to federal government – forgone benefits from federal government investment)	\$9,107	\$1,293,545	\$2,313,983
Net benefits state/local government and other funders (state/local government benefits – forgone tax revenue to state/local government – forgone benefits from state/local government and other funder investment)	-\$3,549	\$319,174	\$483,820
Program cost	\$810,388	\$810,388	\$810,388
Federal government cost	\$151,845	\$151,845	\$151,845
Non-federal government cost	\$658,543	\$658,543	\$658,543
ROI for total benefits per federal dollar (Total program net benefits / federal government cost)	\$0.16	\$29.89	\$54.56
ROI for total benefits per funder dollar (Total program net benefits / program cost)	\$0.03	\$5.60	\$10.22
Federal government benefits per federal dollar (net benefits federal government / federal government cost)	\$0.06	\$8.52	\$15.24

Table 9 summarizes the ROI results for Breakthrough Central Texas's Austin program across the short-term, medium-term, and long-term scenarios. Three different ROI results are calculated for each scenario. Specifically, these ratios take the form of the sum of monetized benefits over the sum of applicable program costs. The ROIs expressed as cost–benefit ratios in this study can be interpreted as the amount of dollars returned for every \$1 of investment (or program cost).¹⁴ See Appendix B for the formulas used to calculate each ROI calculation.

¹⁴ ROIs can be expressed in percentages or as ratios, such as in this study. Although not shown as a ratio in the results, the ROIs in this study show the amount of return for every \$1 invested.

Table 9. ROI Results for Breakthrough Central Texas’s Austin Program

ROI calculation	ROI scenario		
	Short-term	Medium-term	Long-term
Total benefits per federal dollar	\$0.16	\$29.89	\$54.56
Total benefits per funder dollar	\$0.03	\$5.60	\$10.22
Federal government benefits per federal dollar	\$0.06	\$8.52	\$15.24

The program produces strong returns for the medium- and long-term scenarios for all ROI calculations. The magnitude and direction of the ROI results are driven by several factors:

- **Income gains by program participants due to higher educational attainment.** Breakthrough participants enjoy increased earnings during their working years attributable to their increased educational attainment.
- **Additional earnings by AmeriCorps members.** Serving in AmeriCorps leads to increased wages and reduced unemployment post-national service through skill acquisition, as well as increased educational attainment post-service.
- **Reduced lifetime spending on corrections, public assistance, and social insurance.** Because of the increase in secondary and postsecondary educational attainment for AmeriCorps members and program participants, federal and state governments spend less on these items.

In the short-term scenario—which only includes benefits for 1 year post-program—the ROI results indicate that there is a short-term loss to all funders under all three ROI calculations. An ROI that is below \$1 in the first year post-program is common in programs where there is an initial one-time investment made and benefits accrue in the following years. This is because it can require several years of benefits to recoup the initial investment and generate positive returns.

Government funding serves as a catalyst for private funding of evidence-based social services programs. For the ROI calculations of 1) *total benefits per federal dollar* and 2) *total benefits per funder dollar*, AmeriCorps’s requirement of match funding also contributed to the magnitude of outcomes. Federal government funding of Breakthrough Central Texas’s Austin program serves as a catalyst for other funding, specifically that from state and local governments. This additional funding—amounting to about \$59,204 for Breakthrough Central Texas’s Austin program for the most recent program year—allowed Breakthrough Central Texas’s Austin program to serve more parents and families than otherwise would have been served under the federal funding alone. Though it may not impact the ROI, because it is a per-unit metric, match funding leads to greater investment in Breakthrough Central Texas’s Austin program and thus to a greater impact as more individuals and families are served.

Recommendations for Further Research

Future ROI studies for national and community service programs, such as Breakthrough Central Texas's Austin program, can be strengthened in several ways.

Recommendation 1: Determine the persistence of short- and long-term impacts for program participants and AmeriCorps members. The persistence of impacts, such as earnings or employment, is often not measured in evaluations because it requires long-term tracking. Although a scenario-based approach that accounts for variations in the persistence of impacts can be used, as was completed in this ROI analysis, rigorous research on the long-term impact of programming will enable AmeriCorps to determine a single value for ROI calculations and avoid relying on the scenario-based approach. For example, Friedman et al. (2016) reported the unemployment status of AmeriCorps member alumni 6 months before service, 6 months after service, and during the summer of 2016. The authors indicate that data for the latter timepoint was collected anywhere from 3 to 11 years after service completion, depending on the AmeriCorps member alumni cohort (i.e., 2005, 2010, or 2013). The varying data collection periods for the cohorts makes it difficult to measure the duration of benefits. Thus, instead of collecting outcome measures at a time that varies by AmeriCorps member or program participant, studies should track outcomes of interest at the same intervals, multiple times after program or service completion, to provide greater insight into the duration and consistency of benefits.

Recommendation 2: Document outcomes using third-party data sources. Using third-party data, along with or in place of self-reported data, can also improve the accuracy of program outcome measurements. While self-reported data are easier to obtain—especially via the use of survey instruments—they have several disadvantages. Some answers may be exaggerated, respondents may not answer honestly, and response biases could affect results. AmeriCorps programs should—where possible—leverage data from third-party sources either to provide data for their program evaluation or to corroborate findings from self-reported data. For example, if employment and earnings outcomes are of interest, unemployment insurance data—which are submitted by employers—could be used to verify members' wages or employment status post-service. Additionally, if degree completion data are of interest, such as in the case of this ROI analysis, data from the National Student Clearinghouse (NSC) could be used to verify what portion of Breakthrough AmeriCorps members pursued higher education and which degrees were completed post-program with the help of the education award. Were degree or employment outcomes data available from third-party data sources (like NSC), those data may make more precise ROI estimates possible.

Recommendation 3: Quantify ripple effects. Earnings impacts on program participants and AmeriCorps members likely have positive benefits for those individuals' families and surrounding communities. Rigorous research on those potential ripple effects would enable AmeriCorps to capture a broader array of benefits of this and other programs, which would be expected to result in an increased ROI. Specifically, the longitudinal impacts on program participants could be collected alongside the ripple effects their outcomes have on their families and communities to determine how long these indirect

impacts are sustained after program participation or completion. For instance, studying how program participation impacts parents' employment status, educational attainment, substance or alcohol use, as well as mental and physical health would result in a more comprehensive ROI estimate.

Conclusion

The program produces strong returns for the medium- and long-term scenarios as indicated by the results of all three ROI calculations for these two scenarios. In the short-term scenario—which only includes benefits for 1 year post-program—the ROI results indicate that there is a short-term loss on funding invested in the program.

Appendix A: Program Benefits, Forgone Benefits, and Program Costs Included in Return on Investment Calculations

In Table 10, the three columns on the right indicate by an “X” if the program benefits, forgone benefits (opportunity cost), or program cost is included in the numerator or denominator of a return on investment (ROI) calculation.

Table 10. Benefits and Costs Included in the Breakthrough Central Texas ROI Calculation

Benefit or cost			Total benefits per federal dollar	Total benefits per funder dollar	Federal government benefits per federal dollar
Benefits	Stakeholder group	Data sources	X indicates inclusion in the ROI numerator		
Increased lifetime earnings of program participants due to their increased educational attainment	Breakthrough participants	<ul style="list-style-type: none"> Breakthrough Central Texas Hutson and Lamb (2020) Trostel (2015) U.S. Bureau of Labor Statistics (2019-a) 	X	X	
Increased lifetime income tax revenue due to increased educational attainment of program participants	Federal government	<ul style="list-style-type: none"> Breakthrough Central Texas Hutson and Lamb (2020) Trostel (2015) U.S. Bureau of Labor Statistics (2019-a) 	X	X	X

Benefit or cost			Total benefits per federal dollar	Total benefits per funder dollar	Federal government benefits per federal dollar
Benefits	Stakeholder group	Data sources	X indicates inclusion in the ROI numerator		
Increased lifetime Social Security tax revenue due to increased educational attainment of program participants	Federal government	<ul style="list-style-type: none"> • Breakthrough Central Texas • Hutson and Lamb (2020) • Trostel (2015) • U.S. Bureau of Labor Statistics (2019-a) 	X	X	X
Increased lifetime sales tax revenue due to increased educational attainment of program participants	State and local governments	<ul style="list-style-type: none"> • Breakthrough Central Texas • Hutson and Lamb (2020) • Trostel (2015) • U.S. Bureau of Labor Statistics (2019-a) 	X	X	
Savings in lifetime public assistance, corrections, and social insurance costs due to increased educational attainment of program participants	Federal government	<ul style="list-style-type: none"> • Breakthrough Central Texas • Hutson and Lamb (2020) • Trostel (2015) • U.S. Bureau of Labor Statistics (2019-a) 	X	X	X

Benefit or cost			Total benefits per federal dollar	Total benefits per funder dollar	Federal government benefits per federal dollar
Benefits	Stakeholder group	Data sources	X indicates inclusion in the ROI numerator		
Increased earnings of national service members due to increased employment and education of AmeriCorps members	AmeriCorps members	<ul style="list-style-type: none"> Breakthrough Central Texas Friedman et al. (2016) U.S. Census Bureau (2019-a) U.S. Bureau of Labor Statistics (2019-a) U.S. Bureau of Labor Statistics (2019-b) 	X	X	
Increased income tax revenue due to increased earnings of AmeriCorps members	Federal and state governments	<ul style="list-style-type: none"> Friedman et al. (2016) U.S. Census Bureau (2019-a) U.S. Bureau of Labor Statistics (2019-a) Tax rate data on Bankrate.com and Loughhead (Tax Foundation, 2020) 	X	X	X

Benefit or cost			Total benefits per federal dollar	Total benefits per funder dollar	Federal government benefits per federal dollar
Benefits	Stakeholder group	Data sources	X indicates inclusion in the ROI numerator		
Increased Social Security and Medicare tax revenue due to increased earnings of AmeriCorps members	Federal government	<ul style="list-style-type: none"> Friedman et al. (2016) U.S. Census Bureau (2019-a) U.S. Bureau of Labor Statistics (2019-a) Social Security Administration (2020) 	X	X	X
Increased sales tax revenue due to increased earnings of AmeriCorps members	State and local governments	<ul style="list-style-type: none"> Friedman et al. (2016) U.S. Census Bureau (2019-a) U.S. Bureau of Labor Statistics (2019-a) U.S. Bureau of Labor Statistics (2021) Loughead (Tax Foundation, 2020) 	X	X	
AmeriCorps member living allowances and education awards	AmeriCorps members	<ul style="list-style-type: none"> Breakthrough Central Texas 	X	X	

Benefit or cost			Total benefits per federal dollar	Total benefits per funder dollar	Federal government benefits per federal dollar
Benefits	Stakeholder group	Data sources	X indicates inclusion in the ROI numerator		
Reduced spending on lifetime public assistance, corrections, and social insurance due to increased educational attainment of AmeriCorps members	Federal, state, and local governments	<ul style="list-style-type: none"> • Trostel (2015) • Zeidenberg et al. (2016) • U.S. Census Bureau (2019-a) 	X	X	X
Forgone benefits (opportunity costs)	Payer	Data Source	X indicates inclusion in the ROI denominator		
Opportunity costs of forgone market wages for AmeriCorps members	AmeriCorps members	<ul style="list-style-type: none"> • Breakthrough Central Texas • U.S. Census Bureau (2019-a) • U.S. Bureau of Labor Statistics (2019-b) 	X	X	X

Benefit or cost			Total benefits per federal dollar	Total benefits per funder dollar	Federal government benefits per federal dollar
Benefits	Stakeholder group	Data sources	X indicates inclusion in the ROI numerator		
Opportunity costs of federal taxes on forgone market wages for AmeriCorps members (e.g., federal income and Social Security taxes)	Federal government	<ul style="list-style-type: none"> • Breakthrough Central Texas • U.S. Census Bureau (2019-a) • U.S. Bureau of Labor Statistics (2019-a) • U.S. Bureau of Labor Statistics (2019-b) • Tax rate data on Bankrate.com and Loughhead (Tax Foundation, 2020) • Social Security Administration (2020) 	X	X	X

Benefit or cost			Total benefits per federal dollar	Total benefits per funder dollar	Federal government benefits per federal dollar
Benefits	Stakeholder group	Data sources	X indicates inclusion in the ROI numerator		
Opportunity costs of state and local taxes on forgone market wages for AmeriCorps members (e.g., state income and state/local sales taxes)	State and local governments	<ul style="list-style-type: none"> • Breakthrough Central Texas • U.S. Census Bureau (2019-a) • U.S. Bureau of Labor Statistics (2019-a) • U.S. Bureau of Labor Statistics (2019-b) • U.S. Bureau of Labor Statistics (2021) • Loughead (Tax Foundation, 2020) 	X	X	X
Opportunity costs of federal funders	Federal government	<ul style="list-style-type: none"> • AmeriCorps • U.S. Department of the Treasury (2019) 	X	X	X
Opportunity costs of program funders	Non-government funders	<ul style="list-style-type: none"> • Breakthrough Central Texas • U.S. Department of the Treasury (2019) 		X	

Benefit or cost			Total benefits per federal dollar	Total benefits per funder dollar	Federal government benefits per federal dollar
Benefits	Stakeholder group	Data sources	X indicates inclusion in the ROI numerator		
AmeriCorps grant costs (excluding living allowances and education awards provided to AmeriCorps members)	Federal government (AmeriCorps)	<ul style="list-style-type: none"> AmeriCorps 	X	X	X
AmeriCorps member living allowances and education awards	Federal government (AmeriCorps)	<ul style="list-style-type: none"> AmeriCorps 	X	X	X
Breakthrough Central Texas costs	Breakthrough Central Texas	<ul style="list-style-type: none"> Breakthrough Central Texas 		X	
Other federal government funding (not provided by AmeriCorps)	Federal government	<ul style="list-style-type: none"> Breakthrough Central Texas 		X	X
State and local government funding	State and local government	<ul style="list-style-type: none"> Breakthrough Central Texas 		X	
Other non-government costs	Non-government funders	<ul style="list-style-type: none"> Breakthrough Central Texas 		X	

Appendix B: Additional Information on the Methodology

This appendix provides additional details on the methodology used for this study, as a supplement to the methodology section in the main report. It describes the steps used to calculate the return on investment (ROI), the results of interim calculations that contribute to the ROI calculations, and assumptions that underlie the analysis.

Methodology Overview

Calculating the ROI for the Breakthrough Central Texas program included the following steps:

- Measuring and monetizing program benefits to Breakthrough program participants, Breakthrough AmeriCorps members, and the different levels of government
- Estimating forgone benefits (opportunity costs)
- Assessing program costs
- Calculating the ROI

This ROI analysis included only those benefits that could be reasonably monetized given the available data and that likely would not have occurred without Breakthrough Central Texas's Austin program.

Although Breakthrough AmeriCorps members experience positive benefits from the Breakthrough Central Texas program in terms of increased employment and earnings (described below), available data do not establish how long these specific impacts are sustained over time. To address a range of possible durations for those benefits, three scenarios were developed for this ROI study:

- **Short-term.** This scenario assumes short-term earnings impacts. The assumption is that earnings impacts are limited to a single year after program exit. This scenario also assumes no lifetime benefits are realized.
- **Medium-term.** This scenario assumes a longer duration of earnings impacts. The assumption is that earnings impacts last 15 years. A 3 percent discount rate is applied each year to represent net present value in 2021 dollars.¹⁵ This scenario also assumes only half of the net present value of lifetime benefits is realized.
- **Long-term.** This scenario assumes sustained earnings impacts throughout Breakthrough AmeriCorps members' working years. The assumption is that earnings impacts last 30 years. A 3 percent discount rate is applied each year to represent net present value in 2021 dollars. This scenario also assumes the entire net present value of lifetime benefits is realized.

¹⁵ The Office of Management and Budget (1992) defines a discount rate as, "The interest rate used in calculating the present value of expected yearly benefits and costs" (p. 18). Regarding the 3 percent discount rate, see Office of Management and Budget (2003).

There are some differences between the three scenarios. One is the length of time that increased employment—and earnings associated with that employment—are sustained. The other is what portion of lifetime benefits, when applicable, are realized.¹⁶ For each ROI calculation, three estimates using the three scenarios were developed, which is shown in greater detail in the Calculating ROI section.

Measuring Program Benefits

The first step in calculating the ROI for Breakthrough Central Texas's Austin program is to measure and monetize the program benefits. Breakthrough program participants, Breakthrough AmeriCorps members, and various levels of government benefit from Breakthrough Central Texas's Austin program. These benefits were identified through an extensive literature review and data collection process. The methods used to measure benefits for each of these stakeholder groups are described below.

Benefits to the Breakthrough Program Participants

Two evaluations, Malerba and Caplovitz (2012) and Hutson and Lamb (2020), measured the impact of Breakthrough Central Texas on middle school students. These evaluations both used propensity score matching. The objective of these two studies was to determine the impact of Breakthrough Central Texas on high school and college graduation rates. Malerba and Caplovitz evaluated 1,086 students to estimate the increased likelihood of high school graduation, and Hutson and Lamb evaluated 290 students to estimate the likelihood of college graduation.

Malerba and Caplovitz (2012) found a 10 percent increase in likelihood of high school graduation. Applying these findings to Breakthrough Central Texas's 281 middle school students in the 2018–2019 academic year, the analysis estimated that 28 (281 x 10%) middle schoolers who are enrolled in Breakthrough Central Texas's Austin program will no longer drop out of high school. The estimated 28 middle school students were then demographically weighted based on Breakthrough program participant demographics, which can be seen in Table 11. To estimate the additional annual earnings attributable to increased high school graduation levels due to Breakthrough Central Texas, the estimated numbers of additional graduates by demographic category are multiplied by the estimated additional annual earnings.

¹⁶ These three scenarios consider varying durations of how long increased employment and earnings benefits last for Breakthrough AmeriCorps members. They also consider varying durations for lifetime benefits that stem from the Breakthrough program. For example, lifetime benefits in terms of decreased public assistance, social insurance, and corrections costs result from Breakthrough AmeriCorps members' higher educational attainment post-service. The analysis estimates lifetime benefits differently in the three scenarios. Specifically, the net present value of the entire lifetime benefit is realized for the long-term scenario, half of the net present value of the lifetime benefit is realized for the medium-term scenario, and no lifetime benefit amount is realized for the short-term scenario.

Table 11. Additional High School Graduates and Expected Median Annual Additional Earnings (2021\$)

Breakthrough middle school participants	Additional high school graduates		Annual additional earnings		Total annual additional earnings	
	Male	Female	Male	Female	Male	Female
White	0	0	\$13,100	\$10,476	\$1,353	\$1,082
Black	2	2	\$6,435	\$6,635	\$9,971	\$15,765
Hispanic	12	12	\$8,827	\$7,748	\$98,492	\$90,447
Asian	0	0	\$13,173	\$17,000	\$4,959	\$3,681
Multiracial	0	0	\$10,222	\$9,728	\$2,112	\$1,005
Total	14	14	N/A	N/A	\$225,981	

Note: Numbers may not sum due to rounding.

Sources: Malerba and Caplovitz (2012) and U.S. Census Bureau (2019-c)

Hutson and Lamb (2020) found a seven percentage point increase in bachelor degree graduation rate for Breakthrough participants as compared to a matched group of non-participants. All Breakthrough students are first-generation college students, but the control group consists of both first-generation and non-first generation college students. DeAngelo et al. (2011) found that first-generation college students had a 50 percent graduation rate, while the overall college graduation rate was 61 percent. Because the 2020 evaluation did not control for first-generation college status, the analysis adjusted the finding by 11 percentage points. The expected differential between first-generation Breakthrough participants and non-participants is 18 percent.

Applying these findings to Breakthrough Central Texas's 281 middle school students in Austin in the 2018–2019 academic year, this analysis estimated that 51 (281 x 18%) middle school students in the Breakthrough Central Texas program are less likely to drop out of college.

Table 12. Additional Bachelor's Degree Graduates and Expected Median Annual Additional Earnings (2021\$)

Breakthrough middle school participants	Additional bachelor's degree graduates		Annual additional earnings		Total annual additional earnings	
	Male	Female	Male	Female	Male	Female
White	0	0	\$13,100	\$10,476	\$2,962	\$3,291
Black	3	4	\$6,435	\$6,635	\$15,780	\$39,690
Hispanic	20	21	\$8,827	\$7,748	\$170,556	\$199,534
Asian	1	1	\$13,173	\$17,000	\$37,623	\$6,807
Multiracial	0	0	\$10,222	\$9,728	\$1,778	\$1,992
Total	24	27	N/A	N/A	\$480,013	

Note: Numbers may not sum due to rounding.

Sources: Hutson and Lamb (2020), DeAngelo et al. (2011), and U.S. Census Bureau (2019-c)

Table 13 shows the gross earnings of the Breakthrough middle school participants for the three scenarios, discounted at a 3 percent rate.¹⁷ Along with the earnings, Table 12 also shows the lifetime reduction in public assistance payments received due to Breakthrough middle school participants' reduced likelihood of dropping out of high school and bachelor's degree programs (Levin et al., 2007; Trostel et al., 2015). In other words, it shows the reduced spending on public assistance, social insurance, and criminal justice costs for Breakthrough Austin participants due to their increased educational attainment. These are also discounted at 3 percent.

Table 13. Additional Earnings for Breakthrough Participants and Resulting Public Benefits by Scenario (2021\$)

Scenario	Gross additional earnings of participants	Reduced government spending	Payroll tax payments*	Estimated additional sales tax revenue
Short-term	N/A	N/A	N/A	N/A
Medium-term	\$3,495,713	\$894,018	\$686,908	\$107,595
Long-term	\$6,606,667	\$1,545,970	\$1,298,210	\$198,013

*Summed federal and state income, Medicare, and Social Security taxes based on gross earnings of Breakthrough participants

¹⁷ The guidance to use a 3 percent discount rate can be seen in Office of Management and Budget (2003).

This analysis also calculated federal income, Medicare, and Social Security taxes on the additional income.¹⁸ Texas does not have a state income tax (Loughead, Tax Foundation, 2020). The summation of these taxes for each of the three scenarios is shown in Table 12. Subtracting those taxes from the gross additional income resulting from increased educational attainment for Breakthrough participants yields post-tax income. From this, sales tax revenue to the state of Texas (and local governments in Texas) is estimated, assuming Breakthrough participants stay in Texas after graduation. These estimates are presented across the three scenarios. Note that because the participants are in middle school, they would not begin to earn income until after high school graduation (4 and 5 years later for 8th and 7th graders) and college graduation (8 and 9 years later for 8th and 7th graders). No additional earnings and benefits are estimated for the short-term scenario. For the medium term scenario, 10 and 11 years of high school–related attainment benefits are calculated for 7th and 8th graders, respectively. Additionally, 6 and 7 years of college–related attainment benefits are calculated for 7th and 8th graders. For the long-term scenario, 7th graders have 25 years of high school graduation–related benefits and 21 years of college graduation–related benefits, while 8th graders have 26 years of high school graduation–related benefits and 22 years of college graduation–related benefits.

Benefits to Breakthrough AmeriCorps Members

The Breakthrough AmeriCorps members who provide services as part of the Breakthrough program experience benefits due to their national service. This analysis estimated the following benefits:

- Living allowance and education award
- Increased earnings due to reduced unemployment
- Increased lifetime earnings due to increased postsecondary education derived from the use of education awards

Living Allowance and Education Award

Living allowances are given to AmeriCorps members during their 1-year service term to pay for various living expenses—such as housing and groceries—and they sometimes include members' workers' compensation and health insurance when applicable. Regarding education awards, according to Friedman et al. (2016), a significant portion (i.e., 46 percent) of AmeriCorps State and National member alumni use them to pay for additional postsecondary education at colleges, graduate schools, and technical/vocational schools, while others (i.e., 33 percent) use them to pay off outstanding student loans. The remaining 21 percent do not use their education awards.

¹⁸ For the additional high school and college graduates, the analysis assumes a federal marginal income tax rate (12 percent), a Medicare tax rate (1.45 percent), and a Social Security tax rate (6.20 percent). The assumed Texas sales tax, state and local, is 8.19 percent.

Both the living allowances and education awards (considered one-time benefits that are not discounted or spread over time) are taxable and represent member benefits. However, only the portion of education awards used by members to pay off existing student loans is considered a direct member benefit. The portion that is utilized to pursue further postsecondary education is only used in calculating members' additional lifetime earnings due to the increased educational attainment they experience post-service from using the education award. This is done to avoid double counting. This analysis included the post-tax values of the living allowance and the portion of the education award used to repay student loans as Breakthrough AmeriCorps member benefits, which are listed in Table 14. The portion of the education award used to fund additional postsecondary education is discussed in the following section.

Table 14. Breakthrough AmeriCorps Member Benefits From the Living Allowance and Education Award

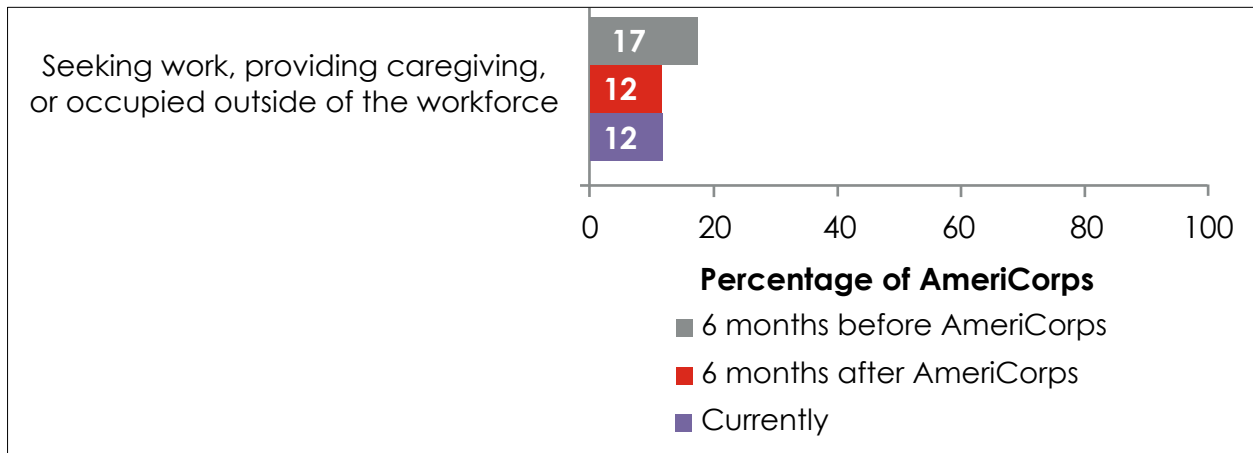
Benefit	Post-tax value (2021\$)	Notes
Living allowance	\$96,805	Post-tax living allowances members receive during service
Education award used to pay off student loans	\$16,081	Post-tax education award amount used to pay off outstanding student loans
Total	\$112,886	

Sources: Breakthrough Central Texas and Friedman et al. (2016)

Increased Earnings Due to Reduced Unemployment

According to Friedman et al. (2016), the percentage of AmeriCorps members unemployed was 5 percentage points lower 6 months after serving in AmeriCorps compared to 6 months before serving. The study did not provide actual employment rates for AmeriCorps members pre- and post-service, but instead provided the unemployment rates shown in Figure 4 (17 percent vs. 12 percent) in which the change between them represents a 5-percentage-point decrease.

Figure 4. Unemployment Status Results From Friedman et al. (2016)¹⁹



Source: Friedman et al. (2016)

A direct member benefit from being employed post-service is additional income earned. To monetize this 5-percentage-point decrease in unemployment, ICF requested that Breakthrough Austin provide the gender, age, pre-service educational attainment, and race/ethnicity distribution of AmeriCorps members who served with Breakthrough Central Texas's Austin program for the most recent program year. Based on those demographics, the analysis used annual average earnings data from the Current Population Survey's Annual Social and Economic (ASEC) Supplement for March 2019 to estimate Breakthrough AmeriCorps members' additional earnings due to the reduced unemployment (U.S. Census Bureau, 2019-b).

Specifically, the analysis used ASEC data to calculate the per-person pre-tax average annual earnings for 18- to 34-year-olds weighted by the demographic distribution of Breakthrough AmeriCorps members who served during the 2019–2020 program year. This value expressed in 2021 dollars was \$26,392 as shown in Table 15. The analysis then multiplied the 5-percentage-point decrease in unemployment from Friedman et al. (2016) by the number of Breakthrough AmeriCorps member full-time equivalents (FTEs) who served during the most recent program year (i.e., 9). This estimated the number of *additional* Breakthrough AmeriCorps member FTEs employed due to national service (i.e., 0.5). To estimate the additional pre-tax earnings that stemmed from the reduced unemployment, the \$26,392 annual earnings amount was multiplied by the additional number of Breakthrough AmeriCorps members employed post-service. This represents the additional income earned by Breakthrough AmeriCorps members due to serving with Breakthrough Central Texas.

¹⁹ "Currently" refers to the summer 2016 survey. Respondents were from the 2005, 2010, and 2013 AmeriCorps cohorts, so respondents varied in how much time had elapsed since their AmeriCorps service.

Table 15. Additional Pre-Tax Earnings for Breakthrough AmeriCorps Members From Reduced Unemployment Based on Breakthrough AmeriCorps Member Demographics

Metric	Value (2021\$)*
Average per-person pre-tax annual earnings of employed 18- to 34-year-olds weighted by Breakthrough AmeriCorps member demographics (e.g., gender, race/ethnicity, and pre-service education level)	\$26,392
Reduction in AmeriCorps members' unemployment	5%
Total expected increase in earnings, per member	\$1,316
Breakthrough AmeriCorps member FTEs	9
Cumulative additional pre-tax earnings	\$12,286
Cumulative additional post-tax earnings	\$8,756

*This value is undiscounted; thus, the values do not sum in the table.

Source: Breakthrough Central Texas (2022), Friedman et al. (2016), and U.S. Census Bureau (2019-b)

To avoid double counting, the additional *post-tax* earnings is used to calculate the direct benefit to Breakthrough AmeriCorps members, rather than the additional *pre-tax* earnings. The post-tax annual earnings for the additional Breakthrough AmeriCorps member FTEs employed in Table 16 excludes payroll taxes (e.g., federal and state income, Social Security, and Medicare). The payroll tax rates used are described in more detail in the Benefits to Government section.

Based on these calculations, the cumulative additional post-tax earnings for Breakthrough AmeriCorps members for the three different scenarios—discounted in 2021 dollars using data from the Office of Management and Budget (2003)—are shown in Table 16. These monetary amounts represent the additional post-tax earnings realized due to the employment gain that is solely attributed to the Breakthrough Central Texas program.

Table 16. Cumulative Additional Post-Tax Earnings Derived From Reduced Unemployment Due to Serving With the Breakthrough Program by Scenario

Scenario	Cumulative additional post-tax earnings due to serving with the Breakthrough program (2021\$)
Short-term	\$8,756
Medium-term	\$86,829
Long-term	\$111,464

Sources: Breakthrough Central Texas, Friedman et al. (2016), U.S. Census Bureau (2019-b), and Office of Management and Budget (2003)

Increased Lifetime Earnings Due to Increased Postsecondary Education Derived From the Use of Education Awards

The AmeriCorps education award pays for some portion of members' increased postsecondary educational attainment, and the future earnings derived from that educational attainment are treated as a direct benefit to Breakthrough AmeriCorps members. To calculate the portion of members' increased educational attainment that is attributable to Breakthrough Central Texas's Austin program, this analysis used cost data from the National Center for Education Statistics (NCES). Table 17 details the average total cost for each degree type and the portion of the cost that the post-tax education award amount (i.e., \$5,234) represents (\$6,155 before taxes²⁰). The analysis used these percentages to estimate the lifetime benefits of postsecondary educational attainment that can be attributed to the education award. For instance, according to NCES (2020), the average annual cost of a public, in-state, 4-year academic institution during the 2019 to 2020 academic year was \$24,869. This amounts to more than \$100,000 for 4 years if expressed in 2019 dollars. The \$5,234 post-tax education award only represents 4.8 percent of the cost of that degree, so the Breakthrough Central Texas program could only be credited with 5 percent of the completion of Breakthrough AmeriCorps members' bachelor's degrees post-service.

Additional earnings derived from Breakthrough AmeriCorps members' *reduced unemployment* were calculated annually and then discounted based on the short-term, medium-term, and long-term scenarios in net present 2019 dollars.

For additional earnings derived from Breakthrough AmeriCorps members' *increased postsecondary educational attainment*—due to using education awards—Trostel (2015) did not provide data on how earnings accrue over time. Therefore, this analysis treated the increases in earnings as lifetime values expressed in 2019 dollars. The analysis assumed 100 percent of those lifetime earnings accrued by year 30 (i.e., in the long-term scenario), 50 percent accrued by year 15 (i.e., in the medium-term scenario), and nothing accrued 1 year post-program (i.e., in the short-term scenario).

²⁰ This analysis used the 2020 to 2021 AmeriCorps education award amount (\$6,345) but discounted it to net present 2020 dollars using the Consumer Price Index. For more information about this education award, please see <https://americorps.gov/members-volunteers/segal-ameri-corps-education-award/find-out-more>.

Table 17. Average Total Cost of Education and Portion Attributable to Education Award by Degree Type

Degree type ²¹	Average cost (2019\$)*	Percentage of degree total cost covered by post-tax education award
Associate degree	\$30,824	15.8%
Bachelor's degree	\$101,948	4.8%
Graduate degree	\$24,342	20.0%

*Costs were provided for the 2019 to 2020 academic year by NCES (2020) for associate degree and bachelor's degree types. Costs were provided for the 2018 to 2019 academic year by NCES (2019) for graduate degree type.

Sources: AmeriCorps (n.d.), U.S. Bureau of Labor Statistics (2019-a), NCES (2019), and NCES (2020)

To determine the future lifetime earnings realized due to the use of the education award post-service (and, later, the associated lifetime taxes, which are described in the Benefits to Government section), the analysis first determined the number of additional postsecondary degrees estimated to be completed by degree type. The 22 Breakthrough AmeriCorps member FTEs who served during the 2019–2020 program year were distributed by the education award use findings listed in Friedman et al. (2016) across the degree types. Specifically, Friedman et al. (2016) reported 46 percent of AmeriCorps State and National member alumni used their education award to pursue postsecondary degrees after program completion. This makes the number of Breakthrough AmeriCorps member FTEs expected to use the education award to pursue additional postsecondary education roughly equal to 10. Specifically, Friedman et al. (2016) indicated that the 46 percent comprises 2 percent using the education award to attend a technical or vocational training program, 21 percent using it to obtain a bachelor's degree, and 23 percent using it for graduate school.²² This results in the number of Breakthrough AmeriCorps members estimated to *pursue*—due to using the education award—an associate degree, a bachelor's degree, or a graduate degree post-service to be roughly 1, 8, and 9, respectively. These values are shown in Table 18.

²¹ Costs for an associate degree include tuition, required fees, books, and supplies for a public, in-state, 2-year program; costs for a bachelor's degree include tuition, required fees, books, supplies, and on-campus housing for a public, in-state, 4-year program; costs for a graduate degree include tuition and required fees for a public, in-state, 2-year graduate program.

²² This analysis considers the use of the education award to attend a technical or vocational training program from Friedman et al. (2016) to be synonymous with using it to pursue an associate degree.

Table 18. Estimates of the Number of Postsecondary Degrees Pursued Using the Education Award by Degree Type

Degree type	Total Breakthrough Austin AmeriCorps member FTE count	Percentage estimated to pursue postsecondary education according to Friedman et al. (2016)	Number of degrees pursued using the education award
Associate degree	9	2%	0.1
Bachelor's degree	9	21%	2.0
Graduate degree	9	23%	2.1
All degrees	—	46%	4.2

Note: Numbers may not sum due to rounding.

Sources: AmeriCorps (n.d.), U.S. Bureau of Labor Statistics (2019-a), Breakthrough Central Texas, Friedman et al. (2016), NCES (2020), and NCES (2019)

Next, the difference in the additional lifetime pre-tax earnings from one degree type to the subsequent degree type was estimated using data provided by Trostel (2015), which is shown in the fifth column of Table 19 and expressed in 2019 dollars.²³ For instance, using Trostel (2015) data, the lifetime earnings in 2019 dollars of someone with an associate degree is about \$875,000, while that of someone with a bachelor's degree is almost \$1.3 million. The difference between these two metrics (roughly \$417,000 as show in Table 19) represents the additional lifetime earnings realized as a result of gaining a bachelor's degree if an associate degree was already completed. This process was completed for all postsecondary degree types to conservatively estimate the additional lifetime earnings realized by Breakthrough AmeriCorps members due to an increase in postsecondary educational attainment. Trostel (2015) also included data on lifetime taxes paid, which was converted to 2019 dollars and then used to estimate the post-tax lifetime earnings that would be realized per additional postsecondary degree received. Specifically, the lifetime taxes paid amounts were subtracted from the pre-tax additional lifetime earnings amounts to estimate the additional post-tax lifetime earnings, a direct benefit to Breakthrough AmeriCorps members.

²³ For an associate degree, comparisons were made between metrics for a high school diploma and those for an associate degree. For a bachelor's degree, comparisons made were between metrics for an associate degree and those of a bachelor's degree. For a graduate degree, comparisons made were between metrics for a bachelor's degree and those of a master's degree.

Table 19. Additional Earnings From AmeriCorps Members' Use of the Education Award

Degree type	Number of degrees pursued using the education award	Percentage of degree total cost covered by post-tax education award	Number of degrees obtained using the education award	Additional pre-tax lifetime earnings per degree type	Additional lifetime taxes paid per degree type	Additional post-tax lifetime earnings per degree type	Total post-tax lifetime earnings using the education award
Associate degree	0.1	16.1%	0.0	\$170,286	\$83,656	\$86,630	\$5,010
Bachelor's degree	2.0	4.9%	0.1	\$526,201	\$242,385	\$283,816	\$49,382
Graduate degree	2.1	20.4%	0.4	\$467,083	\$176,604	\$290,479	\$200,038
Total	4.2	—	0.5	—	—	—	\$254,430

Note: Numbers may not sum due to rounding.

Sources: AmeriCorps (n.d.), U.S. Bureau of Labor Statistics (2019-a), Breakthrough Central Texas, Friedman et al. (2016), NCES (2020), NCES (2019), and Trostel (2015)

To isolate the increase in additional lifetime earnings specific to members using the education award, the number of Breakthrough AmeriCorps members who used the education award for this purpose by degree type was reduced by the percentage of the degree cost that can be covered by the \$5,234 post-tax education award received post-service, displayed in the third column of Table 19. As a result, the analysis estimated that the use of the education award among Breakthrough AmeriCorps members produced roughly 0.1 additional associate degree, 0.1 additional bachelor's degree, and 0.5 additional graduate degree post-service. Then, the number of additional degrees *obtained* was applied to the 2019 additional post-tax lifetime earnings by degree type. This calculates the additional lifetime post-tax earnings realized by Breakthrough AmeriCorps members from their increase in post-secondary educational attainment that is credited to the use of the education award post-service. The total additional lifetime post-tax earnings amount was roughly \$254,000 across Breakthrough AmeriCorps members. Of note, these lifetime earnings are *in addition to* the earnings derived from Breakthrough AmeriCorps members' gains in employment as delineated in the previous section. To reiterate, the earnings from Breakthrough AmeriCorps members' reduced unemployment differs depending on the scenario (i.e., short-term, medium-term, and long-term) since it is uncertain how long these earnings will persist. For the post-tax lifetime earnings—and all lifetime benefits in this ROI analysis—the entire amount is realized in the long-term, half of it is realized in the medium-term, and no amount is realized in the short-term.

Benefits to Government

State and Local Government

State and local governments benefit from:

- Additional state income tax revenue from Breakthrough AmeriCorps members' increased earnings due to reduced unemployment
- Additional lifetime state and local taxes due to Breakthrough AmeriCorps members' increased postsecondary educational attainment²⁴
- Additional lifetime state and local taxes due to Breakthrough program participants' increased educational attainment²⁵
- Additional state and local taxes from the living allowance and education award received by these members
- Additional state and local sales tax revenue from Breakthrough AmeriCorps members' increased consumption due to reduced unemployment
- Reduced lifetime spending on public assistance, social insurance, and corrections²⁶ due to Breakthrough AmeriCorps members' increased postsecondary educational attainment

Additional tax revenue derived from Breakthrough AmeriCorps members' *reduced unemployment, living allowances, and education awards* was calculated using tax rates specific to each per-person monetary amount.

For additional tax revenue derived from Breakthrough AmeriCorps members' *increased postsecondary educational attainment*—due to using education awards—Trostel (2015) did not provide specific tax rates. Therefore, this analysis treated the increases in tax revenue as lifetime values expressed in 2021 dollars. The analysis assumed 100 percent of those lifetime tax revenues accrued by year 30 (i.e., in the long-term scenario), 50 percent accrued by year 15 (i.e., in the medium-term scenario), and nothing accrued 1 year post-program (i.e., in the short-term scenario).

Tax revenue derived from Breakthrough participants' increased educational attainment assumes a federal marginal income tax rate of 12 percent, the state income tax rate for Texas (0 percent), the Medicare tax rate (1.45 percent), and Social Security (6.2 percent). The assumed Texas sales tax, state and local, is 8.19 percent. The analysis applied these tax rates to the estimated earnings in each scenario.

²⁴ This benefit was calculated using lifetime tax revenue data from Trostel (2015). These values summed lifetime state income taxes, lifetime property taxes, and lifetime sales taxes by education level.

²⁵ This benefit was calculated using lifetime tax revenue data from Levin (2007) for high school graduation by race and gender and Trostel (2015) for postsecondary education.

²⁶ Reduced spending on public assistance due to Breakthrough AmeriCorps members' increased postsecondary educational attainment is included as a federal government benefit, not a state and local government benefit. This is because public assistance includes programs funded at the federal level (e.g., TANF, etc.).

- Reduced lifetime spending on public assistance, social insurance, and corrections²⁷ due to Breakthrough participants' increased educational attainment

State income tax revenue: To measure income tax revenue generation that stems from reduced unemployment for state governments (any local income taxes are not included), the additional pre-tax earnings of Breakthrough AmeriCorps members that are solely attributed to Breakthrough Central Texas's Austin program are taxed by a weighted, estimated proportional state income tax rate. This tax rate considers state-specific progressive tax brackets and standard deduction amounts. Based on the taxable income, the analysis estimated the proportional state income tax for each state as the amount of state income taxes paid per Breakthrough AmeriCorps member divided by their pre-tax earnings. This analysis then calculated the weighted average of these state-specific tax rates—using these states' populations from the 5-year estimates of the 2019 American Community Survey (U.S. Census Bureau, 2019-a)—to estimate a weighted national tax rate (i.e., 2.8 percent). A weighted national tax rate was used because Breakthrough AmeriCorps members may disperse to various locations nationwide following their service terms and continue to migrate over the course of their working years.

Lifetime state income tax revenue values are also provided by Trostel (2015) by education level. Based on the number of postsecondary degrees estimated to be obtained due to the use of the education award received after serving with Breakthrough Central Texas's Austin program, additional lifetime state income taxes are realized. Thus, the additional lifetime state income taxes' paid values—informed by data from Trostel (2015)—were first converted to 2021 dollars. The analysis then multiplied them by the inferred number of degrees obtained using the education award (which are listed in the fourth column of Table 18).

State governments also receive state income taxes from the education awards that Breakthrough AmeriCorps members receive post-service. The analysis estimated the pre-tax education award amount in 2019 dollars (i.e., \$6,155).²⁸ Then the analysis multiplied it by the number of Breakthrough AmeriCorps member FTEs expected to redeem the award and use it to pursue postsecondary education or to repay outstanding student loans, based on findings from Friedman et al. (2016). The result represents the pre-tax cumulative education award amount expected to be received by Breakthrough AmeriCorps members. The portion of this value taxed by state income taxes was estimated using a weighted state income tax rate specific to the per-person education award amount. Additionally, state income taxes were estimated for the

²⁷ Reduced spending on public assistance due to Breakthrough AmeriCorps members' increased post-secondary educational attainment is included as a federal government benefit, not a state and local government benefit. This is because public assistance includes programs funded at the federal level (e.g., TANF, etc.).

²⁸ This analysis used the 2020 to 2021 AmeriCorps education award amount (\$6,345) but discounted it to net present 2020 dollars using the Consumer Price Index. For more information about this education award, please see <https://americorps.gov/members-volunteers/segal-americorps-education-award/find-out-more>.

living allowance amount received by Breakthrough AmeriCorps members during their service term using tax rates specific to the per-person value. The different rates used for these member benefits are enumerated in Table 21.

Breakthrough program participants also generated additional income from increased education, but we assume participants will stay in Texas. Since Texas's state income tax rate is 0 percent, program participants do not generate additional state income tax.

State and local sales tax revenue: To measure sales tax revenue generation for state and local governments that stems from reduced unemployment, a weighted state and local sales tax rate was applied to the amount of Breakthrough AmeriCorps members' cumulative additional *post-tax* earnings that are available to be spent on taxable goods. To establish a weighted state and local sales tax, this analysis first summed the state sales tax rate and the average local sales tax rate for each state using data from Cammenga (2020). Then using 2019 data from the American Community Survey (U.S. Census Bureau, 2019-a), these state-level combined state and local sales tax rates were weighted based on the population of each state. The resulting weighted average sales tax rate used in this analysis was 7.43 percent.

To estimate the additional post-tax earnings as a result of reduced unemployment and program participation that was spent on taxable goods, data from the Consumer Expenditure Survey (U.S. Bureau of Labor Statistics, 2021) were used. These data show the amount of spending on a number of different goods and services by national consumers across several different pre-tax income brackets.²⁹ The proportion of earnings that is spent on taxable goods (such as alcoholic beverages, housekeeping supplies, apparel, etc.) was then calculated for consumers with incomes that matched the per-person average pre-tax earnings of Breakthrough AmeriCorps members. This value was 44.9 percent. This proportion was then applied to Breakthrough AmeriCorps members' cumulative additional *post-tax* earnings to calculate the post-tax monetary amount they spend on taxable goods. Then the sales tax rate (i.e., 7.43 percent) was applied to estimate the resulting sales tax revenues that go to state and local governments due to Breakthrough AmeriCorps members' reduced unemployment post-service.

Trostel (2015) also provides additional lifetime state and local sales tax values by education level. Using these values, the analysis calculated the additional sales tax revenue realized by state and local governments as a result of Breakthrough AmeriCorps members using their education award to achieve higher postsecondary educational attainment post-service. These values represent a direct benefit to state and local governments in the form of increased tax revenue.

²⁹ To calculate the estimated taxable expenditures, Consumer Expenditure Survey (CE) Table 1203 was used from the U.S. Bureau of Labor Statistics (2021). This table lists the annual expenditure means by pre-tax income tax brackets. Thus, the pre-tax earnings of Breakthrough AmeriCorps members were used instead of their post-tax earnings to calculate this metric. Please visit this site for more details:

<https://www.bls.gov/cex/tables/calendar-year/mean-item-share-average-standard-error.htm#cu-income>.

For Breakthrough program participants, the analysis estimated the number of additional graduates for each race, gender, and education level using Breakthrough Central Texas program data. The analysis then estimated increase in earnings for each group pre- and post-income tax. The median income for each group was determined with 2019's Current Population Survey data (U.S. Census Bureau, 2019-c). With this, the proportion of earnings spent on taxable goods was calculated for each demographic group and applied to their post-tax earnings to calculate the amount they spend on taxable goods. Then the analysis applied the Texas state and local sales tax (8.19 percent) to determine the increase in state and local sales tax attributable to additional program participant education.

State and local government cost savings: State and local governments also benefit from Breakthrough Central Texas's Austin program through lifetime savings in public assistance, social insurance, and corrections—as reported in Trostel (2015) and Levin (2007)—due to the increase in Breakthrough AmeriCorps members' postsecondary educational attainment after program exit and increased educational attainment of Breakthrough program participants. Of note, social insurance includes unemployment insurance and workers' compensation. To calculate these lifetime non-federal government savings, the analysis first calculated the decrease in public assistance, social insurance, and corrections costs (and thus, savings) from one education level to the subsequent education level using data from Trostel (2015) and then multiplied these monetary amounts by the number of additional postsecondary degrees estimated to be obtained due to the use of the education awards and program participation. Levin (2007) provides these cost savings for obtaining a high school diploma by race and gender demographic groups. The analysis applied these savings by estimated additional graduates by demographic group to obtain the state and local cost savings of additional high school graduates.

To determine what portion of this differential represents lifetime cost savings to state or local governments versus the federal government, a different method was employed for each of these cost savings areas. For social insurance, 50 percent of lifetime unemployment insurance cost savings and all the lifetime cost savings for workers' compensation are apportioned to state and local governments (Oswald, 2018). Regarding reductions in lifetime corrections spending, the portion between the federal and state or local governments was determined based on data from Hyland (2015). Specifically, this report found that 8.4 percent of U.S. corrections costs is paid by the federal government and the remaining 91.6 percent is paid by state and local governments. Therefore, almost 92 percent of the lifetime cost savings in corrections due to Breakthrough AmeriCorps members experiencing an increase in postsecondary educational attainment post-service are allocated to state and local governments.

Federal Government

The federal government benefits from:

- Additional federal income, Social Security, and Medicare tax revenue from Breakthrough AmeriCorps members' increased earnings due to reduced unemployment
- Additional federal income, Social Security, and Medicare taxes from the living allowance and education award received by these members
- Additional lifetime federal taxes due to Breakthrough AmeriCorps members' increased postsecondary educational attainment
- Additional lifetime federal taxes due to Breakthrough program participants' increased secondary and postsecondary educational attainment
- Reduced lifetime spending on public assistance, social insurance, and corrections due to Breakthrough AmeriCorps members' increased postsecondary educational attainment
- Reduced lifetime spending on public assistance, social insurance, and corrections due to Breakthrough program participants' increased educational attainment

Federal income tax revenue: To measure federal income tax revenue that stems from reduced unemployment, the additional pre-tax earnings of Breakthrough AmeriCorps members that are solely attributed to the Breakthrough program—as well as the pre-tax living allowance and education award amounts received by Breakthrough AmeriCorps members—are taxed by a federal income tax rate. The rates used are estimated proportional tax rates that consider the standard deductions and progressive tax brackets specific to federal income taxes as provided by El-Sibaie (2019). To reiterate, an estimated proportional tax rate equals the total amount of taxes estimated to be paid divided by the pre-tax amount of the value to be taxed (e.g., per-person average pre-tax earnings). The specific federal income tax rates used for these different benefits are enumerated in Table 21. Of note, different tax rates were used because they were specific to the per-person pre-tax earnings, living allowance, and education award amounts.

For the additional lifetime earnings of Breakthrough AmeriCorps members that is based on their increase in postsecondary educational attainment—made possible by the use of the education award—Trostel (2015) provides additional lifetime federal income tax values. These values were used to calculate the additional income tax revenue realized by the federal government due to members' postsecondary education gains.

For Breakthrough program participants, the analysis estimated the number of additional high school and bachelor's degrees obtained for each race, gender, and grade level (7th and 8th graders). The analysis then estimated an increase in earnings for each group pre-income tax. Then, the analysis applied a marginal tax rate (12 percent) to determine the increase in federal income tax attributable to additional program participant education.

Social Security and Medicare tax revenue: Social Security and Medicare tax revenue are measured as fiscal gains as a result of the additional pre-tax earnings of Breakthrough AmeriCorps members from their reduced unemployment and as a result of the pre-tax living allowances and education awards amounts received by members. However, tax rates specific to each revenue source are used. Social Security and Medicare use flat tax rates, 6.2 percent and 1.45 percent, respectively; thus, these rates are applied to the additional pre-tax earnings of Breakthrough AmeriCorps members to calculate the additional amount of revenue the federal government receives. These same rates are also applied to the living allowance and education award amounts received by Breakthrough AmeriCorps members to calculate additional tax revenue.

Moreover, lifetime Social Security tax values are provided by Trostel (2015) by education level. The analysis used these values to estimate the additional lifetime Social Security tax revenue realized by the federal government as a result of Breakthrough AmeriCorps members using their education award to complete different postsecondary education degree types post-service.

For Breakthrough program participants, the analysis estimated the number of additional high school and bachelor's degrees obtained for each race, gender, and grade level (7th and 8th graders). The analysis then estimated an increase in earnings for each group pre-income tax. Then the analysis applied the Social Security and Medicare taxes (6.2 and 1.45 percent respectively) to determine the increase in federal income tax attributable to additional program participant education.

Federal government cost savings: The federal government realizes cost savings in public assistance, social insurance, and corrections due to the increased postsecondary educational attainment of Breakthrough AmeriCorps members after program exit. Specifically, the number of additional postsecondary degrees estimated to be earned by Breakthrough AmeriCorps members post-service as well as data from Trostel (2015) were used to estimate the federal government portion of lifetime cost savings on social insurance (which is composed of workers' compensation and unemployment insurance, as noted earlier), public assistance (e.g., SNAP, Medicaid, TANF, etc.), and corrections.

Table 20 shows the lifetime costs to the federal versus the state and local governments for each of these areas—where applicable—by education level in 2012 dollars as presented in Trostel (2015). The differences in these lifetime costs from one education level to the next represent cost savings per degree obtained.

Table 20. Government Costs by Education Attainment Level per Individual's Lifetime

Source of government cost	Associate degree (2012\$)	Bachelor's degree (2012\$)	Graduate degree (2012\$)
Public assistance	\$31,803	\$14,480	\$9,394
Social insurance	\$8,209	\$5,863	\$4,732
Federal	\$3,570	\$2,660	\$2,090
State/local	\$4,639	\$3,204	\$2,643
Corrections	\$4,055	\$1,190	\$725
Federal	\$341	\$100	\$61
State/local	\$3,714	\$1,090	\$664

Note: Numbers may not sum due to rounding.

Source: Trostel (2015)

As mentioned earlier in this appendix, as a result of Breakthrough Central Texas's Austin program, the analysis estimated an additional 7 Breakthrough AmeriCorps members would redeem the education award to *pursue* additional postsecondary education. Based on the portion of degree costs covered by the post-tax education award, this analysis calculated that an additional associate degree, bachelor's degree, and graduate degree would be *obtained* due to Breakthrough Central Texas's Austin program. To conservatively calculate the federal government's lifetime savings associated with these education gains, the differences between the public assistance, federal social insurance, and federal corrections lifetime costs for these education levels and those that precede them are calculated and then expressed in 2019 dollars. These values are then multiplied by the number of additional postsecondary degrees estimated to be obtained—where appropriate—to represent the total cost savings realized by the federal government due to Breakthrough Central Texas's Austin program. As previously mentioned where discussing the state and local governments' allocation of the reduction in lifetime social insurance and corrections expenditures, the federal government receives 50 percent of the lifetime cost savings in unemployment insurance (part of social insurance; Oswald, 2018), and more than 8 percent of the lifetime cost savings in corrections (Hyland, 2015). These federal government savings are shown in Table 22.

The federal government also realizes lifetime cost savings from Breakthrough Austin program participants' increased educational attainment. The methodology used to calculate these lifetime benefits is described in the previous State and Local Government section. Specifically, this analysis estimated that the federal government realizes \$1,298,210 in lifetime cost savings, which are attributable to Breakthrough Central Texas's Austin program.

Table 21 shows the tax rates applied to Breakthrough AmeriCorps members' additional pre-tax and post-tax earnings (derived from reduced unemployment), depending on the type of revenue being calculated. It also enumerates the tax rates used for the pre-tax living allowance and education award amounts received by Breakthrough AmeriCorps members during their service term or upon service completion, respectively.

Table 21. 2020 Tax Rates and Ratio of Taxable Expenditures for Breakthrough AmeriCorps Members' Earnings, Living Allowances, and Education Awards

Metric	Rate for additional earnings & education award*	Rate for living allowance & education award**	Notes
Estimated proportional federal income tax	7.28%	4.91%	<ul style="list-style-type: none"> Tax rates are used that consider the progressive tax brackets and standard deductions specific to federal income taxes. These rates are dependent on and applied to the pre-tax value of each metric being taxed.
Estimated proportional state income tax	2.82%	2.40%	<ul style="list-style-type: none"> Tax rates are used that consider the progressive tax brackets and standard deductions specific to each state's income taxes. Each state's tax rate is weighted based on the state's population and summed to estimate a weighted national average. These rates are dependent on and applied to the pre-tax value of each metric being taxed.
Social Security tax	6.20%	6.20%	<ul style="list-style-type: none"> Social Security tax rate for employees and employers. These rates are applied to the pre-tax value of each metric being taxed.
Medicare tax	1.45%	1.45%	<ul style="list-style-type: none"> Medicare tax rate for employees and employers. These rates are applied to the pre-tax value of each metric being taxed.

Metric	Rate for additional earnings & education award*	Rate for living allowance & education award**	Notes
Sales tax	7.43%; N/A to the education award	7.43%; N/A to the education award	<ul style="list-style-type: none"> The combined state and average local tax rate for each state was summed and weighted based on states' populations to calculate a national weighted average sales tax rate. The rate is applied to the additional post-tax earnings of members as well as their post-tax living allowance amount.
Ratio of taxable expenditures per national consumer	41.29%; N/A to the education award	57%; N/A to the education award	<ul style="list-style-type: none"> Percentage of post-tax earnings spent on taxable goods and services that is used to calculate sales tax from post-tax earnings. Ratio is dependent on the pre-tax value of members' additional earnings or the pre-tax living allowance amount.

*These rates are only used for the portion of the education award used to repay outstanding student loans.

**These rates are only used for the portion of the education award used for additional schooling.

Sources: Cammenga (2020), Social Security Administration (2020), Consumer Expenditures Survey (U.S. Bureau of Labor Statistics, 2021), and El-Sibaie (2019)

Summary of Benefits to Government

Table 22 shows the amount of tax revenue generated and savings in expenditures for state and local versus federal government that are solely credited to Breakthrough Central Texas's Austin program and calculated using the methods described above. These government revenue and savings amounts are benefits that are included in the three ROI calculations, and they are derived from Breakthrough Central Texas's Austin program impacts.

Table 22. State/Local and Federal Government Benefits by Stakeholder Group and by Scenario

Benefit type	Benefit (2020\$)		
	Short-term	Medium-term	Long-term
State/local government benefits	\$9,464	\$474,307	\$839,883
State income tax revenue from education awards, living allowances,* and employment	\$318	\$3,158	\$4,054
State and local sales tax revenue from living allowances and employment	\$9,145	\$13,691	\$15,635

Benefit type	Benefit (2020\$)		
	Short-term	Medium-term	Long-term
State income, sales, and property taxes from AmeriCorps member educational attainment (lifetime)	\$-	\$10,775	\$21,551
State income, sales, and property taxes from Breakthrough Austin participant educational attainment (lifetime)	\$-	\$107,595	\$198,013
Savings in reduced public assistance, social insurance, and corrections spending from member postsecondary educational attainment (lifetime)	\$-	\$579	\$1,158
Savings in reduced public assistance, social insurance, and corrections spending from program participant educational attainment (lifetime)	\$-	\$338,508	\$599,981
Federal government benefits	\$33,836	\$1,340,170	\$2,391,564
Federal income tax revenue education awards and living allowances*	\$17,843	\$17,843	\$17,843
Social Security and Medicare tax revenue from education awards and living allowances*	\$13,650	\$13,650	\$13,650
Federal income tax revenue from employment	\$1,431	\$14,194	\$18,222
Social Security and Medicare tax revenue from employment	\$912	\$9,049	\$11,616
Federal income and Social Security tax revenue from postsecondary educational attainment (lifetime)	\$-	\$40,150	\$80,299
Federal income and Social Security tax revenue from program participant educational attainment (lifetime)	\$-	\$686,908	\$1,298,210
Savings in reduced social insurance, corrections, and public assistance spending from member postsecondary educational attainment (lifetime)	\$-	\$2,868	\$5,736
Savings in reduced social insurance, corrections, and public assistance spending from program participant educational attainment (lifetime)	\$-	\$555,510	\$945,989
Total	\$43,300	\$1,814,477	\$3,231,447

*Living allowances and education awards are one-time taxable payments. The resulting tax revenue does not vary by scenario.

Note: Numbers may not sum due to rounding.

Measuring Forgone Benefits (Opportunity Costs)

The analysis included two types of forgone benefits, referred to as *opportunity costs*, in each of the three ROI calculations to conservatively estimate the return of Breakthrough Central Texas's Austin program: forgone benefits from a professional opportunity cost to Breakthrough AmeriCorps members and forgone benefits from an investment opportunity cost to funders. Each of these forgone benefit (opportunity cost) types is subtracted from the total program benefits—that stem from Breakthrough Central Texas's Austin program—to calculate net benefits. Net benefits are then compared to the program cost to calculate each ROI. The methodologies used to calculate these two forgone benefits (opportunity costs) are described below.

Forgone Benefits From Professional Opportunity Cost to Breakthrough AmeriCorps Members

There is a professional opportunity cost to Breakthrough AmeriCorps members for their period of national service, during which they could have otherwise been working. This includes both the forgone earnings of Breakthrough AmeriCorps members for their service term and the forgone taxes associated with those lost earnings. To calculate this, the analysis first used the demographic distribution of Breakthrough AmeriCorps members for the 2019–2020 program year—in terms of gender, age, race/ethnicity, and pre-service education level—and ASEC data to estimate the weighted unemployment rate for this population (i.e., 4.2 percent). This represents how many of these Breakthrough AmeriCorps members would have been unemployed if they did not serve with Breakthrough Central Texas's Austin program. Using the weighted unemployment rate and the number of Breakthrough AmeriCorps member FTEs who served during the 2019–2020 program year (i.e., 9), the analysis estimated the number of members who would have been employed without serving with Breakthrough Central Texas's Austin program based on their demographic characteristics (i.e., 2). Then the analysis multiplied this value by the weighted post-tax annual earnings per-person, shown in Table 23. The methodology used to calculate this latter monetary amount is described in the previous Increased Earnings Due to Reduced Unemployment section. The post-tax amount subtracts all applicable payroll taxes (e.g., federal income, state income, Medicare, and Social Security). The product of multiplying 2 by the weighted post-tax annual earnings represents what Breakthrough AmeriCorps members would have earned in total if they did *not* serve with Breakthrough Central Texas's Austin program. Separately, the analysis then multiplied the number of Breakthrough AmeriCorps member FTEs who served by the amount they earned during their national service in the form of a post-tax living allowance (i.e., \$10,840 per person). This represents the aggregate amount Breakthrough AmeriCorps members earned during their service term. The difference between what they would have earned if they did not serve and what they did earn because they served equals the total post-tax earnings forgone due to serving with Breakthrough Central Texas's Austin program. These values and the formula used to calculate the forgone post-tax earnings are shown in Table 23.

Table 23. Forgone Earnings of Breakthrough AmeriCorps Members for a Service Term

Row	Component	Value	Source
A	Breakthrough Austin middle school AmeriCorps member FTEs	9	Breakthrough Central Texas
B	Weighted unemployment rate	5.6%	U.S. Census Bureau (2019-b) & Breakthrough Central Texas
C	Weighted post-tax annual earnings per person (2021\$)	\$23,409	U.S. Census Bureau (2019-b), U.S. Bureau of Labor Statistics (2019-a), & Breakthrough Central Texas
D	Post-tax living allowance per person	\$10,840	Breakthrough Central Texas
E	Total post-tax earnings forgone (2021\$)	\$98,257	$[A \times (1 - B) \times C] - (A \times D)$

Note: Numbers may not sum due to rounding.

The second portion of this professional opportunity cost was the forgone taxes associated with the earnings of Breakthrough AmeriCorps members lost for this year of service. Federal income, state income, Social Security, and Medicare taxes specific to the per-person weighted pre-tax earnings amount were calculated. Specifically, the estimated proportional federal and state income tax rates used were 7.3 percent and 2.8 percent, respectively. The analysis also estimated the sales taxes lost based on the per-person post-tax earnings forgone by the Breakthrough AmeriCorps members. Using data from the Consumer Expenditure Survey (U.S. Bureau of Labor Statistics, 2021), the analysis estimated that based on the per-person weighted pre-tax earnings of Breakthrough AmeriCorps members (i.e., \$27,035), 44.9 percent of their income would have been spent on taxable goods, as opposed to 53.1 percent of the living allowance. Then the weighted combined state and local sales tax rate (i.e., 7.43 percent)—used earlier in this analysis to calculate government benefits—was applied to the difference in expected spending on taxable goods to represent the resulting sales tax revenue lost due to individuals serving with Breakthrough Central Texas's Austin program instead of working for higher pay. The totals for these taxes are listed in Table 24.

Table 24. Forgone Taxes Associated With the Forgone Earnings of Breakthrough AmeriCorps Members for a Service Term

Forgone taxes	Taxes without service term (2021\$)	Taxes realized from living allowance (2021\$)	Net taxes forgone (2021\$)
Federal forgone taxes (i.e., federal professional opportunity cost)	\$31,891	\$9,757	\$22,134
Federal income taxes	\$13,705	\$524	\$13,181
Social Security and Medicare taxes	\$18,186	\$9,233	\$8,953
Non-federal forgone taxes	\$13,562	\$9,291	\$4,271
State income taxes	\$6,656	\$3,379	\$3,277
Sales taxes	\$6,905	\$5,911	\$994
Total Taxes	\$45,453	\$38,096	\$26,405

Note: Numbers may not sum due to rounding.

For the *federal government benefits per federal dollar* ROI calculation, only federal government (not total) benefits are included. Because of this, only federal components of the professional opportunity cost are subtracted from all federal government benefits—realized due to Breakthrough Central Texas’s Austin program—in this ROI calculation. The parts of the professional opportunity cost subtracted from these total federal government benefits include the forgone net federal income taxes (i.e., \$13,181) and the net forgone Social Security and Medicare taxes (i.e., \$8,953). The sum of these two values is called the *federal professional opportunity cost*. The sum of all the values listed in Table 24 and the forgone post-tax earnings of Breakthrough AmeriCorps members is called the *total professional opportunity cost*. These naming conventions are referenced in the Calculating ROI section.

Forgone Benefits From the Investment Opportunity Cost to Funders

The investment opportunity cost estimates the expected forgone return if funds used to support the activities and positions of Breakthrough AmeriCorps members during the most recent program year were invested in U.S. Treasury bonds instead. An investment opportunity cost is calculated for two different funding streams: 1) all Breakthrough program funding for the 2019–2020 program year and 2) only federal funding for the same program year. This is done because two of the three ROI calculations only have federal (not total) program costs included. Thus, for 1) the *federal government benefits per federal dollar* and 2) the *total benefits per federal dollar* ROI calculations, the investment opportunity cost subtracted from the benefits in these calculations is the forgone accrued interest from investing *only* the federal funds into these U.S. Treasury bonds. For the other ROI calculation, the investment opportunity cost subtracted from the benefits realized is the forgone accrued interest from investing *all* Breakthrough program funds (both federal and non-federal) into these U.S. Treasury bonds. Therefore,

the analysis estimated forgone accrued interests across all three scenarios when 1) all Breakthrough program funds and 2) only federal Breakthrough program funds are invested in U.S. Treasury bonds.

To calculate these forgone accrued interest values, the analysis first matched 2019 real interest rates provided by the Office of Management and Budget (2020) to each of the scenarios included in this ROI analysis. The analysis used 2019 real interest rates for U.S. Treasury bonds because the Breakthrough program year analyzed began in 2019. The real interest rate for the 3-year maturity was used for the short-term scenario, the average between the 10-year and 20-year maturity rates was used as the rate for the medium-term scenario, and the 30-year maturity rate was used for the long-term scenario. These real interest rates were 1.3 percent, 1.45 percent, and 1.5 percent, respectively (Office of Management and Budget, 2020). Also, the number of years elapsed on these U.S. Treasury bonds was equal to the number of years the different scenarios assumed Breakthrough AmeriCorps members' employment and earnings gains were sustained. These values are 1 year, 15 years, and 30 years for the short-, medium-, and long-term scenarios, respectively. Given that U.S. Treasury bonds compound biannually, according to the U.S. Department of the Treasury (2019), the formula used to calculate the forgone accrued interest for each of the three scenarios for the two funding streams is listed in Figure 5, where A equals the forgone accrued interest (e.g., the investment opportunity cost), P equals the amount of one of the funding streams, r equals the 2019 real interest rate, and t equals the number of years elapsed.

Figure 5. Compound Interest Formula Used to Calculate Investment Opportunity Cost

$$A = P \left(1 + \frac{r}{2} \right)^{t*2} - P$$

Based on this formula, the forgone benefits from the investment opportunity cost calculated by scenario and funding stream are listed in Table 25, along with their associated inputs. The forgone accrued interest amounts for all funding are called the *total investment opportunity costs* while that for federal funding only are called the *federal investment opportunity costs*. These naming conventions are referenced in the Calculating ROI section.

Table 25. Forgone Benefits From Investment Opportunity Cost Calculation by Scenario and Funding Stream

Metric	Short-term		Medium-term		Long-term	
	All funding	Federal funding only	All funding	Federal funding only	All funding	Federal funding only
Real interest rate	0.6%		0.8%		1.0%	
Years elapsed	1		15		30	
Funding amount	\$810,388	\$151,845	\$810,388	\$151,845	\$810,388	\$151,845
Forgone return (accrued interest)	\$9,343	\$1,247	\$173,358	\$23,143	\$405,245	\$54,100

Measuring Program Costs

Table 26 shows the costs of Breakthrough Central Texas's Austin program by cost category and funding source. AmeriCorps funds roughly 19 percent of the program through their AmeriCorps State and National grant while other funders contribute 81 percent.

Table 26. Funding Sources and Amounts for Breakthrough Central Texas's Austin Program (2018–2019)

Funding source	Amount	Percentage of Total
Cost categories	\$810,388	
Operating	\$631,963	78%
AmeriCorps member expenses	\$178,425	22%
Funding source	\$810,388	
AmeriCorps	\$151,845	19%
Other	\$658,543	81%

Note: Numbers may not sum due to rounding.

Source: Breakthrough Central Texas (2022)

Calculating ROI

To complete the three ROI calculations for Breakthrough Central Texas's Austin program, the sum of applicable program benefits is reduced by the forgone benefits, or the professional and investment opportunity costs (where appropriate), and then compared to the cost of the program. As described previously, these three ROI

calculations are calculated for each of the three scenarios: short-term, medium-term, and long-term.

Since two of the calculations include benefits to society (e.g., Breakthrough AmeriCorps members, Breakthrough program participants, etc.), the results are expressed as cost–benefit ratios, while maintaining the ROI terminology. Specifically, these ratios take the form of the sum of monetized benefits over the sum of applicable program costs. The ROIs expressed as cost–benefit ratios in this study can be interpreted as the amount of dollars returned for every \$1 of investment (or program cost).³⁰

The formulas used to calculate each of the three ROIs are shown below:³¹

$$\text{Total Benefits per Federal Dollar} = \frac{(\text{Benefits to Non-Government Stakeholders} + \text{Benefits to Government}) - (\text{Forgone Benefits From Total Professional Opportunity Cost} + \text{Forgone Benefits From Federal Investment Opportunity Cost})}{(\text{AmeriCorps Federal Funding})}$$

$$\text{Total Benefits per Funder Dollar} = \frac{(\text{Benefits to Non-Government Stakeholders} + \text{Benefits to Government}) - (\text{Forgone Benefits From Total Professional Opportunity Cost} + \text{Forgone Benefits From Total Investment Opportunity Cost})}{(\text{AmeriCorps Federal Funding} + \text{Non-Federal Match Funding})}$$

$$\text{Federal Government Benefits per Federal Dollar} = \frac{(\text{Benefits to the Federal Government}) - (\text{Forgone Benefits From Federal Professional Opportunity Cost} + \text{Forgone Benefits From Federal Investment Opportunity Cost})}{(\text{AmeriCorps Federal Funding})}$$

Table 27, Table 28, and Table 29 show the total benefits, opportunity costs, program costs, and ROI results for each scenario.

Table 27. ROI Calculations for Short-Term Scenario

Components	Total benefits per federal dollar (2021\$)	Total benefits per funder dollar (2021\$)	Federal government benefits per federal dollar (2021\$)
Total program benefits	\$164,942	164,942	\$33,836
Total forgone benefits (opportunity costs)	\$140,541	\$140,541	\$24,729
Total program costs	\$151,845	\$810,388	\$151,845
Result	\$0.16	\$0.03	\$0.06

³⁰ ROIs can be expressed in percentages or as ratios, such as in this study. Although not shown as a ratio in the results, the ROIs in this study show the amount of return for every \$1 invested.

³¹ Non-government stakeholders in this ROI analysis include Breakthrough AmeriCorps members and program participants.

Table 28. ROI Calculations for Medium-Term Scenario

Components	Total benefits per federal dollar (2020\$)	Total benefits per funder dollar (2020\$)	Federal government benefits per federal dollar (2020\$)
Total program benefits	\$4,842,619	\$4,842,619	\$1,340,170
Total forgone benefits (opportunity costs)	\$304,557	\$304,557	\$46,625
Total program costs	\$151,845	\$810,388	\$151,845
Result	\$29.89	\$5.60	\$8.52

Table 29. ROI Calculations for Long-Term Scenario

Components	Total benefits per federal dollar (2020\$)	Total benefits per funder dollar (2020\$)	Federal government benefits per federal dollar (2020\$)
Total program benefits	\$8,820,672	\$8,820,672	\$2,391,564
Total forgone benefits (opportunity costs)	\$536,443	\$536,443	\$77,582
Total program costs	\$151,845	\$810,388	\$151,845
Result	\$54.56	\$10.22	\$15.24

Appendix C: Results by Year

Table 30 shows the breakdown of costs and benefits over a 30-year period. Program activities create a stream of benefits over time to program participants, AmeriCorps members, the federal government, state and local governments, and society. AmeriCorps members' forgone benefits from professional opportunity cost apply to the first year. Funders' forgone benefits from investment opportunity cost accrue over time. Program costs are expended in the first year only. Program benefits are shown in nominal dollars.

Table 30. Breakthrough Central Texas Program Benefits and Costs per Year

Benefits and costs	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Benefits	\$134,286	\$21,778	\$22,168	\$22,569	\$156,485	\$323,177	\$330,486	\$338,015
Program participants	\$0	\$0	\$0	\$0	\$77,913	\$175,693	\$180,963	\$186,392
AmeriCorps members	\$101,566	\$15,709	\$15,998	\$16,297	\$16,604	\$16,921	\$17,247	\$17,582
Federal government	\$24,042	\$4,182	\$4,249	\$4,318	\$52,602	\$111,986	\$113,412	\$114,880
State and local government	\$8,678	\$1,887	\$1,920	\$1,954	\$9,366	\$18,577	\$18,864	\$19,160
Forgone benefits (opportunity costs)	\$140,541	\$12,383	\$12,383	\$12,383	\$12,383	\$12,383	\$12,383	\$12,383
Forgone benefits to members	\$102,798	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Forgone tax revenue	\$28,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>Federal taxes</i>	\$23,482	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>State/local taxes</i>	\$4,918	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Forgone benefits from total investments (all funders)	\$9,343	\$12,383	\$12,383	\$12,383	\$12,383	\$12,383	\$12,383	\$12,383
<i>Forgone benefits from federal investments</i>	\$1,247	\$1,653	\$1,653	\$1,653	\$1,653	\$1,653	\$1,653	\$1,653
Program costs	\$810,388	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Federal government	\$151,845	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-federal	\$658,543	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Return on Investment Study:
Breakthrough Central Texas, Austin

Benefits and costs	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16
Benefits	\$571,244	\$885,419	\$1,183,480	\$1,490,483	\$1,806,696	\$2,132,395	\$2,467,865	\$2,813,400
Program participants	\$350,652	\$575,548	\$868,064	\$1,169,355	\$1,479,685	\$1,799,325	\$2,128,554	\$2,467,660
AmeriCorps members	\$17,928	\$18,285	\$18,652	\$19,030	\$19,419	\$19,820	\$20,233	\$20,658
Federal government	\$171,480	\$246,340	\$250,810	\$255,415	\$260,157	\$265,042	\$270,073	\$275,256
State and local government	\$31,183	\$45,247	\$45,955	\$46,684	\$47,435	\$48,208	\$49,005	\$49,825
Forgone benefits (opportunity costs)	\$12,383	\$12,383	\$12,383	\$12,383	\$12,383	\$12,383	\$15,459	\$15,459
Forgone benefits to members	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Forgone tax revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>Federal taxes</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>State/local taxes</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Forgone benefits from total investments (all funders)	\$12,383	\$12,383	\$12,383	\$12,383	\$12,383	\$12,383	\$15,459	\$15,459
<i>Forgone benefits from federal investments</i>	\$1,653	\$1,653	\$1,653	\$1,653	\$1,653	\$1,653	\$2,063	\$2,063
Program costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Federal government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Return on Investment Study:
Breakthrough Central Texas, Austin

Benefits and costs	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24
Benefits	\$3,169,300	\$3,535,878	\$3,913,453	\$4,302,355	\$4,702,924	\$5,115,510	\$5,540,474	\$5,978,187
Program participants	\$2,816,940	\$3,176,697	\$3,547,248	\$3,928,915	\$4,322,032	\$4,726,942	\$5,144,000	\$5,573,569
AmeriCorps members	\$21,096	\$21,548	\$22,013	\$22,491	\$22,985	\$23,492	\$24,016	\$24,555
Federal government	\$280,594	\$286,092	\$291,754	\$297,587	\$303,595	\$309,783	\$316,157	\$322,721
State and local government	\$50,671	\$51,541	\$52,438	\$53,362	\$54,313	\$55,293	\$56,302	\$57,342
Forgone benefits (opportunity costs)	\$15,459	\$15,459	\$15,459	\$15,459	\$15,459	\$15,459	\$15,459	\$15,459
Forgone benefits to members	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Forgone tax revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>Federal taxes</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>State/local taxes</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Forgone benefits from total investments (all funders)	\$15,459	\$15,459	\$15,459	\$15,459	\$15,459	\$15,459	\$15,459	\$15,459
<i>Forgone benefits from federal investments</i>	\$2,064	\$2,064	\$2,064	\$2,064	\$2,064	\$2,064	\$2,064	\$2,064
Program costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Federal government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Benefits and costs	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Benefits	\$6,429,031	\$6,893,400	\$7,371,701	\$7,864,350	\$8,371,779	\$8,894,431
Program participants	\$6,016,026	\$6,471,756	\$6,941,158	\$7,424,642	\$7,922,631	\$8,435,559
AmeriCorps members	\$25,110	\$25,681	\$26,270	\$26,877	\$27,501	\$28,145
Federal government	\$329,483	\$336,448	\$343,621	\$351,010	\$358,621	\$366,459
State and local government	\$58,412	\$59,515	\$60,651	\$61,821	\$63,026	\$64,267
Forgone benefits (opportunity costs)	\$15,459	\$15,459	\$15,459	\$15,459	\$15,459	\$15,459
Forgone benefits to members	\$0	\$0	\$0	\$0	\$0	\$0
Forgone tax revenue	\$0	\$0	\$0	\$0	\$0	\$0
<i>Federal taxes</i>	\$0	\$0	\$0	\$0	\$0	\$0
<i>State/local taxes</i>	\$0	\$0	\$0	\$0	\$0	\$0
Forgone benefits from total investments (all funders)	\$15,459	\$15,459	\$15,459	\$15,459	\$15,459	\$15,459
<i>Forgone benefits from federal investments</i>	\$2,064	\$2,064	\$2,064	\$2,064	\$2,064	\$2,064
Program costs	\$0	\$0	\$0	\$0	\$0	\$0
Federal government	\$0	\$0	\$0	\$0	\$0	\$0
Non-federal	\$0	\$0	\$0	\$0	\$0	\$0

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